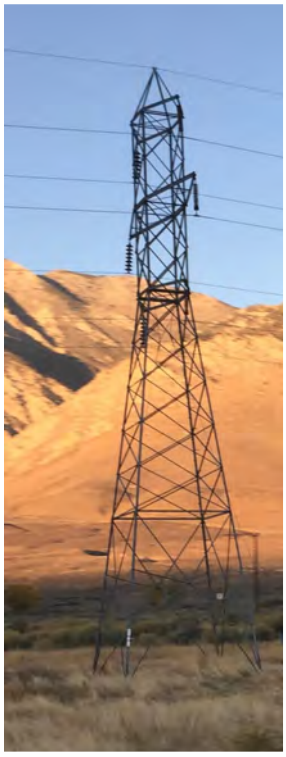
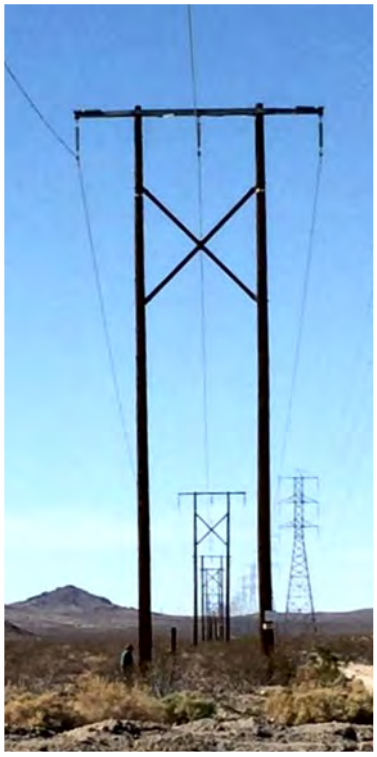
Draft Environmental Impact Report

SCE Ivanpah-Control Project

State Clearinghouse #2020080553



Prepared by

California Public
Utilities Commission

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ACRONYMS AND ABBREVIATIONS

AADT	Annual average daily traffic
AB	Assembly Bill
AC	Alternating Current
ACCR	Aluminum conductor composite reinforced
ACE	Areas of Conservation Emphasis
ACEC	Area of Critical Environmental Concern
ACHP	US Advisory Council on Historic Preservation
ACSR	Aluminum Conductor, Steel Reinforced
ADA	Americans with Disabilities Act
AF	acre-feet
AGR	Agriculture and Forestry Resources
AIA	Airport Influence Area
ALJ	Administrative Law Judge
ALS	Advanced life support
ALUCP	Airport Land Use Compatibility Plan
AMSL	Above mean seal level
AMR	American Medical Response
ANSI	American National Standards Institute
API	Area of Potential Impact
APM	Applicant-Proposed Measure
APN	Assessor Parcel Number
AQMP	Air Quality Management Plan
ARL	Additional Reserve Lands
ARPA	Archaeological Resource Protection Act
ATCMs	Airborne toxic control measures
BA	Biological Assessment
BACT	Best Available Control Technology
BCC	Bird of Conservation Concern
BGEPA	Bald and Golden Eagle Protection Act
BIA	Bureau of Indian Affairs
BIOS	Biogeographic Information System
BLM	Bureau of Land Management
BMP	Best management practice
BNSF	Burlington Northern and Santa Fe Railway
BO	Biological Opinion
BP	Before Present
BSA	Biological study area
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAISO	California Independent System Operator
CalEPA	California Environmental Protection Agency
CALFIRE	California Department of Forestry and Fire Protection
Cal-IPC	California Invasive Plant Council
CalOSHA	California Division of Occupational Safety and Health
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code

CC	California Candidate
CCR	California Code of Regulations
CCRD	Confidential Cultural Resource Database
CCTS	Central California Taxonomic System
CDCA	California Desert Conservation Area
CDFW	California Department of Fish and Wildlife
CDPH	California Department of Public Health
CE	California Endangered
CEC	California Energy Commission
CEHC	California Essential Habitat Connectivity Project
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CFC	California Fire Code
CFGC	CDFW Fish and Game Code
CFR	Code of Federal Regulations
CGP	Construction General Permit
CGS	California Geological Survey
CIWMB	California Integrated Waste Management Board
CLNAWS	China lake Naval Weapons Station
CLN	Conservation Lands Network
CNDDB	California Natural Diversity Database
CNEL	Community noise equivalent level
CNPS	California Native Plant Society
CO	Carbon monoxide
COS	Conservation, Open Space, and Working Lands Element
CPCN	Certificate of Public Necessity
CPS	Cleanup Program Sites
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CR	California Rare
CRS	Cultural Resource Specialist
CSC	California Species of Concern
CT	California Threatened
CUPA	Certified Unified Program Agency
CVC	California Vehicle Code
CWA	Clean Water Act
Db	Decibel
DHS	California Department of Health Services
DOC	California Department of Conservation
DOD	Department of Defense
DOI	Department of Interior
DOT	U.S. Department of Transportation
DPM	Diesel particulate matter
DPS	Distinct Population Segment
DRECP	Desert Renewable Energy Conservation Plan
DTSC	Department of Toxic Substances Control
DWR	Department of Water Resources

EA	Environmental Analysis
EDR	Environmental Data Resources, Inc.
EFS	Environmental Field Specialist
EHC	Environmental Health Criteria
EIR	Environmental Impact Report
EISA	Energy Independence and Security Act
EMF	Electric and magnetic fields
EOP	Emergency Operations Plan
EPA	Environmental Protection Agency
EPSS	Enhanced Powerline Safety Settings
ESA	Endangered Species Act (federal)
ESLs	Environmental screening levels
FAA	Federal Aviation Administration
FC	Federal Candidate
FE	Federal Endangered
FEIR	Final Environmental Impact Report
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FHSZ	Fire hazard severity zone
FIRM	Flood Insurance Rate Map
FLPMA	Federal Land Policy and Management Act
FMP	Field Management Plan
FMMP	Farmland mapping and Monitoring Program
FOCA	Federal Office of Civil Aviation
FPI	Fire Potential Index
FPs	Field Protocols
FRED	Field record environmental database
FT	Federal Threatened
GC	Government Code
GHG	Greenhouse gas
GHGRP	Greenhouse Gas Reporting Program
GO	General Order
GSA	General Services Agency
GSPs	Groundwater Sustainability Plans
GWP	Global warming potential
HABS	Historic American Building Survey
HAPs	Hazardous air pollutants
HCP	Habitat Conservation Plan
HDPE	High-density polyethylene
HFTD	High fire threat district
HHRLs	Human health risk levels
HLZ	Helicopter landing zone
HMBP	Hazardous Materials Business Plan
HWCL	Hazardous Waste Control Law
HYD	Hydrology and Water Quality
I	Interstate
IARC	International Agency for Research on Cancer
I-C	Ivanpah-Control
IEEE	Institute of Electrical and Electronics Engineers

IEPR	Integrated Energy Policy Report
IOU	Investor-owned utility
ITP	Incidental Take Permit
KOP	Key Observation Point
kV	Kilovolt
LDSP	Light-duty steel pole
LOS	Level of service
LQG	Large quantity generators
LRA	Local Responsibility Area
LSP	Lattice steel pole
LST	Lattice steel tower
LT	Long-Term
LTC	Local Transportation Commission
LTO	Landing and takeoffs
LUPA	Land Use Plan Amendment
LUST	Leaking Underground Storage Tank
LZ	Landing Zone
LZ/SA	Landing zones/staging areas
MBTA	Migratory Bird Treaty Act
MBZs	Map Book Zones
MCV	Manual of California Vegetation
MGCC	Minimum ground conductor clearance
MLC	Mineral Land Classification
MLD	Most Likely Descendant
MM	Mitigation measure
MMCRP	Mitigation Monitoring, Compliance, and Reporting Program
MMRP	Mitigation Monitoring and Reporting Plan
MND	Mitigated Negative Declaration
MOU	Memorandum of Understanding
MPR	Minor Project Refinement
MRDS	Mineral Resources Data System
MRZ	Mineral Resource Zone
MW	megawatt
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Planning
NCP	National Contingency Plan
NEHRP	National Earthquake Hazards Reduction Program
NERC	North American Electric Reliability Corporation
NFIP	National Flood Insurance Program
NFPA	National Fire Protection Association
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOA	Naturally occurring asbestos
NOC	Notice of Completion
NOE	Notice of Exemption
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service

NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NTC	National Training Center
NTPs	Notices to proceed
NWCG	National Wildfire Coordinating Group
OEIS	Office of Energy Infrastructure Safety
OHWM	Ordinary High Water Mark
OPGW	Optical ground wire
ORV	Off-road vehicle
OSCAR	Open Space, Conservation, and Recreation
OSHA	Occupational Safety and Health Administration
OVLMP	Owens Valley Land Management Plan
PAR	Property Analysis Record
PBDB	Paleobiology Database
PCE	Petroleum hydrocarbon constituents, tetrachloroethene
PEA	Proponent's Environmental Assessment
PERP	Portable Equipment Registration Program
PFM	Petition for Modification
PFYC	Potential Fossil Yield Classification
PPV	Peak Particle Velocity
PSD	Prevention of Significant Deterioration
PSPS	Public Safety Power Shutoff
PTC	Permit to Construct
PV	Photovoltaic
Qa	Surficial sediments
RCRA	Resource Conservation and Recovery Act
RMP	Resource Management Plan
RMS	Root-mean-square
ROG	Reactive organic gases
ROW	Rights-of-way
RPS	Renewables Portfolio Standard
RWQCB	Regional Water Quality Control Board
SA	Staging Area
SB	Senate Bill
SBC	San Bernardino County
SBCTA	San Bernardino County Transportation Authority
SCADA	Supervisory control and data acquisition
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SCH	State Clearinghouse
SDSs	Safety Data Sheets
SF6	Sodium hexafluoride
SFHAs	Special Flood Hazard Areas
SGMA	Sustainable Groundwater Management Act
SHMA	Seismic Hazard Mapping Act
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SLF	Sacred Lands File
SMARA	Surface Mining and Reclamation Act of 1975

SMGB	(California) State Mining and Geology Board
SPCC	Spill Prevention, Control, and Countermeasure
SQG	Small quantity generators
SR	State Route
SR-	State Route
SRA	State Responsibility Area
SSC	Species of Special Concern
SSHR	Sensitive Species and Habitat Report
SVP	Society for Vertebrate Paleontology
SW	Static ground wire
SWPPP	Stormwater pollution prevention plan
SWRCB	State Water Resources Control Board
TAC	Toxic air contaminant
TAZ	Transportation Analysis Zone
TCR	Tribal Cultural Resources
TLRR	Transmission Line Rating and Remediation
TMDL	Total maximum daily load
TMP	Traffic Management Plan
TPP	Transmission planning process
TSP	Tubular steel pole
US	United States
UBC	Uniform Building Code
UCERF	Uniform California Earthquake Rupture Forecast
UCMP	University of California, Museum of Paleontology
UFC	Uniform Fire Code
UPRR	Union Pacific Railroad
USA	Underground Service Alert
USACE	U.S. Army Corps of Engineers
USGS	U.S. Geological Survey
USNRTP	U.S. National Recreation Trails Program
UST	Underground storage tank
UWMPs	Urban Water Management Plans
VMT	Vehicle miles traveled
VS-VC	Visual Sensitivity – Visual Change
VVTA	Victor Valley Transit Authority
WA	Wilderness Area
WECC	Western Electricity Coordinating Council
WEAP	Worker Environmental Awareness Training Program
WHO	World Health Organization
WJTCA	Western Joshua Tree Conservation Act
WOTUS	Waters of the United States
WSAB	Wildfire Safety Advisory Board
WTRM	Wildfire Transmission Risk Model
WUI	Wildland Urban Interface

EXECUTIVE SUMMARY

ES.1. Introduction/Background

ES.1.1. Project Application and Purpose

Southern California Edison (SCE or "the Applicant") submitted Application No. A.19-07-015 on July 17, 2019, requesting that the California Public Utilities Commission (CPUC) issue a Permit to Construct (PTC) authorizing SCE to construct and operate the Ivanpah-Control Project (I-C Project or Proposed Project). SCE submitted its first amended application on April 13, 2020, and a second amended application on October 31, 2024.

The Proposed Project would require that some replacement structures be installed outside the existing corridor on which SCE has rights. In these locations, SCE would need to obtain new rights-of-way from the US Bureau of Land Management (BLM), the Bureau of Indian Affairs (BIA), the Department of Defense (DOD), the California State Lands Commission (CSLC), the Los Angeles Department of Water and Power (LADWP), or private landowners.

The CPUC is lead agency under the California Environmental Quality Act (CEQA) and has prepared this Environmental Impact Report to inform the public and to meet the needs of local and State permitting agencies to consider SCE's Proposed Project and alternatives to the project. The BLM is preparing a separate Environmental Impact Statement (EIS) under the National Environmental Policy Act (NEPA).

This EIR evaluates and presents the environmental impacts that are expected to result from construction and operation of SCE's Proposed Project, and presents recommended mitigation measures which, if adopted, would avoid or minimize the significant environmental impacts identified. In accordance with CEQA requirements, this EIR also identifies alternatives to the Proposed Project, including the No Project Alternative, which could avoid or minimize significant environmental impacts associated with the Project as proposed, and evaluates the environmental impacts associated with these alternatives. Based on this EIR as well as the relative severity of impacts in the study region, this EIR identifies an Environmentally Superior Alternative, as required by CEQA.

This EIR does not make a recommendation regarding the approval or denial of the Proposed Project or any alternative; it is purely informational and will be used by the CPUC in considering whether to approve the Proposed Project or an alternative analyzed in this EIR.

ES.1.2. Agency Process

Under CEQA, as amended (Public Resources Code Section 21080(a)), an environmental review document must be prepared, reviewed, and certified by the decision-making body before action is taken on any non-exempt discretionary project proposed to be carried out or approved by a State or local public agency in the State of California. Following CEQA review, the CPUC, as the lead agency, will act first to consider the project, before any other State or local agencies take action on the project. The CPUC Administrative Law Judge (ALJ) and Commissioners will use the EIR to inform the decision-making process regarding the Proposed Project. If the Proposed Project is approved by all required permitting agencies, the CPUC would be responsible for reviewing and approving all CEQA-related pre-construction compliance plans and ensuring that the Proposed Project construction and operations are conducted in accordance with the adopted mitigation measures and other permit conditions.

ES.1.3. CPUC Conclusion Regarding Environmentally Superior Alternative

The CPUC has identified the Environmentally Superior Alternative as being the Proposed Project, with replacement of approximately 58 miles of Segment 1 by the three alternatives: Crater Mountain, Manzanar, and Fossil Falls Realignment Alternatives.

ES.2. Description of the Proposed Project

SCE proposes to construct and operate the I-C Project to correct or "remediate" physical clearance discrepancies[1] identified along 262 miles of SCE's existing 115 kilovolt (kV) subtransmission lines located in Inyo, Kern, and San Bernardino Counties.[2] Figure ES-1 (Proposed Project Route and Segments) illustrates the project location.

The CPUC General Order 95 (GO 95) Rules 37 through 39 specify minimum vertical and horizontal clearances that must be maintained between an electrical conductor and other conductors, or between a conductor and the ground, buildings, and a variety of other objects.[3] SCE's effort to identify and remediate the conductor clearance discrepancies is called the Transmission Line Rating Remediation (TLRR) Program.[4] The Proposed Project would ensure compliance with CPUC GO 95 by remediating approximately 2,950 discrepancies identified through SCE's TLRR Program along seven (7) 115 kV circuits.

ES.2.1. Existing Subtransmission System

The existing subtransmission infrastructure within each segment of the Proposed Project, as illustrated in Figure ES-1 (Proposed Project Route and Segments), is divided into 4 segments spanning 9 existing substations. From north to south, the project segments are:

- **Segment 1: Control Substation to Inyokern Substation (126 miles long)**. Segment 1 contains 115 kV double-circuit towers and poles. Segment 1 was originally constructed in 1912 as part of the Tower Line originating at Control Station on the Bishop Creek Hydroelectric System to San Bernardino Steam Station, now the Calectric Substation. The lines transmit power from Bishop Creek Hydroelectric System, located on Bishop Creek, just west of the town of Bishop, California.
- **Segment 2: Inyokern Substation to Kramer Substation (48 miles long).** Segment 2 was constructed in 1913 and is referred to by SCE as the Kramer-Inyokern-Randsburg No.1 115 kV Subtransmission Line. Segment 2 was also originally constructed as part of the Tower Line originating at Control Station.
- **Segment 3N: Kramer Substation to Coolwater Substation (44 miles long).** Segment 3N was also constructed in 1913 and is referred to by SCE as the Kramer-Coolwater 115 kV Subtransmission line.
- **Segment 3S: Kramer Substation to Tortilla Substation to Coolwater Substation (44 miles long).** Segment 3S is composed of two 115 kV subtransmission line segments.
  - SCE's Kramer-Tortilla 115 kV Subtransmission Line was constructed in 1969. Segment 3S serves distribution loads in Barstow, California from the Tortilla Substation, located at the southern edge of the City of Barstow to the Coolwater Substation.
  - SCE's second subtransmission line in Segment 3S connects the Coolwater, SEGS2, and Tortilla substations with a 115 kV Subtransmission Line.

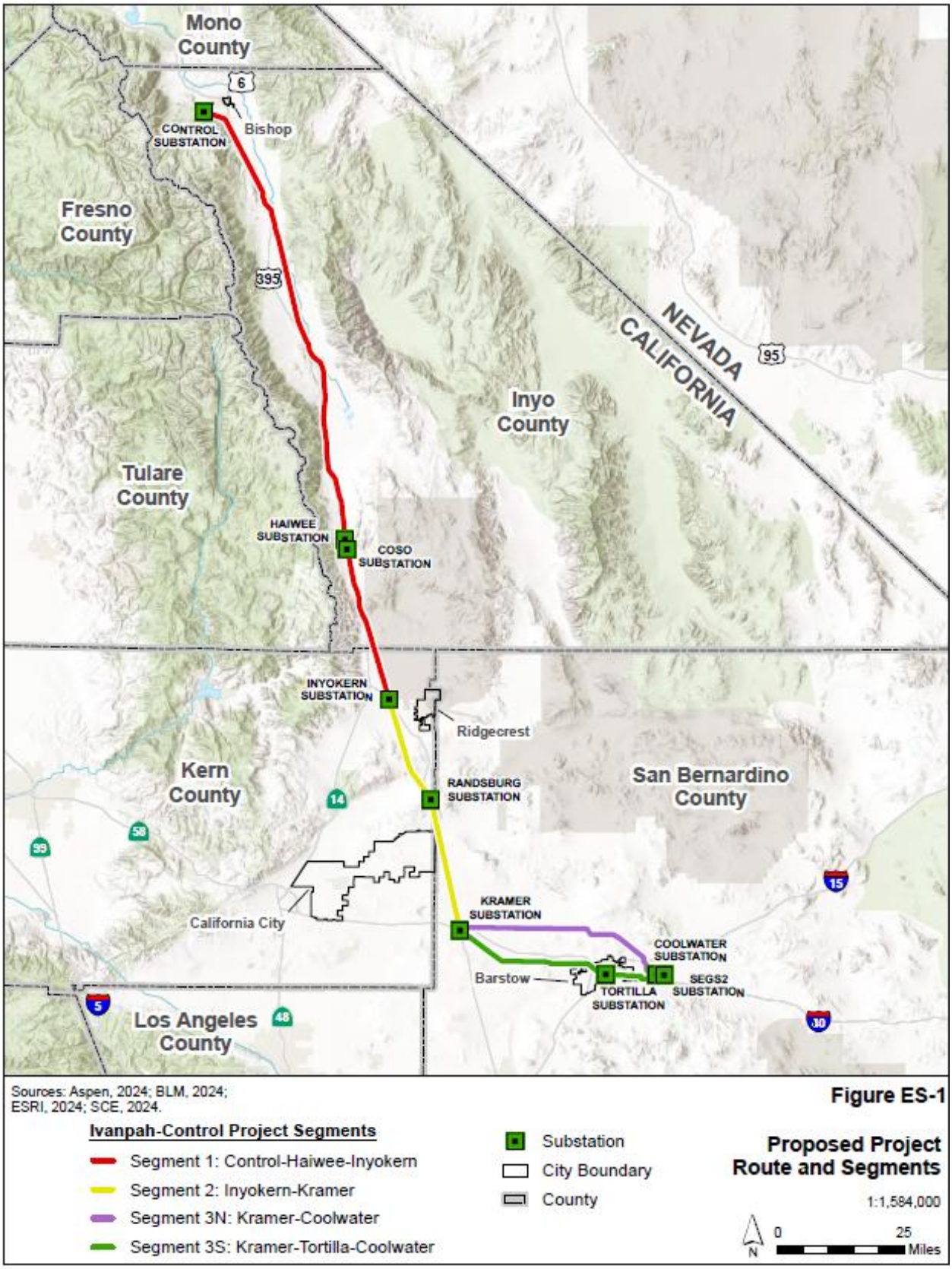
[1] An individual instance of non-compliance with CPUC General Order (GO) 95 clearance requirements is referred to as a discrepancy. Discrepancies are defined as potential clearance problems between an energized conductor and its surroundings, such as the structure, another energized conductor on the same structure, a different line, the ground, or other components. Remediation of discrepancies means that the clearance issues will be resolved to ensure compliance with standards contained in CPUC GO 95 and North American Electric Reliability Corporation (NERC) Facility Ratings.

[2] SCE identifies electrical lines operated at voltages between 50 kilovolts (kV) and 200 kV as subtransmission lines or subtransmission circuits. Electrical lines operated at voltages greater than 200 kV are identified as transmission lines. *Source*: PEA Section 2.1

[3] Conductor clearance in the field (e.g., between a conductor and the ground) is not a static value; it changes depending upon the operational characteristics of the line. As greater amounts of electricity are transmitted by a conductor, the conductor material heats up and expands, resulting in greater sag (and a lesser clearance) in a given span.

[4] The TLRR Program is focused on developing and implementing engineering solutions for each identified discrepancy to bring the circuits into compliance with standards contained in CPUC GO 95 and the California Independent System Operator (CAISO) 2008 Transmission Register.

Figure ES-1. Proposed Project Route and Segments



SCE constructed Segments 3N and 3S as parallel but separate 115 kV lines between the Kramer and Coolwater Substations for the purposes of system reliability.

ES.2.1.1. Proposed Project Actions by Segment

The corrective actions proposed by SCE within the 4 project segments are as follows:

- **Segments 1 and 2 (174 miles):** The TLRR Program identified a total of 1,681 spans[5] with discrepancies within **Segment 1** and 335 spans within **Segment 2**. Replacement structures in these segments would be located in a new alignment approximately 50 feet east of the existing alignment. The replacement of structures in this new alignment is necessary to provide continued service to Inyo, Kern, and San Bernardino Counties while the Project is being constructed.
- **Segments 3N and 3S (90 miles):** The TLRR Program identified 241 spans with discrepancies within Segment 3N and 230 in Segment 3S. SCE proposes reconductoring of the existing subtransmission line, in combination with replacement of a small number of structures, to remediate discrepancies and minimize environmental impacts.

ES.2.2. Objectives of the Proposed Project

ES.2.2.1. SCE Project Objectives

SCE's project objectives for the I-C Project are:

- Ensure compliance with standards contained in CPUC General Order 95 and NERC Facility Ratings for the project.
- Continue to provide safe and reliable electrical service.
- Meet I-C Project needs while minimizing environmental impacts.
- Design and construct the physical components of the I-C Project in conformance with industry and/or SCE's approved engineering, design, and construction standards for substation and subtransmission system projects.

The existing I-C transmission system includes five primary 115 kV circuits. In 2006, SCE identified that the clearances along some of its circuits were not compliant with the clearances set forth in CPUC GO 95 due to the installation of additional infrastructure under SCE lines over time; survey, engineering, and construction inaccuracies; the growth of vegetation; and changes in topography. The discrepancies[6] were reported to the North American Electric Reliability Corporation (NERC) by SCE, because the GO 95 discrepancies result in reduction to line ratings. A mitigation plan to address these discrepancies was filed with and accepted by the Western Electricity Coordinating Council (WECC).

The purpose of the I-C Project is to ensure compliance with CPUC GO 95 standards by remediating approximately 2,950 discrepancies identified through SCE's TLRR Program along the 4 segments comprising the existing 115 kV circuits. Based on the LiDAR and engineering modeling work, SCE's TLRR Program has developed a remediation plan for each discrepancy to ensure compliance with CPUC GO 95 standards.

[5] Spans are the horizontal distances between pairs of poles or tower structures.

[6] An individual instance of non-compliance with CPUC GO 95 clearance requirements is referred to as a discrepancy. Light Detection and Ranging (LiDAR) technology uses ultraviolet or near infrared light to image objects and map physical features. SCE uses aircraft equipped with LiDAR equipment to identify locations throughout SCE's service territory that do not meet the minimum required clearances for overhead lines established in CPUC GO 95.

ES.2.2.2. CPUC Project Objectives

After evaluation of SCE's objectives, the CPUC has defined three basic project objectives as follows:

- Rebuild or modify the subtransmission components of the existing I-C line segments so they are compliant with CPUC General Order 95, and they meet the reliability requirements defined in the NERC Facility Ratings.
- Design and construct the physical components of the I-C Project to meet current engineering, design, and construction standards for substation and subtransmission system projects.
- Continue to provide safe and reliable electrical service while minimizing the environmental impacts of the I-C Project by using existing right-of-way or obtaining new authorizations for other feasible line placement options where practicable opportunities exist.

These project objectives are used to evaluate alternatives to the Proposed Project.

ES.3. Summary of Public Involvement Activities

ES.3.1. Notice of Preparation and Public Scoping

In compliance with State CEQA Guidelines Section 15082, the CPUC issued a Notice of Preparation (NOP) to prepare an EIR on September 1, 2020, which began the 30-day public scoping period (September 1, 2020, to September 30, 2020). The NOP was filed with the Office of Planning and Research State Clearing House. The NOP was distributed to multiple agencies, including responsible and trustee agencies, public agencies with jurisdiction by law with respect to the proposed Project, organizations and individuals who have filed a written request for the notice, and property owners located near the Project area. The NOP was sent to agencies including: federal agencies such as multiple BLM Desert District field offices, National Park Service (NPS), multiple Department of Defense bases, and the US Fish and Wildlife Service; State agencies, such as California State Lands Commission, California Department of Fish and Wildlife, multiple Caltrans districts, and California Regional Water Quality Control Board; and local agencies such as Inyo, Kern, and San Bernardino County Planning and Public Works departments, the Bishop and Barstow-Daggett Airport, other county and regional service providers, and the cities of Barstow, Ridgecrest, and Bishop. The NOP also was sent to SHPO, the Native American Heritage Commission, and tribes located near the Project area, and property owners within 1,000 feet of the Project corridor.

Two scoping meetings were held (September 3 and 10, 2020) to facilitate receiving public comments. Due to COVID-19, the scoping meetings were conducted virtually, one in the afternoon and one in the evening to accommodate potential attendees' varying schedules. The September 3rd meeting was attended by 29 people. Four oral comments were received from tribal entities, which are documented in the Scoping Report. The September 10th meeting was attended by 17 people, and no comments were received during the meeting. Attendees at these virtual meetings included property owners, representatives from SCE, BLM, NPS, Fort Independence Tribe, Timbisha Shoshone Tribe, and Fort Mojave Indian Tribe. A total of 16 written comments were received during the scoping period.

The CPUC issued a Scoping Report in December 2020. The report summarized issues of concern based on written and oral comments from agencies, organizations, tribal entities, and members of the public. The report is available on the CPUC's project website at the following location:

https://ia.cpuc.ca.gov/environment/info/aspen/ivanpah-control/ic_scopingreport.pdf

ES.3.2. Facilitation of Project Information

An EIR e-mail address list was created, and a telephone hotline and Internet site for project information were established. The Internet site is used to post all the public environmental documents (including this Draft EIR) and to announce upcoming public meetings. All public notices appear on the CPUC's project website:

https://ia.cpuc.ca.gov/environment/info/aspen/ivanpah-control/ivanpah-control.htm

Throughout the process, the EIR team is available for questions and comments at (800) 535-2572 or by e-mail at Ivanpah-Control@aspeneg.com.

ES.3.3. Native American Consultation under Assembly Bill 52

The CPUC notified more than 40 tribal government representatives about the I-C Project in accordance with the requirements of Assembly Bill 52 (AB 52). The CPUC mailed AB 52 notification letters between late 2018 through 2019.

Scoping comments were received from the Native American Heritage Commission, Rincon Band of Luiseño Indians, Fort Independence Indian Reservation, and Colorado River Indian Tribes. Comments are included in the Scoping Report.

The CPUC consulted with 18 tribes on the Proposed Project. Consultation began with calls to provide an overview of the project and updates between October 2020 and February 2021. In May 2020, the CPUC held a project overview meeting for participating tribes for the Proposed Project and the SCE Control-Silver Peak Project, a separate project that would be located on the tribal lands of many of the same tribes. The CPUC continued to hold confidential consultation meetings and remain in contact with the Tribes regarding Proposed Project updates, project data sharing, and input on the Proposed Project through 2025 (to the publication of the Draft EIR). The CPUC held in-person AB 52 meetings, with a virtual attendance option on January 8, 2024, in Barstow and January 9, 2024, in Ridgecrest. The meetings included a summary of the Project, an overview of survey results, a summary of the Alternatives to the project, the CPUC approach to AB 52, an overview of an interactive map of ethnographic literature, project area, and survey results, and an open discussion.

Consultation with the Tribes regarding projects updates, data-sharing, and tribal input continued through the time of release of the Draft EIR. The CPUC held a site visit for Segment 1 and the Crater Mountain and Manzanar Realignment Alternatives from April 15-17, 2025. Sites included in the site visit were selected using criteria and suggestions obtained through official AB 52 consultation. Following the site visit, the CPUC continued communicating with the tribes on feedback the site visit and the Proposed Project. The CPUC consulted with the Tribes on proposed mitigation measures to reduce or avoid impacts cultural and tribal cultural resources through February 2026.

The 18 tribes formally consulting with the CPUC are the following:

- Big Pine Paiute Tribe of the Owens Valley
- Bishop Paiute Tribe
- Cocopah Indian Tribe
- Colorado River Indian Tribes
- Fernandeño Tataviam Band of Mission Indians
- Fort Mojave Indian Tribe
- Fort Independence Band of Paiute Indians
- Kern Valley Indian Community
- Lone Pine Paiute-Shoshone Tribe
- Mono Lake Kutzadika Tribe
- Morongo Band of Mission Indians
- Quechan Tribe of the Fort Yuma Reservation
- San Fernando Band of Mission Indians
- San Manuel Band of Mission Indians
- Tejon Indian Tribe
- Timbisha Shoshone Tribe
- Tubatulabals of Kern Valley
- Twenty-Nine Palms Band of Mission Indians

ES.3.4. Areas of Controversy / Public Scoping Issues

Concerns expressed by the public and agencies at the scoping meetings and during the public scoping period pertained to environmental resource topics in aesthetics, agriculture, biological resources, cultural and tribal cultural resources, and land use, as well as the consideration of alternatives.

ES.4. Applicant Proposed Measures

As part of the Project, the Applicant proposes to implement Applicant Proposed Measures (APMs) to ensure that the Project would occur with minimal environmental impacts and in a manner consistent with applicable rules and regulations. These measures would be implemented during the design, construction, and operation of the Project. APMs are considered part of the Project and are considered in the evaluation of environmental impacts (see Chapter 3, Environmental Analysis). Project approval would be based upon the Applicant adhering to the Project as described in this document, including the project description and the APMs, as well as any mitigation measures that may be imposed by the CPUC. The full text of SCE's APMs is included in EIR Section 2.8 (Applicant Proposed Measures). Based on the analysis in Chapter 3 of the EIR, some APMs are superseded by mitigation measures, if the APM language is determined to be insufficient to mitigate the impacts defined.

ES.5. Environmental Impacts

Table ES-2 (Summary of Impacts, presented at the end of this section) lists the identified environmental impacts and recommended mitigation measures for the I-C Project. Detailed descriptions of impacts of the Proposed Project are provided in Chapter 3, along with a discussion of cumulative impacts in Chapter 5. The impact analysis in the EIR was prepared by topic area and presents an assessment of the identified direct and indirect impacts and discloses the level of significance for each impact. The analysis also identifies mitigation measures to reduce or avoid significant impacts of the proposed Project and the alternatives.

A significant impact is defined under CEQA as "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project" (CEQA Guidelines § 15382). The categories of potential effects are provided below.

Direct Effects	Effects caused by the proposed Project that occur at the same time and place as the proposed Project
Indirect Effects	Effects caused by the proposed Project that occur later in time, or further in distance, but are still reasonably foreseeable
Residual Impacts	Impacts that still meet or exceed significance criteria after application of mitigation and, therefore, remain significant
Cumulative Impacts	Impacts resulting from the proposed Project when combined with similar effects of other past, present, and reasonably foreseeable future projects, regardless of which agency or person undertakes such projects (cumulative impacts could result from individually insignificant but collectively significant actions taking place over time)
Short-Term Impacts	Impacts expected to occur during construction or decommissioning that do not have lingering effects for an extended period after the activity is completed
Long-Term Impacts	Impacts that would persist for an extended period of time

The significance of each impact is determined based on an analysis of the impact, compliance with any recommended mitigation measure, and the level of impact remaining compared to the applicable significance criteria relevant to a particular resource. Impacts are classified as one of the five categories listed below.

Significant and Unavoidable	A substantial or potentially substantial adverse change from the environmental baseline that meets or exceeds significance criteria, where either no feasible mitigation can be implemented, or the impact remains significant after implementation of mitigation measures
Less than Significant with Mitigation	A substantial or potentially substantial adverse change from the environmental baseline that can be avoided or reduced to below applicable significance thresholds
Less than Significant	An adverse impact that does not meet or exceed the significance criteria of a particular environmental issue area and, therefore, does not require mitigation
No Impact	A change associated with the Project that would not result in an impact to the physical environment relative to baseline conditions
Beneficial	An impact that would result in an improvement to the physical environment relative to baseline conditions

ES.5.1. Significant Environmental Effects of the Project that Cannot be Avoided

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. Based on the analysis in EIR Chapters 3 and 5, the EIR has identified several significant and unavoidable impacts of the Proposed Project. These impacts would remain significant and unavoidable even with implementation of environmental measures and mitigation measures.

Detailed explanation is provided in Section 3.2 (Aesthetics), Section 3.6 (Cultural Resources), Section 3.7 (Tribal Cultural Resources), and Chapter 5 (Cumulative Impacts). These impacts are briefly described below.

- **Impact AE-2: Substantially damage scenic resources within a State scenic highway**. This impact would be significant and unavoidable in two locations within a 20-mile segment of designated scenic highway in Inyo County (Segment 1), along US 395 between Fort Independence in the south to approximately Fish Springs Road in the north:
  - **Construction and Material Yards:** The 39-month proposed use of Material Yard 1-7, the introduced visual contrast and industrial character would create a significant and unavoidable impact on views within the designated scenic highway segment of US 395, about 11 miles south of the community of Big Pine.
  - **Operations and Maintenance**: About 13 miles south of the community of Big Pine, the Proposed Project would replace 11 existing structures with 18 taller and wider structures that would further impair public views of the background scenic resources from the scenic highway. This impact would be avoided with the Crater Mountain Alternative; see detail in Section 3.2.
- **Impact CUL-1: Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines §15064.5.** The Project would affect:
  - Hundreds of cultural resources in Inyo County due to its location through the Owens River Valley, a region with a long history of precontact habitation, including areas of residence and burial.
  - Resources that are components of the Rand Historic District in Kern and San Bernardino Counties and a historic transmission line.

- **Impact TCR-1: Cause a substantial adverse change in the significance of a tribal cultural resource that is listed or eligible for listing in the California Register of Historical Resources.** Based on consultation with 18 Native American tribes, the Proposed Project and the three realignment alternatives in Segment 1 pass through a highly sensitive precontact area, defined as the Owens Valley Landscape. The direct and indirect effects on hundreds of precontact resources and values, as expressed in Native American consultation, would be significant and unavoidable.
- **Cumulative Impacts to Cultural and Tribal Cultural Resources**: Significant and unavoidable impacts would result from the Proposed Project's contribution to the region's loss of known archaeological resources and the possibility of encountering significant buried deposits. In addition, effects within Segment 1 would occur within the Owens Valley Landscape, which offers critical insight into California's historic landscape and the traditional lifeways of Native American communities.

The EIR has determined that all other potential direct, indirect, and cumulative environmental impacts of the proposed Project would be less than significant or less than significant with the implementation of mitigation measures. These impacts are described in detail in Chapter 3 of the EIR.

Table ES-2 summarizes the conclusions of the environmental analysis, listing the APMs and mitigation measures contained in Chapter 3 of this EIR. Detailed descriptions of impacts of Proposed Project are provided in Chapter 3, and a discussion of cumulative impacts is presented in Chapter 5.

ES.5.2. Significant Irreversible Environmental Impacts

Pursuant to Section 15126.2 (d) of the CEQA Guidelines, an EIR must address significant irreversible and irretrievable environmental changes that would be caused by a project. These changes include uses of nonrenewable resources during construction and operation, long-term or permanent access to previously inaccessible areas, and irreversible damage that may result from project-related accidents. The Proposed Project would result in the consumption of energy in the form of fuel for vehicles and equipment used during construction, and for the manufacturing of new materials for the project. Maintenance and inspection of the Proposed Project would not change appreciably from SCE's existing activities in project area and thus would not cause a substantial increase in the consumption or use of nonrenewable resources. The Proposed Project would also result in permanent loss of vegetation and habitat, as described in detail in Section 3.5, Biological Resources. Therefore, an irreversible commitment of nonrenewable resources would occur as a result of the Proposed Project. However, assuming that these commitments occur in accordance with the applicable requirements, APMs, and mitigation measures, identified in this EIR, as a matter of public necessity, these commitments are considered to be justifiable.

ES.5.3. Growth-Inducing Impacts

CEQA Guidelines Section 15126.2(e) requires that an EIR discuss the ways in which a proposed project may foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. The construction and operation of SCE's Proposed Project would not result in a permanent increase in the local population or demand for housing or be considered growth inducing from a community growth perspective. Construction of the Proposed Project would not result in a significant in-migration of workers or create long-term jobs; therefore, the construction phase of the project is not considered to be growth inducing.

ES.6. Cumulative Scenario and Impacts

Under CEQA Guidelines, "a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts." 14 Cal Code Regs §15130(a)(1). An EIR must discuss cumulative impacts if the incremental effect of a project, combined with the effects of other projects is "cumulatively considerable." 14 Cal Code Regs

§15130(a). Such incremental effects are to be "viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." 14 Cal Code Regs §15164(b)(1). Together, these projects comprise the cumulative scenario for the cumulative analysis.

Both the severity of impacts and the likelihood of their occurrence are reflected in the discussion. The general study area ("cumulative scenario") for cumulative projects is a three-mile radius around project features. However, each discipline's analysis considers a larger or smaller area appropriate to the potential for impacts to combine. A list of reasonably foreseeable projects that could contribute to the cumulative scenario has been assembled and evaluated and is presented in EIR Chapter 5. Collectively, these projects represent known and anticipated activities that may occur in the project vicinity and that have the potential to contribute to a cumulative impact. All of the projects in the cumulative scenario are located in Inyo, Kern, and San Bernardino Counties, California. Because the Project would be linear with occasional nodal facilities along its length, most of the projects do not interact with the Proposed Project along its entire route. Many projects in the cumulative scenario are limited in their geographic extent. Projects in the cumulative scenario become more or less relevant along the length of the Proposed Project, based on their changing proximity to the Proposed Project and, therefore, to the potential for cumulative interactions.

ES.6.1. Cumulative Impacts of the Proposed Project and Alternatives

ES.6.1.1. Proposed Project

A detailed analysis of the cumulative effects of the proposed Project is presented in EIR Chapter 5 (Cumulative Scenario and Cumulative Impacts Analysis), including a discussion for each of the 20 environmental disciplines evaluated. With the exception of Cultural and Tribal Cultural Resources, each environmental issue area has determined that the proposed Project's contribution to cumulative impacts would not be cumulatively considerable, and therefore cumulative impacts would be less than significant with implementation of mitigation measures, as described in EIR Chapter 5.

The analysis of **Cultural and Tribal Cultural Resources defines that cumulative effects would be significant and unavoidable.** These impacts would result from the Proposed Project's contribution to the region's loss of known archaeological resources and the possibility of encountering significant buried deposits. In addition, effects within Segment 1 would occur within the Owens Valley Landscape, which offers critical insight into California's historic landscape and the traditional lifeways of Native American communities.

ES.6.1.2. Alternatives

All of the retained alternatives would involve similar types of construction activities and would occur in similar environmental settings as the Proposed Project. The same list of cumulative projects that could potentially combine with the Proposed Project to result in a cumulative adverse effect would also apply to each of the retained alternatives. Therefore, the cumulative analysis for the Proposed Project would also apply to each of the alternatives, and the adverse cumulative effects that are described for the Proposed Project would also occur with each of the alternatives.

ES.7. Alternatives

ES.7.1. CEQA Requirements for Alternatives

The alternatives screening and evaluation process in this EIR satisfies State (CEQA) requirements. The CEQA requirements for selection of alternatives are described below. Under CEQA, alternatives to the Proposed

Project are identified and evaluated in accordance with CEQA Guidelines. CEQA Guidelines (Section 15126(a)) state:

> *An EIR shall describe a reasonable range of alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project.*

CEQA Guidelines (Section 15364) define feasibility as:

> *…capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.*

ES.7.2. Alternatives Screening

Alternatives identified by the Applicant, agencies, EIR preparers, and the public are described in Sections ES.7.3 through 7.5. Table ES-1 summarizes all alternatives considered and states whether each was retained for analysis or eliminated from detailed consideration. Section ES.7.3 describes alternatives evaluated in detail in this EIR. Section ES.7.4 describes alternatives considered but eliminated from evaluation. Section ES.3.4 describes the No Project Alternative, which is required to be analyzed pursuant to CEQA Guidelines Section 15126.6(e).

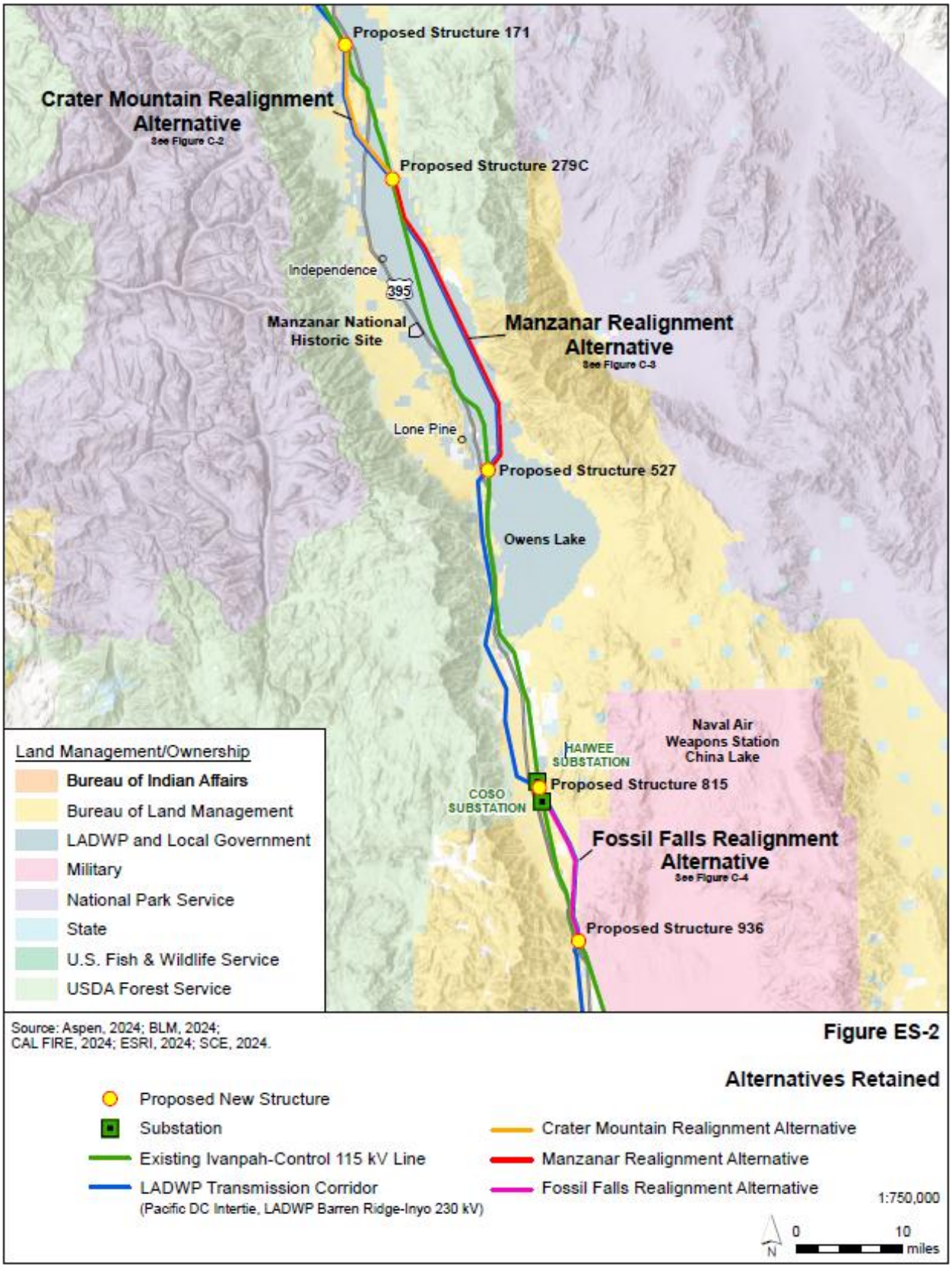
Table ES-1. Summary of Alternatives Considered

Alternative Name	Evaluated or Eliminated?	Rationale
Crater Mountain Realignment Alternative	Evaluated	■ Objectives: Would meet all project objectives ■ Feasibility: Technically feasible; would require land rights from LADWP ■ Impacts: Similar to Proposed Project but less severe effects on aesthetics, cultural resources, and tribal cultural resources
Manzanar Realignment Alternative	Evaluated	■ Objectives: Would meet all project objectives ■ Feasibility: Technically feasible; would require land rights from LADWP and rights to cross BLM lands ■ Impacts: Similar to Proposed Project but less severe effects on aesthetics, cultural resources, and tribal cultural resources
Fossil Falls Realignment Alternative	Evaluated	■ Objectives: Would meet all project objectives ■ Feasibility: Technically feasible; would require land rights from LADWP and rights to cross BLM lands ■ Impacts: Similar to Proposed Project but less severe effects on aesthetics, cultural resources, and tribal cultural resources
No Project Alternative	Evaluated	■ Objectives: Required by CEQA Guidelines Section 15126.6(e); would not meet project objectives ■ Feasibility: Feasible, although SCE would be in violation of the mitigation plan agreed to with WECC ■ Impacts: Modifications of the existing electrical system defined for the Proposed Project, and the associated impacts would not occur, but facility repair and replacement would be implemented on an as-needed basis
Randsburg Underground Alternative	Eliminated	■ Objectives: Would meet all project objectives ■ Feasibility: Technically feasible ■ Impacts: Would not reduce or avoid any significant impacts; impacts to cultural resources and hazards would be more severe than the Proposed Project due to more extensive excavation. No significant impacts occur in the area that would be avoided by the alternative.

Alternative Name	Evaluated or Eliminated?	Rationale
Non-Wires Alternatives	Eliminated	■ CPUC Objectives: Would not meet project objectives ■ Feasibility: Feasible, although SCE would be in violation of the mitigation plan agreed to with WECC ■ Impacts: Modifications of the existing electrical system defined for the Proposed Project, and the associated impacts would not occur
SCE Alternatives, (detailed in Section 4.4.3.)	Eliminated	■ Objectives: Would not meet project objectives ■ Feasibility: May be technically feasible ■ Impacts: Limited or no potential to reduce or avoid environmental impacts

The requirements of CEQA have been applied as the screening methodology. As such, a reasonable range of alternatives has been considered and evaluated with regard to: (1) whether they would meet most of the basic project objectives; (2) whether they would be feasible considering legal, regulatory, and technical constraints; and (3) whether they have the potential to substantially lessen any of the significant effects of the Proposed Project. Other factors considered, in accordance with CEQA Guidelines Section 15126.6(f), were site suitability, economic viability, availability of infrastructure, general plan consistency, other regulatory limitations, jurisdictional boundaries, and proponent's control over alternative sites. Economic factors or costs of the alternatives (beyond economically feasible) were not considered in the screening of alternatives, since CEQA Guidelines require consideration of alternatives capable of eliminating or reducing significant environmental effects even though they may "impede to some degree the attainment of project objectives or would be more costly" (CEQA Guidelines Section 16126.6(b)).

Figure ES-2. Alternatives Retained



ES.7.3. Alternatives Fully Evaluated in the EIR

Three alternatives have been retained for detailed analysis in this EIR:

- The Crater Mountain Realignment (14 miles long)
- The Manzanar Realignment (30 miles long)
- The Fossil Falls Realignment (14 miles long).

Each retained alternative is described below along with the alternative's ability to meet project objectives, meet CEQA criteria for feasibility, and reduce or avoid significant effects. Each retained alternative is evaluated within each environmental issue area of Part D of this EIR. Figure ES-2 presents an overview map of the retained (fully evaluated) alternatives. In each case, a segment of the existing I-C line would be replaced by the realignment alternative segment rather than rebuilding the 115 kV line within the existing SCE ROW. The 115 kV alternative segments would be constructed adjacent to existing LADWP transmission facilities, using existing LADWP access roads.

ES.7.3.1. Crater Mountain Realignment Alternative

Description. The Crater Mountain Realignment Alternative would be approximately 14 miles long, replacing approximately 13.5 miles of the I-C ROW. It would involve relocating the 115 kV I-C line from its current location in SCE ROW to a position adjacent to the LADWP transmission structures. The northern terminus of the alternative is located at proposed Structure 171, approximately 3.3 miles south of Big Pine. The alternative would reconnect with the Proposed Project at proposed Structure 279C.

The southern approximately 9 miles of the alternative are located east of US 395 and are near Tinemaha Reservoir, then cross the Owens River in two locations. This 9-mile segment is within approximately 0.25 miles of the Owens River and in proximity to the headgates of the LA Aqueduct.

Rationale for Full Analysis. The alternative would require new easements, which would result in additional cost, but the cost would not be expected to prohibit implementation of the project. The alternative would require land rights from LADWP, which could result in delays to implementation, but are considered potentially feasible to obtain. The alternative meets all project objectives and feasibility criteria for evaluation.

ES.7.3.2. Manzanar Realignment Alternative

Description. The Manzanar Realignment Alternative would be approximately 30 miles long and would involve relocating the 115 kV I-C line from its current location in SCE ROW to a position immediately adjacent to the LADWP transmission lines. The northern terminus of the alternative is located at proposed Structure 279C (adjoining the southern terminus of the Crater Mountain Realignment), approximately 9 miles north of the community of Independence. The alternative would cross Highway 136 southeast of the community of Lone Pine. The southern terminus of the alternative is proposed Structure 526. The alternative would be allocated as much as roughly 2.5 miles east of the Proposed Project alignment.

The National Park Service at the Manzanar National Historic Site indicated concerns about the increased visibility of the slightly taller poles in the Manzanar National Historic Site (NHS).

Rationale for Full Analysis. The alternative would require new private easements, which would result in additional cost, but the cost would not be expected to prohibit implementation of the project. The alternative would require land rights from LADWP and rights to cross BLM lands, but these rights are feasible to obtain. The alternative meets all project objectives and feasibility criteria for evaluation. The Manzanar Realignment Alternative would increase the distance between the transmission facilities and the Manzanar NHS, as well as from the towns of Independence and Lone Pine, thereby reducing the visibility of the project from those locations and reducing effects on the historic resources at Manzanar.

ES.7.3.3. Fossil Falls Realignment Alternative

Description. The Fossil Falls Realignment alternative would be approximately 14 miles long. The northern terminus of the alternative would be located adjacent to the Coso Substation, near Structure 832. The alternative would be located adjacent to three LADWP transmission lines and would reconnect with the Proposed Project route approximately 6 miles north of Pearsonville at proposed Structure 935. The alternative would be as much as approximately 2 miles east of the Proposed Project alignment.

The primary intent of this segment is to remove the I-C subtransmission structures from the forefront of the scenic views and move them out of areas with highly sensitive cultural sites. The line would be consolidated with the existing LADWP transmission line corridor, located nearly a mile east of the Fossil Falls Campground.

Rationale for Full Analysis. The alternative would require new private easements, land rights from LADWP, and rights to cross BLM lands, but these are considered feasible to obtain and are similar to the rights required for the Proposed Project. This realignment segment would avoid the sensitive cultural resources in the Little Lake and Fossil Falls areas and would remove the existing 115 kV ROW from the foreground views from US 395 and Fossil Falls along the entire 14-mile length of this alternative segment.

ES.7.4. Alternatives Eliminated From Further Consideration

Two types of alternatives were considered but eliminated from further consideration.

Randsburg Underground Alternative. The Randsburg Underground Alternative was suggested in public comment to the BLM during its scoping period for the EIS. The intent of this alternative would be to reduce the aesthetic impact of the Proposed Project through the historic mining community. In order for this alternatives to be consistent with CEQA requirements, there must be a significant impact created by the Proposed Project that has the potential to be reduced by the alternative design (CEQA Guidelines Section 15126.6(b)).

This alternative is not evaluated in this EIR because the analysis does not identify a significant aesthetic impact in the Randsburg area. As a result, the alternative would not avoid any significant effects associated with the Proposed Project. In addition, the impacts associated with removing the existing structures and constructing the underground line may be more severe than those of constructing the project as proposed. These impacts include exposure of the community and workers to hazardous materials associated with historic mining activity, potential destruction of historic cultural resources associated with the Randsburg historic district, road closures, and installation of large overhead-underground transition structures.

SCE Alternatives. Alternatives developed by SCE and presented in its PEA included seven types of corrective actions for the individual line segments that comprise the I-C Project. Each of these seven corrective actions could form the basis for potential alternatives to some project components. These alternatives would either create more severe impacts than the Proposed Project or would not meet project objectives. Therefore, all SCE alternatives considered were eliminated from detailed evaluation.

ES.7.5. No Project Alternative

Under the No Project Alternative, the modifications of the existing electrical system included in the proposed I-C Project would not occur and the existing lines would continue to operate in their current condition. SCE has not identified any other actions to shed light on “what would be reasonably expected to occur” in the absence of the Proposed Project.

Consideration of the No Project Alternative is required by Section 15126.6(e) of the CEQA Guidelines. The analysis of the No Project Alternative must discuss the existing conditions at the time the Notice of

Preparation was published, as well as: "what would be reasonably 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" [CEQA Guidelines Section 15126.6 (e)(2)]. CEQA also requires that: "If disapproval of the project under consideration would result in predictable actions by others, such as the proposal of some other project, this 'no project' consequence should be discussed" [CEQA Guidelines Section 15126.6 (e)(3)(B)].

One 'no project' consequence is the likelihood that SCE may take actions that are exempt from the CPUC's requirement to file an application for a PTC, as exemptions are identified in Section III.B.2 of CPUC General Order (GO) 131-E. Exempt actions may be regularly performed by SCE as part routine maintenance on the I-C lines to maintain reliability, but typically these activities do not remediate clearance discrepancies. Examples of these remediation techniques include installing new structures between existing structures to reduce sag, derating conductor ampacity, replacing or raising selected existing structures, or replacing existing conductors.

ES.8. Summary Comparison of the Proposed Project and Alternatives

The methodology used to compare alternatives in this EIR consists of 3 steps:

- **Step 1: Identification of Alternatives.** An alternatives screening process was used to identify a number of potential alternatives to the Proposed Project and to identify those to be carried forward for analysis in the EIR. A No Project Alternative was also identified.
- **Step 2: Determination of Environmental Impacts.** The environmental impacts of the Proposed Project are identified in EIR Chapter 3, and the impacts of the alternatives are identified in EIR Chapter 4.
- **Step 3: Comparison of Proposed Project with Alternatives.** Because each of the three alternatives considered in this EIR would replace only a segment of the project as proposed, each of the realignment alternatives was compared with the Proposed Project segment that it would replace to determine the environmentally superior alternative segment for each part of Segment 1 and a full route was assembled.
- **Step 4: Comparison of the environmentally superior route alternative with the No Project Alternative.**

Determining an environmentally superior alternative requires balancing many environmental factors. In order to identify the environmentally superior alternative, the most important impacts in each issue area were identified and compared. Although this EIR identifies an environmentally superior alternative, it is possible that the ultimate decision-makers could balance the importance of each impact area differently and reach a different conclusion.

ES.8.1. Environmentally Superior Alternative

The CPUC has identified the Environmentally Superior Alternative, as required by CEQA Guidelines Sections 15126.6(d) and 15126.6(e)(2). The Environmentally Superior Alternative would be the Proposed Project in Segments 2, 3N, and 3S. In Segment 1, the Environmentally Superior Alternative would be the Proposed Project, except where it would be replaced by the Crater Mountain, Manzanar, and Fossil Falls Realignment Alternatives. The Environmentally Superior Alternative is illustrated in Figure ES-3.

ES.8.2. Comparison of No Project Alternative with Proposed Project

Under the No Project Alternative, the specific modifications of the existing electrical system included in the proposed I-C Project would not occur and the existing lines would continue to operate in their current condition. SCE's PEA did not identify any other actions to shed light on "what would be reasonably expected to occur" in the absence of the Proposed Project.

The range of predictable 'no project' consequences could include targeted repairs to address problems on a case-by-case basis or in response to emergencies arising from the continuing discrepancies of the existing facilities. If the Proposed Project is not approved by the CPUC, it is reasonable to assume that SCE could be required to implement targeted upgrades in response to emergency situations. These upgrades would likely be narrower in scope than those anticipated with the Proposed Project; however, mitigation measures identified for the Proposed Project, or the alternatives considered in this EIR, would not be adopted under the No Project Alternative.

ES.8.3. Conclusion Regarding Environmentally Superior Alternative

The three retained alternatives are described in Section ES.3.2. The CPUC has identified the Environmentally Superior Alternative, as required by CEQA Guidelines Section 15126.6(d) and (e)(2). The Environmentally Superior Alternative would be the Proposed Project, with replacement of the three parts of Segment 1 that would be replaced by the Crater Mountain, Manzanar, and Fossil Falls Realignment Alternatives. The Environmentally Superior Alternative is illustrated in Figure ES-3.

ES.9. Impact Summary Table: CEQA Impact Significance

As required by CEQA Guidelines Section 15123, this executive summary identifies the environmental impacts associated with the Proposed Project that are significant and lists the mitigation measures that have been identified to reduce or avoid each significant impact. For CEQA analysis, levels of significance in this EIR are defined by classification in Table ES-2 as follows:

- SU is used to identify significant and unavoidable impacts
- LSM is used to identify significant impacts that can be mitigated to a less than significant level
- LTS is used to identify adverse but less than significant impacts
- Beneficial is used to identify beneficial impacts.

Table ES-2 summarizes all impacts and mitigation measures for the Proposed Project using the CEQA conclusions defined above. The table presents only the titles of each mitigation measure; the full text is presented in Chapter 3 of this EIR (Environmental Analysis) and in Chapter 7 (Mitigation Monitoring and Reporting Program).

Figure ES-3. Environmentally Superior Alternative

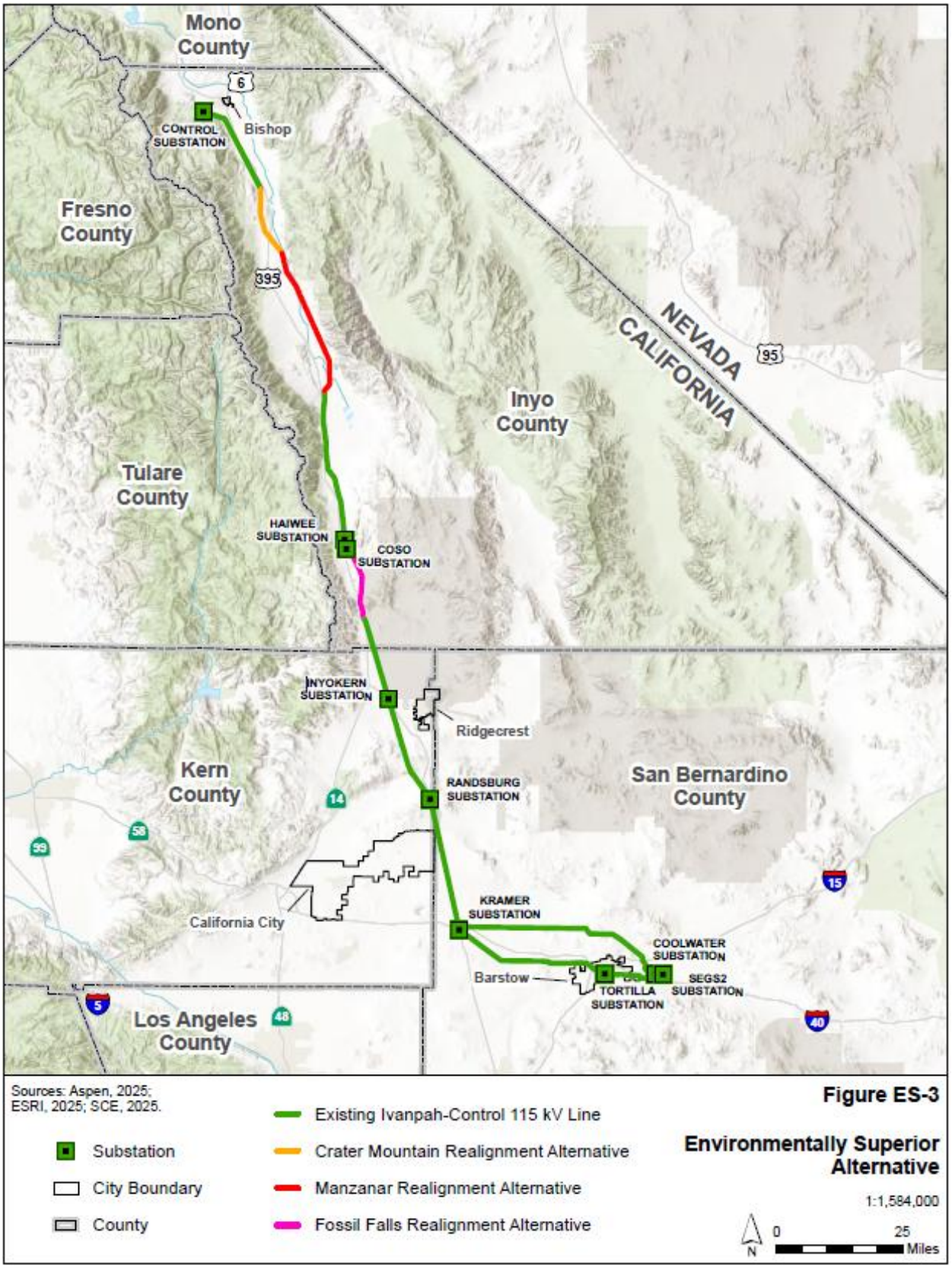


Table ES-2. Summary of Impacts and Mitigation Measures for the Proposed Project

Environmental Impact	Environmental Measures Implemented as Part of the Proposed Project		Significance After Mitigation
	Applicant Proposed Measures (APM)	CEQA Mitigation Measures (MM; MM title only)	
Aesthetics			
Impact AE-2: Substantially damage scenic resources within a state scenic highway	None	None required	Segment 1 Material Yard 1-7: SU Segment 1 Operations and Maintenance: SU Construction: LTS
Impact AE-3: In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings	None	**MM AE-3a:** Apply Corten finish to structure numbers 915 through 954	Segment 1 Operations and Maintenance: LSM All other areas: LTS
Impact AE-5: Create a new source of substantial light or glare that would adversely affect day or nighttime views	**APM AES-8:** Night lighting during construction of facilities	None required	LTS
Agriculture & Forestry Resources			
Impact AF-1: Convert Prime Farmland, Unique Farmland, or Farmland of State-wide Importance to nonagricultural use	None	None required	LTS
Impact AF-2: Conflict with existing zoning for agricultural use or a Williamson Act contract	None	None required	LTS
Impact AF-3: Conflict with existing zoning for, or cause rezoning of, forest land, timberland, or a Timberland Production Zone	None	None required	No Impact
Impact AF-4: Result in the loss of forest land or conversion of forest land to non-forest use	None	None required	LTS
Impact AF-5: Involve other changes in the existing environment that could result in conversion of Farmland to nonagricultural use. or forest land to non-forest use	None	None required	No Impact
Impact AF-6: Substantially interfere with active agricultural operations, or convert land used for active agricultural operations to an incompatible use	None	**MM AF-6a:** Minimize construction impacts on active agricultural operations **MM AF-6b:** Avoid operational conflicts with existing agricultural irrigation	LSM

Environmental Impact	Environmental Measures Implemented as Part of the Proposed Project		Significance After Mitigation
	Applicant Proposed Measures (APM)	CEQA Mitigation Measures (MM; MM title only)	
Air Quality			
Impact AQ-1: Conflict with or obstruct implementation of an applicable air quality plan	None	None required	LTS
Impact AQ-2: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard	None applicable	**MM AQ-2a:** Control off-road equipment emissions with Tier 4 engines (Supersedes APM AQ-1) **MM AQ-2b:** Control fugitive dust emissions	LSM
Impact AQ-3: Expose sensitive receptors to substantial pollutant concentrations	None applicable	**MM AQ-2a:** Control off-road equipment emissions with Tier 4 engines (Supersedes APM AQ-1) **MM AQ-2b:** Control fugitive dust emissions	LSM
Impact AQ-4: Generate other emissions (such as those leading to odors) adversely affecting a substantial number of people	None	None required	LTS
Biological Resources			
Impact BIO-1: 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 Wildlife or U.S. Fish and Wildlife Service	**APM BIO-RES-1:** Develop and Implement Habitat Restoration Plan (HRP) **APM BIO-RES-2:** Develop Invasive Plant Management Plan (IWMP) **APM HAZ-1:** Prepare a Hazardous Materials and Waste Management Plan **APM BIO-BOT-1:** Special-Status Herbaceous Plant **APM BIO-BOT-2:** Special-Status Perennial Plants and Other Species **APM BIO-CNDDB-1:** Data Entry **APM BIO-AVI-2:** Burrowing Owl **APM BIO-HERP-9:** Northern Leopard Frog **APM BIO-MAM-1:** Mohave Ground Squirrel **APM BIO-MAM-5:** Bighorn Sheep – Nelson's and Desert Bighorn Sheep **APM WET-1**: Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats **APM AES-8**: Night Lighting during Construction of Facilities	**MM BIO-1a:** Worker Environmental Awareness Program (supersedes APM WEAP) **MM BIO-1b**: Biological Monitoring (supersedes APM BIO-GEN-1) **MM BIO-1c:** Minimization of Vegetation and Habitat Impacts **MM BIO-1d:** Compensation for Habitat Loss **MM BIO-1e:** Pre-construction Biological Resources Surveys **MM BIO-1f:** Wildlife impact avoidance and minimization **MM BIO-1g:** Crotch bumble bee **MM BIO-1h:** Special-status reptiles **MM BIO-1i:** Desert Tortoise (supersedes APM HERP-1) **MM BIO-1j**: Raven Monitoring, Management, and Control Plan **MM BIO-1k**: Mohave ground squirrel avoidance and minimization **MM BIO-1l:** American Badger and Desert Kit Fox **MM BIO-1m:** Special-status Bats (supersedes APM BIO-MAM-6) **MM BIO-1n:** Golden Eagle (supersedes APM BIO-AVI-4)	LSM

Environmental Impact	Environmental Measures Implemented as Part of the Proposed Project		Significance After Mitigation
	Applicant Proposed Measures (APM)	CEQA Mitigation Measures (MM; MM title only)	
	APM NOI-1: Implement Best Management Practices for Construction Noise		
Impact BIO-2: 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 Wildlife or U.S. Fish and Wildlife Service	**APM BIO-RES-1:** Develop and Implement Habitat Restoration Plan (HRP) **APM BIO-RES-2:** Develop Invasive Plant Management Plan (IWMP) **APM HAZ-1:** Prepare a Hazardous Materials and Waste Management Plan	**MM BIO-1a:** Worker Environmental Awareness Program (supersedes APM WEAP) **MM BIO-1b:** Biological Monitoring (supersedes APM BIO-GEN-1) **MM BIO-1c:** Minimization of Vegetation and Habitat Impacts **MM BIO-1d:** Compensation for Habitat Loss **MM AQ-2b:** Control Fugitive Dust Emissions **MM HW-1a:** Drainage Erosion and Sedimentation Control Plan (DESCP)	LSM
Impact BIO-3: Substantially affect jurisdictional wetlands, waters of the U.S., or waters of the state	**APM BIO-RES-1**: Develop and Implement Habitat Restoration Plan (HRP) **APM BIO-RES-2:** Develop Invasive Plant Management Plan (IWMP) **APM HAZ-1:** Prepare a Hazardous Materials and Waste Management Plan **APM BIO-WET-1:** Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats	**MM BIO-1a:** Worker Environmental Awareness Program (supersedes APM WEAP) **MM BIO-1b:** Biological Monitoring (supersedes APM BIO-GEN-1) **MM BIO-1c:** (Minimization of Vegetation and Habitat Impacts) **MM BIO-1d:** Compensation for Habitat Loss **MM AQ-2b:** Control Fugitive Dust Emissions **MM HW-1a:** Drainage Erosion and Sedimentation Control Plan (DESCP)	LSM
Impact BIO-4: 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	**APM BIO-RES-1:** Habitat Restoration and Revegetation Plan **APM BIO-RES-2:** Develop Integrated Weed Management Plan (IWMP) **APM HAZ-1:** Prepare a Hazardous Materials Management Plan **APM WET-1:** Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats **APM BIO-AVI-2**: Burrowing Owl **APM BIO-AVI-3**: Yellow-billed Cuckoo **APM BIO-HERP-9:** Northern Leopard Frog **APM BIO-MAM-1:** Mohave Ground Squirrel **APM BIO-MAM-5:** Bighorn Sheep – Nelson's and Desert Bighorn Sheep **APM AES-8**: Night Lighting during Construction of Facilities	**MM BIO-1a:** Worker's Environmental Awareness Program (supersedes APM WEAP) **MM BIO-1b:** Biological Monitoring (supersedes APM BIO-GEN-1) **MM BIO-1c:** Minimization of Vegetation and Habitat Impacts **MM BIO-1d:** Compensation for Habitat Loss **MM BIO-1e:** Pre-construction Biological Resources Surveys **MM BIO-1f:** Wildlife impact avoidance and minimization **MM BIO-1g:** Crotch bumble bee **MM BIO-1h:** Special-status reptiles **MM BIO-1i:** Desert Tortoise (supersedes APM HERP-1) **MM BIO-1j:** Raven Monitoring, Management, and Control Plan **MM BIO-1k**: Mohave ground squirrel avoidance and minimization **MM BIO-1l:** American Badger and Desert Kit Fox **MM BIO-1m:** Special-status Bats (supersedes APM BIO-MAM-6)	LSM

Environmental Impact	Environmental Measures Implemented as Part of the Proposed Project		Significance After Mitigation
	Applicant Proposed Measures (APM)	CEQA Mitigation Measures (MM; MM title only)	
	APM NOI-1: Implement Best Management Practices for Construction Noise	**MM BIO-1n:** Golden Eagle (supersedes APM BIO-AVI-4) **MM AQ-2b:** Control Fugitive Dust Emissions **MM HW-1a:** Drainage Erosion and Sedimentation Control Plan (DESCP)	
Impact BIO-5: Cause take of protected nesting birds, including nestlings or eggs, through direct impacts to the nest or substantial nearby disturbance which could cause nest abandonment	**APM BIO-RES-1:** Habitat Restoration and Revegetation Plan **APM BIO-RES-2:** Develop Integrated Weed Management Plan (IWMP) **APM HAZ-1:** Prepare a Hazardous Materials Management Plan **APM BIO-AVI-1:** Nesting Bird Management Plan **APM BIO-AVI-2:** Burrowing Owl **APM BIO-AVI-3:** Yellow-billed Cuckoo **APM AES-8:** Night Lighting during Construction of Facilities **APM NOI-1:** Implement Best Management Practices for Construction Noise	**MM BIO-1a:** Worker's Environmental Awareness Program (supersedes APM WEAP) **MM BIO-1b:** Biological Monitoring (supersedes APM BIO-GEN-1) **MM BIO-1c:** Minimization of Vegetation and Habitat Impacts **MM BIO-1d:** Compensation for Habitat Loss **MM BIO-1e:** Pre-construction Biological Resources Surveys **MM BIO-1f:** Wildlife impact avoidance and minimization **MM BIO-1n:** Golden Eagle (supersedes APM BIO-AVI-4) **MM AQ-2b:** Control Fugitive Dust Emissions **MM HW-1a:** Drainage Erosion and Sedimentation Control Plan (DESCP)	LSM
Impact BIO-6: Create a substantial collision and electrocution risk for birds or bats	None	**MM BIO-6a:** Bird and Bat Collision	LSM
Impact BIO-7: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance	None	None required	LTS
Impact BIO-8: Conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan	None	None required	LTS
Cultural Resources			
Impact CUL-1: Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines §15064.5	None applicable	**MM CUL-1a:** Retain a Cultural Resources Specialist **MM CUL-1b:** Develop Data Recovery Plans for Known Archaeological Resources **MM CUL-1c:** Implement Cultural Resources Environmental Awareness Training **MM CUL-1d:** Prepare and Implement a Cultural Resources Management Plan (Supersedes APM CUL-1) **MM CUL-1e:** Cultural Resources Monitoring **MM CUL-1f:** Tribal Monitoring **MM CUL-1g:** Remove Structures by Helicopter in Culturally Sensitive Areas	Construction (Precontact and Historic Era): Direct Impacts, SU Indirect Impacts, LTS Construction (Built Environment):

Environmental Impact	Environmental Measures Implemented as Part of the Proposed Project		Significance After Mitigation
	Applicant Proposed Measures (APM)	CEQA Mitigation Measures (MM; MM title only)	
		MM CUL-1h: Leave All Foundations in Place for Structures Removed in Culturally Sensitive Areas **MM CUL-1i**: Avoid Disturbance Within Environmentally Sensitive Areas **MM CUL-1j**: Mitigate Loss from Dismantling of Historic-Era "Tower Line" Transmission Lines (P-36-010316). **MM CUL-1k**: Avoid and/or Mitigate Loss from Direct Impacts to Historic-Era Archaeological Resources Contributing to the Rand Mining District (P-15-007069) **MM CUL-1l:** Avoid Damage to Manzanar Airfield	Direct Impacts, LSM; Indirect Impacts, LTS Operations and Maintenance: LSM
Impact CUL-2: Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to CEQA Guidelines §15064.5	None applicable	**MM CUL-1a:** Retain a Cultural Resources Specialist **MM CUL-1b:** Develop Data Recovery Plans for Known Archaeological Resources **MM CUL-1c:** Implement Cultural Resources Environmental Awareness Training **MM CUL-1d:** Prepare and implement a Cultural Resources Management Plan (Supersedes APM CUL-1) **MM CUL-1e:** Cultural Resources Monitoring **MM CUL-1f:** Tribal Monitoring	LSM
Impact CUL-3: Disturb human remains, including those interred outside of formal cemeteries	**APM CUL-4:** Properly Treat Human Remains	**MM CUL-1a:** Retain a Cultural Resources Specialist **MM CUL-1c:** Implement Cultural Resources Environmental Awareness Training **MM CUL-1d:** Prepare and implement a Cultural Resources Management Plan (Supersedes APM CUL-1) **MM CUL-1e:** Cultural Resources Monitoring **MM CUL-1f:** Tribal Monitoring **MM CUL-1g:** Remove Structures by Helicopter in Culturally Sensitive Areas **MM CUL-1h**: Leave All Foundations in Place for Structures Removed in Culturally Sensitive Areas	LSM
Tribal Cultural Resources			
Impact TCR-1: Cause a substantial adverse change in the significance of a Tribal Cultural Resource 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)	**APM TCR-1:** Tribal Monitoring **APM TCR-2:** Tribal Engagement Plan **APM CUL-4:** Properly Treat Human Remains	**MM TCR-1a**: Conceal Exposed Tribal Cultural Resources After Construction **MM TCR-1b**: Provide Funding to Tribes for Research, Education, and Interpretation **MM CUL-1a:** Retain a Cultural Resources Specialist **MM CUL-1c:** Implement Cultural Resources Environmental Awareness Training **MM CUL-1d:** Prepare and implement a Cultural Resources Management Plan (Supersedes APM CUL-1) **MM CUL-1e:** Cultural Resources Monitoring	SU

Environmental Impact	Environmental Measures Implemented as Part of the Proposed Project		Significance After Mitigation
	Applicant Proposed Measures (APM)	CEQA Mitigation Measures (MM; MM title only)	
		MM CUL-1f: Tribal Monitoring **MM CUL-1g:** Remove Structures by Helicopter in Culturally Sensitive Areas **MM CUL-1h**: Leave All Foundations in Place for Structures Removed in Culturally Sensitive Areas **MM CUL-1i**: Avoid Disturbance Within Environmentally Sensitive Areas	
Energy			
Impact EN-1: Result in wasteful, inefficient, or unnecessary consumption of energy	**APM NOI-1**: Implement Best Management Practices for Construction Noise	**MM AQ-2a**: Control off-road equipment emissions with Tier 4 engines	LTS
Impact EN-2: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency	None	None required	LTS
Geology, Soils, and Paleontology			
Impact GSP-1: Expose people or structures to adverse effects, including the risk of loss, injury, or death, due to rupture of a known earthquake fault, seismic ground shaking, or liquefaction	None	None required	LTS
Impact GSP-2: Result in substantial soil erosion or the loss of topsoil	**APM BIO-HERP-9**: Northern Leopard Frog **APM BIO-MAM-1:** Mohave Ground Squirrel	**MM HW-1a:** Implement a Drainage, Erosion, and Sedimentation Control Plan **MM BIO-1i:** Desert Tortoise (supersedes APM HERP-1)	LSM
Impact GSP-3: Be located on a geologic unit or soil that is unstable, or would become unstable as a result of the Project, and result in on- or off-site landslide, subsidence, liquefaction or collapse	None	None required	LTS
Impact GSP-4: Be located on expansive soil creating substantial risks to life or property	None	None	LTS
Impact GSP-5: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature	**APM PAL-1:** Develop Paleontological Resource Mitigation and Monitoring Plan *(Protocol defined superseded by MM GSP-5a)* **APM PAL-2:** Monitor Construction for Paleontological Resources **APM PAL-3**: Final Reporting and Curation **APM PAL-4:** Train Construction Personnel	**MM GSP-5a:** Unanticipated Discovery Paleontological Resource Protocol Update (Supersedes the protocol defined in APM PAL-1)	LSM

Environmental Impact	Environmental Measures Implemented as Part of the Proposed Project		Significance After Mitigation
	Applicant Proposed Measures (APM)	CEQA Mitigation Measures (MM; MM title only)	
Greenhouse Gas Emissions			
Impact GHG-1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.	None	None required	LTS
Impact GHG-2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing greenhouse gas emissions	None	None required	LTS
Hazards and Hazardous Materials			
Impact HH-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials	**APM HAZ-1:** Prepare a Hazardous Materials Management Plan	None required	LTS
Impact HH-2: Create a significant risk to human health or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials	**APM HAZ-1:** Prepare a Hazardous Materials Management Plan	None required	LTS
Impact HH-3: Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.	**APM HAZ-2:** Prepare a Soil Management Plan	None required	LTS
Impact HH-4: Create a hazard to the public or the environment through mobilization of contaminants or hazards, including mine waste, pesticides, herbicides, and Valley Fever spores.	None	**MM HH-4a**: Identify Soil Contamination **MM AQ-2b:** Control Fugitive Dust Emissions	LSM
Impact HH-5: Result in a safety hazard or excessive noise where the Project is located within an airport land use plan area or within 2 miles of a public use airport	None	None required	LTS
Impact HH-6: T: Create a hazard to the public or workers due to discovery of military munitions and unexploded ordnance	None	**MM HH-6a:** Unexploded ordnance (UXO) Identification, Training, and Reporting Plan	LSM
Impact HH-7: Expose workers or the public to excessive shock hazards	None	**MM HH-7a:** Implement grounding measures to avoid shocks	LSM
Hydrology and Water Quality			
Impact HW-1: Violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality	**APM HAZ-1:** Prepare a Hazardous Materials Management Plan **APM HAZ 2:** Prepare a Soil Management Plan	**MM HW-1a**: Drainage, Erosion, and Sedimentation Control Plan (DESCP)	LSM

Environmental Impact	Environmental Measures Implemented as Part of the Proposed Project		Significance After Mitigation
	Applicant Proposed Measures (APM)	CEQA Mitigation Measures (MM; MM title only)	
	APM BIO-RES-1: Habitat Restoration and Revegetation Plan **APM WET-1:** Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats		
Impact HW-2: Substantially decrease groundwater supplies or interfere with groundwater recharge such that the project may impede sustainable groundwater management of the basin	None	None required	LTS
Impact HW-3: 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, increase surface runoff, exceed stormwater drainage capacity, or redirect flood flows	**APM WET-1:** Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats **APM BIO-RES-1:** Habitat Restoration and Revegetation Plan **APM HAZ-1:** Prepare a Hazardous Materials Management Plan	**MM HW-1a**: Drainage, Erosion, and Sedimentation Control Plan (DESCP)	LSM
Impact HW-4: Risk release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones	**APM WET-1:** Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats **APM HAZ-1:** Prepare a Hazardous Materials Management Plan	None required	LTS
Impact HW-5: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan	None	None required	LTS
Land Use and Planning			
Impact LU-1: 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	None	None required	No Impact
Mineral Resources			
Impact MR-1: 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	None	None required	LTS
Impact MR-2: 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	None	**MM MR-2a:** Coordinate with mining facility management	LSM

Environmental Impact	Environmental Measures Implemented as Part of the Proposed Project		Significance After Mitigation
	Applicant Proposed Measures (APM)	CEQA Mitigation Measures (MM; MM title only)	
Noise			
Impact N-1: Expose persons to or generate a substantial temporary or permanent increase in noise levels in excess of established standards	**APM NOI-1:** Implement Best Management Practices for Construction Noise	**MM N-1a:** Implement Helicopter Noise Control Strategy	Construction and Operation and Maintenance: LTS Helicopter Use: LSM
Impact N-2: Generate or expose persons to excessive groundborne vibration	None	None required	LTS
Impact N-3: Be located within the vicinity of a private airstrip or an airport land use plan	None	None required	Segment 1 and 2 Construction and Operation and Maintenance: No Impact Material Yard ICKI SA 1-3 (Ridgecrest): LTS
Population and Housing			
Impact PH-1: Induce substantial population growth in an area, either directly or indirectly	None	None required	No Impact
Impact PH-2: Displace a substantial number of existing people or housing	None	None required	No Impact
Public Services			
Impact PS-1: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives	**APM TRA-1:** Traffic Control Measures	**MM T-1b:** Prepare traffic control plans	LSM
Recreation			
Impact REC-1: Disrupt recreational activities, temporarily blocking or reducing access and visitation to recreational areas	**APM NOI-1:** Implement Best Management Practices for Construction Noise	**MM REC-1a** (Fossil Falls Campground and Baker Creek Campground only)**:** Coordinate construction schedule and activities and identify alternative recreation areas *(Supersedes APM REC-1)* **MM AQ-2b:** Control Fugitive Dust Emissions **MM N-1a:** Helicopter Noise Control Strategy	LSM

Environmental Impact	Environmental Measures Implemented as Part of the Proposed Project		Significance After Mitigation
	Applicant Proposed Measures (APM)	CEQA Mitigation Measures (MM; MM title only)	
Impact REC-2: Damage recreational trails or facilities	None	None required	LTS
Transportation			
Impact T-1: Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities	**APM TRA-1:** Traffic Control Measures **APM TRA-3:** Pedestrian Routing	**MM T-1a:** Prepare Construction Transportation Plan **MM T-1b:** Prepare Traffic Control Plan(s) **MM T-1c:** Obtain permits or approvals for crossing or working in railroad rights-of-way	LSM
Impact T-2: Conflict or be inconsistent with State CEQA Guidelines Section 15064.3(b) regarding vehicle miles traveled	None	None required	LTS
Impact T-3: Result in inadequate emergency access	**APM TRA-1:** Traffic Control Measures	**MM T-1b:** Prepare Traffic Control Plan(s)	LSM
Impact T-4: Require the temporary closure of lanes or roadways resulting in a substantial increase in roadway hazards	**APM TRA-1:** Traffic Control Measures	**MM T-1b:** Prepare Traffic Control Plan(s)	LSM
Impact T-5: Increase roadway hazards through damage to road surfaces	None	**MM T-5a**: Repair roadways damaged by construction activities	LSM
Impact T-6: Conflict with FAA recommendations to reduce hazards to navigable airspace, an airport land use plan, or restrictions to airspace related to active military flights	None	None required	LTS
Impact T-7: Create a hazard to the public or the environment through the transport of heavy loads with helicopters	**APM TRA-2:** Helicopter Flight Plan	**MM T-7a:** Prepare and implement a final helicopter use plan	LSM
Utilities and Service Systems			
Impact US-1: Require new water supply entitlements or place demands on local water providers	None	None required	LTS
Impact US-2: Generate solid waste in excess of state or local regulations or in excess of the capacity of local infrastructure	None	None required	LTS
Impact US-3: Disrupt existing pipelines and utility systems or cause a collocation accident	None	None required	LTS
Wildfire			
Impact WF-1: Substantially impair emergency response or emergency evacuation	**APM TRA-1:** Traffic Control Measures	None required	LTS

Environmental Impact	Environmental Measures Implemented as Part of the Proposed Project		Significance After Mitigation
	Applicant Proposed Measures (APM)	CEQA Mitigation Measures (MM; MM title only)	
Impact WF-2: Exacerbate wildfire risks, due to slope, prevailing winds, and other factors that would thereby expose people to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire	**APM HAZ-3:** Prepare and Implement a Fire Prevention and Emergency Response Plan	None required	LTS
Impact WF-3: Require the installation or maintenance of 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	**APM HAZ-3:** Prepare and Implement a Fire Prevention and Emergency Response Plan	None required	LTS
Impact WF-4: 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	**APM HAZ-3:** Prepare and Implement a Fire Prevention and Emergency Response Plan	None required	LTS

1. INTRODUCTION

On July 17, 2019, Southern California Edison (SCE or the Applicant) submitted Application A.19-07-015 to the California Public Utilities Commission (CPUC), seeking a Permit to Construct (PTC) for the Ivanpah-Control Project (Proposed Project, Project, or I-C Project). An amended application was submitted on April 13, 2020, and a second amended application was submitted on October 31, 2024.

The CPUC is lead agency under the California Environmental Quality Act (CEQA) and has prepared this Environmental Impact Report (EIR) to inform the public and to meet the needs of local, State, and federal permitting agencies. The EIR evaluates the impacts of the Proposed Project and project alternatives. Because the Project also crosses federal land managed by the Bureau of Land Management (BLM), the BLM is preparing a separate Environmental Impact Statement under the National Environmental Policy Act (NEPA).

This EIR evaluates and presents the environmental impacts that are expected to result from construction and operation of SCE's proposed I-C Project, and presents recommended mitigation measures that, if adopted, would avoid or minimize many of the significant environmental impacts identified. In accordance with CEQA requirements, this EIR also identifies alternatives to the Proposed Project (including the No Project Alternative) that could avoid or minimize significant environmental impacts associated with the project as proposed by SCE, and evaluates the environmental impacts associated with these alternatives. Based on this environmental impact assessment, as well as the relative sensitivities of impacts in the study region, this EIR identifies the Environmentally Superior alternative as required by CEQA.

This EIR does not make a recommendation regarding the approval or denial of the Proposed Project or any alternative; it is purely informational and will be used by the CPUC in considering whether to approve the Proposed Project or an alternative analyzed in this EIR.

The CPUC's CEQA process has incorporated significant outreach to and consultation with Native American tribes in the project area, as further described in Section 1.4. In addition, the contents of this Draft EIR reflect input by government officials, agencies, nongovernmental organizations, and members of the public during the EIR scoping period following the CPUC's publication of the Notice of Preparation (NOP) of an EIR. The NOP was issued on September 1, 2020, and the scoping comment period ended on September 30, 2020. To obtain input on the project, its impacts, and potential alternatives, several public involvement activities were completed: distribution of the NOP, mailing of a postcard with scoping meeting information, two public scoping meetings, meetings with a number of affected local jurisdictions, and publication of a Scoping Report.

The remainder of this chapter provides an overview of the Proposed Project and explains the purpose and objectives of the Proposed Project. It describes agency use of the EIR, summarizes the Native America consultation process, and summarizes scoping comments. The public review period for the Draft EIR is explained, and a Reader's Guide to this EIR is presented, explaining how the EIR is organized.

1.1. Project Overview

The Proposed Project would upgrade components of SCE's existing Ivanpah-Control subtransmission facilities[1] in several ways, described in detail in Chapter 2 of this EIR (Project Description). The purpose of

[1] SCE identifies electrical lines operated at voltages between 50 kV and 200 kV as "subtransmission lines" or "subtransmission circuits." Electrical lines operated at voltages greater than 200 kV are typically identified as "transmission lines." In this EIR, the project components are all between 50 kV and 200 kV, and the terms "subtransmission" or "transmission" lines used herein are used interchangeably to refer to these project components.

the project is to remediate physical clearance discrepancies[2] identified on some of SCE's existing 115 kilovolt (kV) subtransmission lines. The upgrades that comprise the Proposed Project would occur along approximately 262 miles of the transmission lines, which are made up of multiple different electric circuits as illustrated schematically in Figure 1-1.

The Proposed Project would implement a Transmission Line Rating Remediation (TLRR) program to correct discrepancies in minimum horizonal and vertical conductor clearances on its 115 kV transmission lines and structures between 8 substations. The project components are located along 115 linear miles of subtransmission facilities in Inyo County, 37 linear miles in Kern County, and 111 linear miles in San Bernardino County. The major activities included in the Proposed Project are the following:

- In **Segments 1 and 2**, SCE would remove all of the existing subtransmission towers and poles and conductor and replace them with tubular steel poles (TSPs), lightweight steel (LWS) poles, LWS pole H-frames, and multi-pole TSP and LWS pole structures and new conductor. SCE would also install overhead groundwire (OHGW) or optical groundwire (OPGW) for system protection.[3] All Dielectric Self-Supporting (ADSS) telecommunications cable would be installed on new poles to connect to a repeater station in Independence.
- In **Segments 3N and 3S**, SCE would remove certain existing subtransmission towers and poles and replace them with steel multipole structures constructed from TSPs; wood multi-pole structures; and steel and wood H-frames constructed from LWS and wood poles.[4] SCE would remove existing conductor and install new conductors on replacement and existing structures. Two interset structures[5] would be installed in Segment 3N. There would be no telecommunications facilities constructed in Segments 3N or 3S.

Removal of Segment 4. In its 2020 Amended PTC Application, SCE had proposed including a Segment 4 of the I-C Project, which was to include 96 miles of upgrades along an existing 115 kV subtransmission line between Coolwater Substation (east of Barstow) and the Ivanpah Substation (just west of the California-Nevada state line and north of Interstate 15). In Segment 4, SCE intended to replace only selected existing subtransmission structures with steel or wood H-frame structures, and no reconductoring was proposed. SCE planned to derate[6] the existing subtransmission circuit for the Proposed Project. However, in the PTC amendment that SCE filed in October of 2024, SCE determined that, for reasons independent from the TLRR program, load growth along Segment 4 would require much more extensive construction. Due to the timeframe required for the re-design of this segment and the fact that proposed Segments 1, 2, 3N and 3S can proceed with or without "Segment 4," SCE's second amended PTC Application removed Segment 4 from the I-C Project. This EIR, therefore, evaluates Segments 1, 2, 3N and 3S. Segment 4 is neither dependent on nor necessitated by Segments 1, 2, 3N and 3S. The Proposed Project, consisting of Segments 1, 2, 3N and 3S, can and would be constructed regardless of any future changes or upgrades along the previously-proposed Segment 4 area.

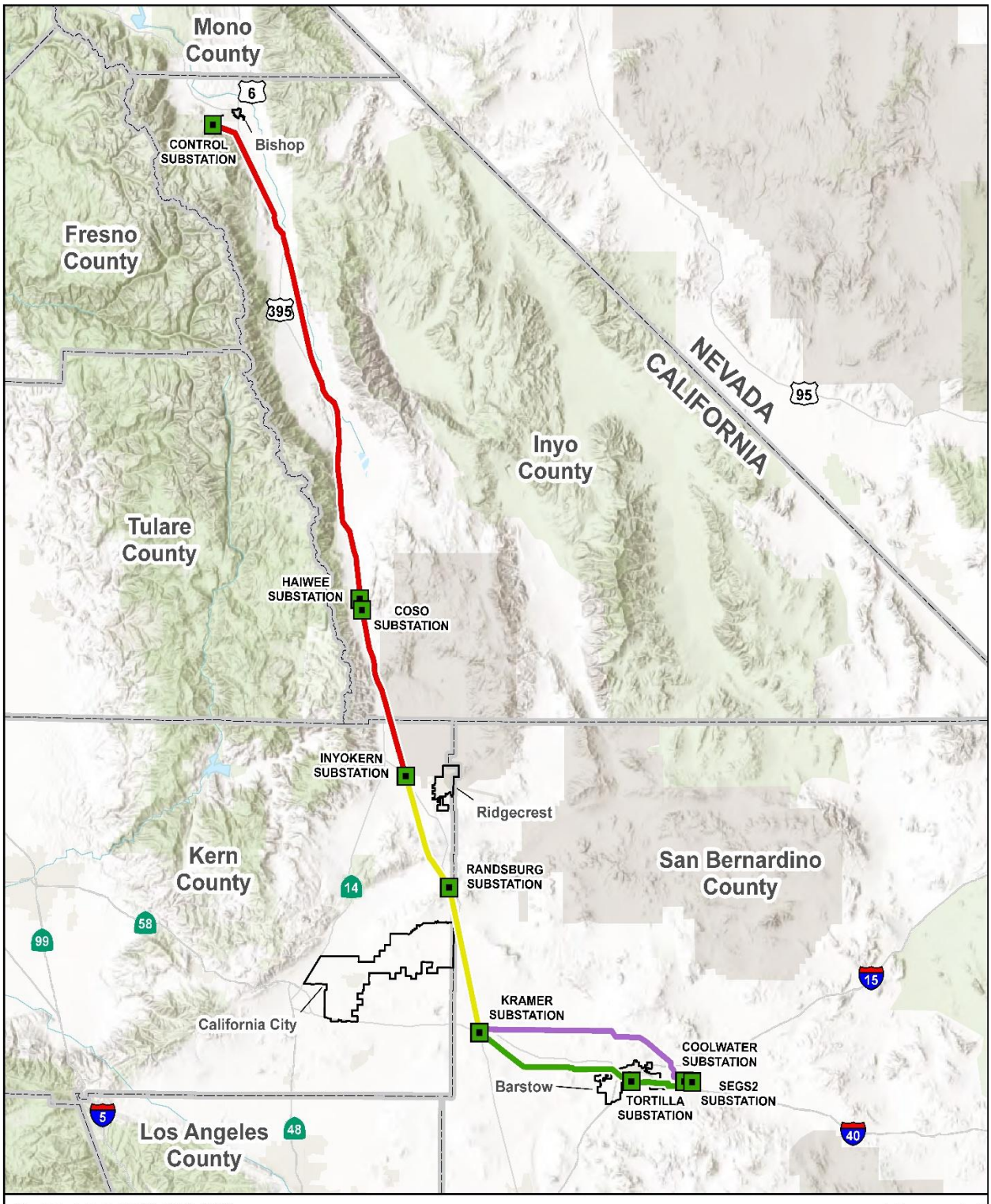
[2] Discrepancies are components of the SCE system that do not comply with requirements of CPUC General Order 95. Discrepancies are defined as potential clearance problems between an energized conductor and its surroundings, such as the structure, another energized conductor on the same structure, a different line, or the ground, among others.

[3] *Overhead ground wire* (OHGW) protects the transmission cables from lightning strikes and secures current flow in case of cable faults. *Optical ground wire* (OPGW) consists of OHGW, in addition to an optical fiber that provides telecommunication capabilities. All Dielectric Self-Supporting (ADSS) cable is a telecommunication cable.

[4] PEA Deficiency Data Request Set ED, SCE-013, Questions 13-1 and 13-2, Response Date 4/19/23.

[5] Structures installed between other existing structures.

[6] Derating means a reduction in the maximum listed power flow rating in the CAISO Transmission Registry. Operating a subtransmission line at a lower (derated) amperage reduces the maximum operating temperature at which the conductors that comprise these circuits operate. The reduction in the operating temperature would cause the conductors to 'sag' less; that is, the distance between the ground and the conductor would be increased, therefore meeting the GO-95 clearance requirements.


Mono County
6
CONTROL SUBSTATION
Bishop
Fresno County
395
NEVADA
CALIFORNIA
95
Inyo County
Tulare County
HAIWEE SUBSTATION
COSO SUBSTATION
INYOKERN SUBSTATION
Ridgecrest
Kern County
RANDSBURG SUBSTATION
San Bernardino County
14
58
99
15
KRAMER SUBSTATION
California City
COOLWATER SUBSTATION
Barstow
TORTILLA SUBSTATION
SEGS2 SUBSTATION
5
Los Angeles County
48
40
Sources: Aspen, 2024; BLM, 2024; ESRI, 2024; SCE, 2024.
Figure 1-1
Ivanpah-Control Project Segments
Segment 1: Control-Haiwee-Inyokern
Segment 2: Inyokern-Kramer
Segment 3N: Kramer-Coolwater
Segment 3S: Kramer-Tortilla-Coolwater
Substation
City Boundary
County
Proposed Project Route and Segments
1:1,584,000
N
0
25
Miles

1.1.1. Land Ownership and Right-of-Way Requirements

The I-C Project would be built within existing or new/expanded ROWs, including easements, public ROWs, and on existing SCE fee-owned property. The width of these ROWs varies over the length of the Proposed Project. Existing access roads and spur roads are primarily located within existing ROWs or covered under easements, are public roads, or are open roads on lands administered by the BLM. In some cases, SCE's existing ROWs on BLM-managed lands have expired and will be renegotiated if the Project is approved.

Additionally, some of the replacement structures in Segment 1 would be installed outside the existing corridor on which SCE has rights. In these areas, SCE would obtain new or expanded rights-of-way from the landowner or land management agency, which includes the US Bureau of Land Management (BLM), the Bureau of Indian Affairs (BIA), the Department of Defense (DOD), the California State Lands Commission (CSLC), the Los Angeles Department of Water and Power (LADWP), or private landowners. Road crossings would require new permits from Caltrans, counties, and potentially from the City of Barstow.

Land rights issues are not part of this regulatory proceeding in which the CPUC is considering whether to grant or deny SCE's PTC application to upgrade existing electrical facilities. Rather, any land rights issues would be resolved in subsequent negotiations and/or condemnation proceedings in the proper jurisdiction, following the decision by the CPUC on SCE's application.

1.2. Project Objectives

SCE identified a number of objectives and submitted statements of the project purpose and need as part of its application to the CPUC for the Proposed Project. Section 1.2.1 presents SCE's project objectives and its purpose and need for the Proposed Project. Section 1.2.2 describes the project objectives developed by the CPUC, after considering SCE's information and other data obtained.

1.2.1. SCE Project Objectives

The application for the Proposed Project includes SCE's statements of Objectives and Purpose and Need in PEA Sections 2.1 and 2.2. SCE presents 4 objectives for the Proposed Project. SCE's stated project objectives are as follows:

1. Ensure compliance with standards contained in CPUC General Order 95 and NERC Facility Ratings for this project.
2. Continue to provide safe and reliable electrical service.
3. Meet I-C Project needs while minimizing environmental impacts.
4. Design and construct the physical components of the I-C Project in conformance with industry and/or SCE's approved engineering, design, and construction standards for substation and subtransmission system projects.

Each of the I-C Project objectives is more thoroughly described by SCE as follows.

Objective 1: Ensure compliance with standards contained in CPUC General Order 95 and NERC Facility Ratings for this project.

The purpose of the Rules contained within CPUC GO 95 is to "formulate, for the State of California, requirements for overhead line design, construction, and maintenance, the application of which will 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." One of the objectives of the I-C Project is to remediate the identified discrepancies in order to ensure compliance with standards contained in CPUC GO 95 Rule 37, Minimum Clearances of Wires above Railroads, Thoroughfares, Buildings, Etc., Table 1; Rule 38, Minimum Clearances of Wires from Other Wires, Table 2; and Rule 39, Minimum Clearance of Wires from Signs, Table 2-A.

Remediating the identified discrepancies would also bring the lines into compliance with the NERC Facility Rating for the lines, including NERC Standard FAC-009-1, which requires that SCE ensure that Facility Ratings used in the reliable planning and operation of the Bulk Electric System (BES) are determined based on an established methodology or methodologies.[7] Remediating the identified discrepancies would also ensure compliance with applicable WECC reliability planning criteria; the work would be completed as detailed in the mitigation plan filed in 2007 by SCE and accepted by WECC.

Objective 2: Continue to provide safe and reliable electrical service.

Under the Federal Energy Regulatory Commission (FERC), NERC, WECC, and CPUC rules, guidelines and regulations, SCE has the responsibility to ensure that electrical transmission, subtransmission, and distribution systems have sufficient capacity to maintain safe, reliable, and adequate service to customers. To ensure the availability of safe and reliable electric service, SCE has established a set of criteria by which it determines when new projects are needed. The safety and reliability of the systems must be maintained under normal conditions when all facilities are in service and also maintained under abnormal conditions when facilities are out of service due to equipment or line failures, maintenance outages, or outages that cannot be predicted or controlled which are caused by weather, earthquakes, traffic accidents, and other unforeseeable events.

The I-C Project would provide safe and reliable electrical service by remediating the identified discrepancies described below in Section 1.2.2. Discrepancies may contribute to unplanned outages and thus decreased electric service reliability; remediating the identified discrepancies would thus allow SCE to continue to provide reliable electric service to its customers. Further, the engineering solutions employed to remediate the identified discrepancies, including installation of new poles, towers, and conductor that meet current SCE standards, would serve to increase safety and reliability by modernizing the lines' infrastructure.

Objective 3: Meet I-C Project needs while minimizing environmental impacts.

CEQA and the CEQA Guidelines (Title 14 of the California Code of Regulations, Section 15000, *et seq.)* require that an environmental impact report describe a reasonable range of alternatives to a proposed project, or the location of the proposed project that would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project. CEQA Guidelines Section 15126.6(d) requires that sufficient information about each alternative be included to allow meaningful evaluation and analysis.

Objective 4: Design and construct the physical components of the I-C Project in conformance with industry standards and/or SCE's approved engineering, design, and construction standards for substation and subtransmission system projects.

SCE strives to construct electrical facilities in a consistent manner, meaning that the substation designs, transmission line designs, subtransmission line designs, distribution facility designs, and operating requirements for each type of facility are consistent and familiar to the field personnel that are required to operate and maintain the facilities. These standards are developed and revised as necessary based on experience to ensure SCE constructs safe, reliable, and operable facilities on a consistent basis. In addition, the consistent design ensures that upgrades to existing facilities are completed in a manner that provides the lowest total cost of ownership. SCE's and industry standards provide a base to evaluate the merits of proposed changes which are evaluated to determine impact on safety, reliability, operations, maintenance, construction, and cost.

1.2.2. Review of SCE Project Objectives

The existing I-C transmission system includes four primary 115 kV circuits. In 2006, SCE identified that the clearances along some of its circuits were not compliant with the clearances set forth in CPUC GO 95 due to: the instillation of additional infrastructure under SCE lines over time; survey, engineering, and construction

inaccuracies; the growth of vegetation; and changes in topography. This information was communicated to both the CPUC and the California Independent System Operator (CAISO). SCE then initiated a Light Detection and Ranging (LiDAR) study and engineering modeling work to confirm these discrepancies.[7] The discrepancies were reported to the North American Electric Reliability Corporation (NERC) by SCE as the GO 95 discrepancies result in reduction to line ratings, and a mitigation plan to address these discrepancies was files with and accepted by the Western Electricity Coordinating Council (WECC).[8]

The collective effort to identify and remediate these discrepancies across SCE's system is referred to as the Transmission Line Rating Remediation (TLRR) Program. Bason on the LiDAR and engineering modeling work, SCE's TLRR Program is developing a remediation plan for each discrepancy to ensure compliance with CPUC GO 95 standards. SCE has stated it is committed to undertaking all reasonable efforts to correct discrepancies on the I-C Project 115 kV subtransmission lines prior to January 1, 2025.

As stated above, Objective 1 of the I-C Project is to ensure compliance with CPUC GO 95 standards by remediating approximately 2,500 discrepancies identified through SCE's TLRR Program along the segments with 115 kV circuits, listed in Table 1-1, along with the number of discrepancies per segment.

Table 1-1. Number of Discrepancies per Segment

Segment Number	Length (Miles)	Number of Discrepancies
Segment 1	126	1,681
Segment 2	48	335
Segment 3N	44	241
Segment 3S	44	230
Total	**262**	**2,487**

Source: SCE, 2020

1.2.3. CPUC Project Objectives

As the CEQA lead agency, CPUC is responsible for defining project objectives for the purpose of the CEQA analysis. These objectives may differ from SCE's objectives stated in the section above. Based on its understanding of the purpose of the Proposed Project, the CPUC evaluated SCE's objectives, described in Sections 1.2.1 and 1.2.2, and has identified the following three basic project objectives:

- Rebuild or modify the subtransmission components of the existing I-C line segments to comply with CPUC General Order 95 and to meet the reliability requirements defined in the NERC Facility Ratings.
- Design and construct the physical components of the I-C Project to meet current engineering, design, and construction standards for substation and subtransmission system projects.
- Continue to provide safe and reliable electrical service while minimizing the environmental impacts of the I-C Project by using existing right-of-way or obtaining new authorizations for other feasible line placement options where practicable opportunities exist.

1.2.4. Economic Characteristics of the Proposed Project

CEQA Guidelines Section 15124(c) require an EIR to describe the Project's technical, economic, and environmental characteristics, considering its principal engineering proposals and any supporting public service facilities. As described in Section 1.2.1, SCE's purpose for the Project is to ensure compliance with safety standards, allowing continued provision of safe and reliable electric service.

[7] An individual instance of non-compliance with CPUC GO 95 clearance requirements is referred to as a discrepancy. Light Detection and Ranging (LiDAR) technology uses ultraviolet or near infrared light to image objects and map physical features. SCE uses aircraft equipped with LiDAR equipment to identify locations throughout SCE's service territory that do not meet the minimum required clearances for overhead lines established in CPUC GO 95.

[8] The rating of transmission lines depends on many factors including the electrical rating of elements, the thermal rating of elements, and conductor clearance.

As stated in the 2024 Amended PTC Application, the estimated capital cost of the IC Project is approximately $977 million in 2024 constant dollars. This value includes substantial investment in infrastructure, employment of hundreds of construction personnel, purchase of supplies and equipment, and the ongoing provision of electricity to support the economies of Inyo, Kern, and San Bernardino Counties.

The environmental characteristics of the project are described in Chapter 3 (Environmental Impacts and Mitigation Measures) and Chapter 5 (Cumulative Impacts) of this EIR.

1.3. Agency Use of this EIR

1.3.1. CPUC Use of this EIR

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 review of this project. The CPUC Energy Division has directed the preparation of this EIR. This EIR will be used by the Commission, in conjunction with other information developed in the Commission's formal record, to act on SCE's application for a PTC for construction and operation of the Proposed Project. The CPUC has exclusive authority to approve or deny SCE's application or an alternative; however, various permits from other agencies may also need to be obtained by SCE to build the Proposed Project. If the CPUC issues a PTC, it would provide overall project approval and certify compliance of the project under CEQA.

The CPUC has assigned Administrative Law Judge (ALJ) Zhen Zhang to oversee the hearings on the Proposed Project, and Commissioner Karen Douglas as the Assigned Commissioner for the PTC application. After publication of the Final EIR, the ALJ will hold Evidentiary Hearings (if required) to cover issues of project cost and other considerations and will issue a Proposed Decision. The CPUC expects a final decision from the Commission within 6 months of publication of the Final EIR.

1.3.1.1. Permit to Construct Requirements

The requirements for applying for an issuing a PTC are defined in updated General Order (GO) No. 131-E (superseding GO 131-D as of January 2025), *Rules Relating to the Planning and Construction of Electric Generation, Transmission/Power/Distribution Line Facilities and Substations Located in California*. Section III.B of GO 131-E defines that:

> No electric public utility shall begin construction in this state of any of the following without first obtaining a PTC from the Commission:
>
> a. Any electric power line facilities, substations, or switchyards which are designed for immediate or eventual operation at any voltage between 50 kV and 200 kV;
>
> b. New or upgraded substations or switchyards with high side voltage exceeding 50 kV, or
>
> c. The extension, expansion, upgrade, or other modification or existing electrical transmission facilities, except where exemptions apply…

GO 131-E Section VII.B governs the I-C Project, which falls under the category of *Transmission Line, Power Line, and Substation Facilities Designed to Operate Over 50 kV Which Are Not Included in Subsection A*. The application for a PTC must include a description of the project, a map, reasons for the location selected, a list of government agencies consulted, measures taken to reduce potential exposure to electric and magnetic fields (EMFs), demonstration of compliance with other applicable Commission policies, and a PEA. In addition,

> An application for a PTC need not include a detailed analysis of purpose and necessity, a detailed estimate of cost and economic analysis, a detailed schedule, or a detailed description of construction methods beyond that required for CEQA compliance.

If the CPUC approves a project with significant and unavoidable impacts, it must state why in a "Statement of Overriding Considerations," which would be included in the Commission's decision on the application.

1.3.2. BLM Process

The BLM is the federal lead agency for the Environmental Impact Study (EIS) that will be published for the I-C Project. The BLM conducted NEPA scoping in late 2022, with scoping meetings on December 13 and 14, 2022. The Notice of Intent (NOI) describing the Proposed Project was published in the Federal Register on November 18, 2022. The NOI announced the beginning of the scoping process and sought public input on environmental issues and planning criteria.

The BLM intends to issue an EIS in compliance with NEPA. A Draft and Final EIS must be prepared before the BLM can consider issuance of a Record of Decision that approves the project for construction and operation and results in issuance of an updated right-of-way grant to SCE.

1.3.3. State and Trustee Responsible Agencies

Several other agencies will rely on information in this EIR to inform them in their decision over issuance of specific permits related to project construction or operation. In addition to the CPUC and BLM, permits would be required from state agencies such as the California Department of Transportation and California State Lands Commission (a Trustee agency for sovereign lands within California),[9] as well as local agencies such as Inyo, Kern, and San Bernardino Counties, the City of Barstow, and the LADWP.

1.3.4. Permits Required for the Proposed Project

Table 1-2 summarizes the other permits or approvals from the CPUC, as well as other federal, tribal, State or regional, and local agencies that may be needed for the project.

Table 1-2. Permits that May Be Required for the I-C Project

Agency	Jurisdiction	Requirements
Federal Agencies		
U.S. Bureau of Land Management (BLM)	Construction on or in lands administered by the BLM	■ Amendment to Right-of-Way Grant/Record of Decision/Notice to Proceed for transmission line ■ Temporary Use Permit
U.S. Army Corps of Engineers (USACE), Los Angeles District	Construction or operation of facilities which may result in any discharge into U.S. navigable waters	■ Section 401/404 Permit – streambed alteration/crossing
Federal Aviation Administration (FAA)	Air safety near municipal airports that may be impacted by construction of the project	■ Form 7460-1, Notice of Proposed Construction or Alteration; Permit and Notice to Airmen
Federal Communications Commission (FCC)	Licenses/permits related to FCC frequencies and paths	■ Telecommunications Permit (as required)
State or Regional Agencies		
California Public Utilities Commission (CPUC)	Transmission, substation, generation projects 50 kV and above	■ Permit to Construct
California Department of Transportation (Caltrans)	California Streets and Highways Code 660-711.21; CCR 1411.1-1411.6	■ Overload Permit ■ Road/Highway Encroachment/Crossing Permits for activities in Inyo, Kern, and San Bernardino Counties

[9] https://www.slc.ca.gov/land-types/

Agency	Jurisdiction	Requirements
California Department of Fish and Wildlife (CDFW)	Protection of fish, wildlife, plant resources and habitats	■ Incidental Take Permit for protected species (if required) ■ Streambed Alteration Agreement, Section 1602 Permit (if required)
California State Lands Commission (CSLC)	Sovereign lands, held in trust for Californians; and school lands	■ Lease or permit would be required to cross state lands
Regional Water Quality Control Board (RWQCB)	Protection of surface waters under the Clean Water Act	■ Clean Water Act Section 401 certification (if required)
Los Angeles Department of Water and Power (LADWP)	Encroachment of Colorado River Aqueduct	■ For transmission line structures located on lands owned by LADWP ■ For construction activity crossing aqueduct
Department of Toxic Substances Control (DTSC)	Handling hazardous materials under Hazardous Waste Control Act of 1972	■ EPA Hazardous Waste Generator ID
State Historic Preservation Office (SHPO)	Any archaeological or paleontological work	■ Cultural Resources Use Permit, Field Use Authorization, or an ARPA Permit (if required)
Local Agencies		
Inyo County	County roads and highways, flood control/drainage channels	■ Road/Highway Encroachment/Crossing Permit ■ Flood Control/Drainage Channel Encroachment/Crossing Permit
Kern County	County roads and highways, flood control/drainage channels	■ Road/Highway Encroachment/Crossing Permit ■ Flood Control/Drainage Channel Encroachment/Crossing Permit
San Bernardino County	County roads and highways, flood control/drainage channels	■ Road/Highway Encroachment/Crossing Permit ■ Flood Control/Drainage Channel Encroachment/Crossing Permit
Eastern Kern Air Pollution Control District	Air emissions, fugitive dust	■ Visible emissions (EKAPCD Rule 401) ■ Fugitive dust (EKAPCD Rule 402) ■ Public nuisance (EKAPCD Rule 419)
Great Basin Unified Air Pollution Control District	Air emissions, fugitive dust	■ Fugitive Dust (GBUAPCD Rule 401) ■ Air contaminants (GBUAPCD Rule 402) ■ Particulate emissions (GBUAPCD Rule 431)
Mojave Desert Air Quality Management District	Air emissions, fugitive dust	■ Visible emissions (MDAQMD Rule 401) ■ Public nuisance (MDAQMD Rule 402) ■ Fugitive dust (MDAQMD Rule 403, 403.2) ■ Asbestos Notification (MDAQMD notification requirements)
City of Barstow	City streets, sidewalks, flood control/drainage channels, lands	■ Road Encroachment/Crossing Permit ■ Flood Control Channel Encroachment/Crossing Permit ■ Temporary Use/Occupancy Permit, for material and storage yards ■ Storm Water Pollution Prevention Plan
Other Utilities		
Southern California Gas Company	Activities in area of natural gas pipelines	■ Pipeline Encroachment/Crossing Permit
Mojave Water Agency Indian Wells Valley Water District Inyokern Community Service District	Sale of water	■ Water provision/purchase for dust control

Agency	Jurisdiction	Requirements
Burlington Northern and Santa Fe Railway (BNSF) Union Pacific Railroad (UPRR)	Activities in area of railroad	■ Encroachment/Crossing Permit

1.4. Native American Consultation under Assembly Bill 52

The CPUC notified Native American Tribes about the project in accordance with the requirements of Assembly Bill 52 (AB 52). The CPUC mailed AB 52 notification letters on August 26, 2020. There are 19 Native American Tribes that have requested consultation under AB 52. The CPUC consulted with all Tribes that requested consultation. The consultation process is described in detail in Section 3.7 (Tribal Cultural Resources) and Appendix 5B.

1.5. Scoping Comments and Issues Addressed

1.5.1. Notice of Preparation

The CPUC released a Notice of Preparation (NOP) on September 1, 2020, by filing it with the Office of Planning and Research State Clearing House. The NOP was posted on the CPUC's project website and mailed to multiple agencies and tribes that are near the Project. These agencies include federal agencies multiple BLM Desert District field offices, the National Park Service, multiple Department of Defense bases, and the US Fish and Wildlife Service. State agencies were also notified, including the CSLC, CDFW, multiple Caltrans districts, and RWQCB. The local agencies that were contacted include Inyo, Kern, and San Bernardino County Planning and Public Works departments, the Bishop and Barstow-Daggett Airport and other county and regional service providers. The Cities of Barstow, Ridgecrest, Bishop also received the NOP.

The NOP was also mailed to the SHPO and the Native American Heritage Commission. A postcard announcing the release of the NOP and the dates and times of the scoping meetings was mailed to all property owners within 1,000 feet of Proposed Project facilities.

1.5.2. Scoping Meetings

Scoping was conducted from September 1, 2020 to September 30, 2020. Two scoping meetings were held, one on Thursday September 3, 2020 and the second on Thursday September 10, 2020. Due to COVID-19, these two public scoping meetings were conducted virtually, one in the afternoon and one in the evening. Oral comments were received from tribal entities during the September 3 meeting and documented in the Scoping Report. No comments were received during the September 10 meeting.

There were 29 and 17 attendees, respectively, at the September 3 and September 10 meetings. Attendees at these virtual meetings included property owners and representatives from SCE, BLM, NPS, Fort Independence Tribe, Timbisha Shoshone Tribe, and Fort Mojave Indian Tribe.

1.5.3. Scoping Comments

The CPUC issued a Scoping Report for the I-C Project in December 2020. The report summarizes issues of concern based on written and oral comments from agencies, organizations, and members of the public. Comments are summarized in Section 4 of the Scoping Report; the report and its appendices are available on the CPUC's Ivanpah-Control Project website at:

https://ia.cpuc.ca.gov/environment/info/aspen/ivanpah-control/ivanpah-control.htm

1.6. Public Review and Comment

A Notice of Completion (NOC) has been filed with the State Clearinghouse to begin the public review period (Public Resources Code [PRC], Section 21161) for the Draft EIR. Pursuant to PRC Section 21092.3 and State CEQA Guidelines Section 15087(c), a notice of availability of the Draft EIR was posted in the County Clerks' offices of Inyo, Kern, and San Bernardino counties.

The Draft EIR has been made publicly available for review and comment in accordance with Section 15087 of the CEQA Guidelines and PRC 21092(b)(3). In compliance with CEQA Guidelines Section 15129, a list of federal, State, and local agencies and other organizations contacted in preparation of this Draft EIR is provided in EIR Chapter 8 (Agencies Consulted, Preparers, and Reviewers).

The Draft EIR is available for review online on the CPUC's Project Website (link above). Organizations and interested members of the public are invited to comment on the information presented in this Draft EIR during the 45-day public review period. The project website also provides information on public comment meetings to be held during the 45-day public review period.

Comments on the Draft EIR may be sent by email to Ivanpah-Control@aspeneg.com or by mail at the address listed below:

John Forsythe, CPUC Project Manager
Ivanpah-Control Project
c/o Aspen Environmental Group
235 Montgomery Street, Suite 967
San Francisco, CA 94104

All significant environmental issues raised in comments received during the public review period for the Draft EIR will be responded to in the Final EIR.

The dates of the start and end of the public comment period are stated on the project website.

1.7. Document Organization and Reader's Guide

The EIR is organized as follows:

Contents, Acronyms and Abbreviations

Executive Summary. A summary description of the Proposed Project, the alternatives, their respective environmental impacts, and the Environmentally Superior Alternative.

Chapter 1, Introduction. This discussion of the history, purpose and need for the project, and the public agency use of the EIR.

Chapter 2, Project Description. Detailed description of the Proposed Project and the Connected Actions. List of Applicant Proposed Measures.

Chapter 3, Environmental Analysis. A comprehensive analysis and the assessment of impacts and mitigation measures for the Proposed Project and the Connected Actions. This section is organized in sections for each of the 21 environmental disciplines (e.g., Air Quality, Cultural Resources) that contain the environmental settings and impacts of the Proposed Project and each alternative. At the end of each discipline's section, a Mitigation Monitoring table is provided.

Chapter 4, Alternatives. Description of the alternative's evaluation process, description of alternatives considered but eliminated from further analysis and the rationale thereof, alternatives analysis, and comparison of alternatives.

Chapter 5, Cumulative Scenario and Impacts Analysis. A discussion of the cumulative scenario and impacts with regard to the Proposed Project and alternatives.

Chapter 6, Other CEQA Requirements. A discussion of environmental justice, growth-inducing impacts, significant irreversible and irretrievable changes, significant environmental effects that cannot be avoided if the Proposed Project is implemented, and the relationship between short term uses and long-term productivity of the environment.

Chapter 7, Mitigation Monitoring and Reporting Plan. A discussion of the CPUC's mitigation monitoring program requirements for the project as approved by the CPUC.

Chapter 8, Agency Coordination and Public Involvement. A brief description of the public participation program for this EIR.

Appendices:

- Appendix 1: Detailed Project Maps
- Appendix 2: SCE's EMF Field Management Plan
- Appendix 3: Air Quality
- Appendix 4: Biological Resources
- Appendix 5: Cultural Resources and Tribal Cultural Resources
- Appendix 6: Geology, Soils, and Paleontology

1.7.1. Terminology Used in this Document

CEQA documents include the use of specific terminology. To aid the reader in understanding terminology and language used throughout this document, the following CEQA terms are defined below and discussed in greater detail in Section 3.1 (Introduction to Environmental Analysis):

Project or Proposed Project: The whole of the action that has the potential to result in a direct or indirect physical change in the environment.

Environment: The baseline physical conditions that exist in the area before commencement of the proposed Project and that the proposed Project would potentially affect or alter. The environment is where significant direct or indirect impacts could occur as a result of Project implementation, and it includes such elements as air, biological resources (i.e., flora and fauna), land, ambient noise, mineral resources, water, and objects of aesthetic or cultural significance.

Direct impacts: Impacts that would result in a direct physical change in the environment as a result of Project implementation. Direct impacts would occur at the same time and place as the Project.

Indirect or secondary impacts: Impacts that would result from proposed Project implementation but that may occur later in time or farther removed in distance.

Significant impact on the environment: A substantial, or potentially substantial, adverse change in physical conditions that is the result of proposed Project implementation. This can include substantial or potentially substantial adverse changes to such factors as air, biological resources (flora or fauna), land, water, minerals, ambient noise, and objects of cultural or aesthetic significance. An economic or social change may factor in an assessment of whether a physical impact is significant, but it not itself a significant impact on the environment.

Mitigation measures: Project-specific actions that, if adopted, avoid or substantially reduce the proposed Project's significant environmental effects. Effective mitigation measures can:

- avoid the impact altogether.
- minimize the impact by reducing the degree or magnitude of the action and its implications.
- rectify the impact by repairing, rehabilitating, or restoring the affected environment.
- reduce or eliminate the impact over time by preservation and maintenance operations during the life of the action; or
- compensate for the impact by replacing or providing substitute resources or environments.

Applicant Proposed Measures (APMs): Measures that avoid, minimize, or reduce impacts, which are distinguished from mitigation measures in this EIR because the Applicant commits to complying with these measures to reduce potential impacts during construction and operation. Any APMs discussed in the EIR are inherently part of the proposed Project and are not additional mitigation measures proposed as a result of the significance findings from the CEQA environmental review process.

Cumulative impacts: Two or more individual impacts that, when considered together, are considerable or that compound or increase other environmental impacts (State CEQA Guidelines Section 15355). The following statements also apply when considering cumulative impacts:

- The individual impacts may be changes resulting from a single project or a number of separate projects.
- The cumulative impact from several projects is the change in the environment that results from the incremental impact of the 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 time.

Impact Significance. Terms used in this document to describe the level of significance of adverse impacts are defined as follows:

- **No Impact:** An impact on a specific environmental resource would not occur.
- **Less than significant:** An impact that is adverse but that falls below the defined thresholds of significance and does not require mitigation.
- **Less than significant with mitigation:** An impact that exceeds the defined thresholds of significance but is reduced to a less than significant level through the incorporation of mitigation measures.
- **Significant:** An impact that exceeds the defined thresholds of significance. A significant impact would or could potentially cause a substantial adverse change in the environment and would require incorporation of feasible mitigation measures to eliminate the impact or reduce it to a less-than-significant level.
- **Significant and unavoidable:** An impact that cannot be eliminated or lessened to a less-than-significant level through incorporation of mitigation measures.

Finally, in this EIR various technical terms are used to describe the I-C Project (see EIR Chapter 2):

- "**Lines**" typically describes the path of the power lines in the same general corridor. The singular term "line" is used to refer to one of the double-circuit power lines or circuits.
- "**Structure**" is general terms used to describe the tower or pole structure that supports the 115 kV conductors. The existing structures on the I-C Project use four types of structures: wood or steel H-frame, lattice steel tower (LST), lattice steel pole (LSP), tubular steel pole (TSP), and light-duty steel pole (LDSP).
- "**Conductor**" is a bundle of wires or other materials that allows electrical current to flow through them. Conventional conductors are typically made of aluminum, reinforced with steel. Other conductor types include Aluminum Conductor Composite Reinforced (ACCR) conductor.
- "**Circuit**" refers to a single power line consisting of three conductors.

2. PROJECT DESCRIPTION

2.1. Project Overview

Southern California Edison Company (SCE) proposes to construct and operate the Ivanpah-Control Project (Proposed Project, Project, or I-C Project) to remediate physical clearance discrepancies[1] identified on 262 miles of SCE's existing 115 kilovolt (kV) subtransmission lines located in Inyo, Kern, and San Bernardino Counties.[2]

The California Public Utilities Commission (CPUC) General Order 95 (GO 95) Rules 37 through 39 specify minimum vertical and horizontal clearances that must be maintained between an electrical conductor and other conductors, or between a conductor and the ground, buildings, and a variety of other objects.[3]

SCE's effort to identify and remediate the conductor clearance discrepancies is called the Transmission Line Rating Remediation (TLRR) Program.[4] The Proposed Project would ensure compliance with CPUC GO 95 by remediating approximately 2,487 discrepancies identified through SCE's TLRR Program along seven 115 kV circuits. As illustrated in Figure 1-1 (Proposed Project Route and Segments), the Proposed Project would consist of four segments affecting existing, new, and upgraded subtransmission facilities spanning 12 existing substations. All Chapter 2 figures are presented at the end of the chapter.

The IC Project description is based on planning-level assumptions. Actual work scope would be refined following completion of final engineering, identification of field conditions, and compliance with applicable environmental and permitting requirements.

CEQA Guidelines (Sections 15124 and 15125) require that an EIR Project Description address three specific topics that are presented in Section 1 of this EIR. The following topics are found in that section:

- Project Economic Characteristics: See EIR Section 1.2.3
- Project Objectives: See EIR Section 1.2
- Intended Uses of the EIR: See Section 1.3

2.1.1. Project Location and Description of Project Segments

SCE proposes to rebuild components of its existing 115 kV subtransmission system that extend over 262 miles between 8 existing SCE substations across portions of three counties. SCE has divided the I-C Project into four segments: Segments 1, 2, 3N, and 3S. Table 2-1 (Project Components and Substations by Segment) lists the substation endpoints and facilities affected within each segment and their general locations and Figure 1-1 shows the location of each segment.

The existing 115 kV subtransmission system within each of the four segments is illustrated schematically in Figure 2-1 (Existing Transmission System). The existing 115 kV subtransmission lines do not have

[1] An individual instance of non-compliance with CPUC General Order (GO) 95 clearance requirements is referred to as a discrepancy. Discrepancies are defined as potential clearance problems between an energized conductor and its surroundings, such as the structure, another energized conductor on the same structure, a different line, the ground, or other components. Remediation of discrepancies means that the clearance issues will be resolved to ensure compliance with standards contained in CPUC GO 95 and North American Electric Reliability Corporation (NERC) Facility Ratings.

[2] SCE identifies electrical lines operated at voltages between 50 kilovolts (kV) and 200 kV as subtransmission lines or subtransmission circuits. Electrical lines operated at voltages greater than 200 kV are identified as transmission lines. *Source*: PEA Section 2.1. In this EIR, the project components are all 50 kV to 200 kV, and the terms "subtransmission" or "transmission" lines used herein are used interchangeably to refer to these project components.

[3] Conductor clearance in the field (e.g., between a conductor and the ground) is not a static value; it changes depending upon the operational characteristics of the line. As greater amounts of electricity are transmitted by a conductor, the conductor material heats up and expands, resulting in greater sag (and a lesser clearance) in a given span.

[4] The TLRR Program is focused on developing and implementing engineering solutions for each identified discrepancy to bring the circuits into compliance with standards contained in CPUC GO 95 and the California Independent System Operator (CAISO) 2008 Transmission Register.

telecommunication infrastructure installed; the substations included in the I-C Project are connected to SCE's Supervisory Control and Data Acquisition (SCADA) system by a variety of means. Operational control of SCE's 115 kV subtransmission system is provided by the California Independent System Operator (CAISO).

Table 2-1. Project Components and Substations by Segment

Segment	Segment Start and Endpoints	Other Facilities Affected	County and Length*	Circuits
Segment 1	■ Control Substation to Inyokern Substation	■ Independence Amplifier Site ■ Coso Substation ■ Haiwee Substation	■ Inyo County (115 miles) ■ Kern County (11 miles)	■ Control-Coso-Haiwee-Inyokern ■ Control-Haiwee-Inyokern
Segment 2	■ Inyokern Substation to Kramer Substation	■ Randsburg Substation	■ Kern County (26 miles) ■ San Bernardino County (23 miles)	■ Kramer-Inyokern-Randsburg No. 1 ■ Cal City-Kramer (for up to 18.5 miles with the Cal City Options described below)
Segment 3N	■ Kramer Substation to Coolwater Substation	■ None	■ San Bernardino County (44 miles)	■ Kramer-Coolwater
Segment 3S	■ Kramer Substation to Coolwater Substation	■ Tortilla Substation	■ San Bernardino County (44 miles)	■ Kramer-Tortilla ■ Coolwater-SEGS2-Tortilla

*Length is rounded to nearest mile.

Following is a description of the existing subtransmission infrastructure within each segment of the Proposed Project:

- **Segment 1: Control Substation to Inyokern Substation**. Segment 1 is approximately 126 miles long and contains 115 kV double-circuit towers and poles. Segment 1 was originally constructed in 1912 as part of the Tower Line originating at Control Station on the Bishop Creek Hydroelectric System to San Bernardino Steam Station, now the Calectric Substation. The lines transmit power from Bishop Creek Hydroelectric System, located on Bishop Creek, just west of the town of Bishop, California.
- **Segment 2: Inyokern Substation to Kramer Substation.** Segment 2 was constructed in 1913 and is referred to by SCE as the Kramer-Inyokern-Randsburg No.1 115 kV Subtransmission Line. Segment 2 is approximately 48 miles long and was also originally constructed as part of the Tower Line originating at Control Station.
- **Segment 3N: Kramer Substation to Coolwater Substation.** Segment 3N was also constructed in 1913 and is referred to by SCE as the Kramer-Coolwater 115 kV Subtransmission line. Segment 3N is approximately 44 miles long.
- **Segment 3S: Kramer Substation to Tortilla Substation to Coolwater Substation.** Segment 3S is approximately 44 miles long and is composed of two 115 kV subtransmission line segments. SCE's Kramer-Tortilla 115 kV Subtransmission Line was constructed in 1969. Segment 3S serves distribution loads in Barstow, California from the Tortilla Substation, located at the southern edge of the City of Barstow to the Coolwater Substation. SCE's second subtransmission line in Segment 3S is called the Coolwater-SEGS2-Tortilla 115 kV Subtransmission Line. SCE constructed Segments 3N and 3S as parallel but separate 115 kV lines between the Kramer and Coolwater Substations for the purposes of system reliability.

The TLRR Program identified 1,681 spans[5] with discrepancies within **Segment 1** and 335 within **Segment 2**. Replacement structures in these segments would be located in a new alignment immediately adjacent to the existing alignment, approximately 50 feet to the east. The replacement of structures in a new alignment is necessary to provide continued service to Inyo, Kern, and San Bernardino Counties while the Project is being constructed.

The TLRR Program identified 241 spans with discrepancies within **Segment 3N** and 230 in **Segment 3S**. Reconductoring of the existing subtransmission line, in combination with replacement of a small number of structures, is proposed to remediate discrepancies and minimize environmental impacts.

2.2. Project Components

2.2.1. Summary of Project Activities by Segment

The Proposed Project would consist of the following major components in Inyo County, northeast Kern County, and northern San Bernardino County (see Figure 1-1, Proposed Project Route and Segments, in Chapter 1). SCE proposes to remediate discrepancies in each segment of the existing 115 kV subtransmission circuits through the activities described in the following paragraphs.

In **Segments 1 and 2**, SCE would remove all of the existing subtransmission towers and poles and conductor and replace them with tubular steel poles (TSPs), lightweight steel (LWS) poles, LWS pole H-frames, and multi-pole TSP and LWS pole structures and new conductor. SCE may install new aluminum conductor composite core (ACCC) 'Dove' conductors, or a different type of conductor. SCE would also install overhead groundwire (OHGW) or optical groundwire (OPGW) for system protection.[6] All Dielectric Self-Supporting (ADSS) telecommunications cable would be installed on new poles to connect to a repeater station in Independence. In Segment 2 of the Proposed Project, conductor would be installed for only one circuit on the new structures.

Segment 2 Options: Besides the Proposed I-C Project, there are two project options that may be implemented within Segment 2, as illustrated in Figure 2-2 (Cal City Options). The selected option would be defined by the CPUC in its decision for the SCE Cal City Project (Application A.23-03-005; SCE, 2023) and in its decision on the I-C Project. The CPUC may require SCE to construct the Proposed Project (as defined in Table 2-2, with structure heights ranging from 66 to 132 feet in height), or one of the following two options:

- **Cal City Option**: In this option, approximately 18.5 miles of Segment 2 north of the Kramer Substation would have a second circuit of conductor installed on the position that would be left vacant as currently proposed. The new Cal City-Kramer 115 kV line (following the route of the Proposed Project for Cal City) would join the I-C ROW at the intersection of 20 Mule Team Parkway and US 395. This circuit would be installed on the vacant position on the I-C structures from this point south into the Kramer Substation. The north end of the Cal City Option would be at structure number 121231, and the southern end at approximately structure number 121375. Approximately 145 structures of the 342 new structures in Segment 2 would be conductored with the second 115 kV circuit that would serve Cal City. The Cal City Option would also require that approximately 20 structures at the southernmost end of Segment 2 be constructed as much as 30 feet taller than those currently proposed, because they would have to support an electric distribution line (called "Isner 33 kV"), and potentially a Frontier-owned telecommunication line, on the same structures, as an underbuild (i.e., lower on the structures than the 115 kV conductors).

[5] Spans are the horizontal distances between pairs of poles or tower structures.

[6] *Overhead ground wire* (OHGW) protects the transmission cables from lightning strikes and secures current flow in case of cable faults. *Optical ground wire* (OPGW) consists of OHGW, in addition to an optical fiber that provides telecommunication capabilities. All Dielectric Self-Supporting (ADSS) cable is a telecommunication cable.

- **Cal City Sequoia Option**: In this option, the additional 115 kV circuit would join the I-C ROW about 7.5 miles north of Kramer Substation (at the intersection of Sequoia Boulevard and US 395) and would be installed from that point south into the Kramer Substation. The range of structure heights would be the same as that described for the Cal City Option.
- **Southern Alignment Adjustment**: Under both the Cal City Option and the Cal City Sequoia Option, the alignment of the new structures could be located where proposed by SCE in the Cal City application, as opposed to the proposed I-C alignment. The north end of this adjustment would begin at a location approximately 4 miles north of the Kramer Substation at structure number 121346, and would continue south for approximately 3.5 miles, ending at approximately structure number 121371 at the south, affecting a total of approximately 26 structures. North of this adjustment area, after the lines cross under the existing 220 kV circuit, the alignment would return to the proposed I-C alignment. Under this adjusted alignment, the new double-circuit 115 kV structures would be located approximately 50 feet west of the locations currently defined for the Proposed Project in Segment 2. The structures would still be located east of the existing access road, so no new access road would be required. SCE expects that these adjusted structure locations would still be within the Structure Work Areas defined for the Proposed Project, so all ground disturbance calculations would be unchanged.

Under both the Cal City Option and the Cal City Sequoia Option, the conductors for the Cal City-Kramer 115 kV circuit would be installed on the west side of the I-C Project structures. After the Cal City-Kramer 115 kV circuit splits from the I-C Project corridor, that side of the structures would be vacant for the remainder of this segment.

The Cal City Project and the I-C Project are not dependent on each other and could be constructed as proposed without involvement of the other project. The purpose of the Cal City Options would be to allow the Cal City-Kramer 115 kV circuit conductors to be installed in the vacant position on the I-C structures, reducing ground disturbance and the number of new structures required. The Cal City-Kramer conductors may be installed at the same time as the I-C conductors, or they may be installed at a different time. Regardless of timing, conductors along US 395 would be installed within the disturbance areas defined for the I-C Project or in the case of the Southern Alignment Adjustment, within the disturbance areas proposed in the Cal City application.

In **Segments 3N and 3S**, SCE would remove certain existing subtransmission towers and poles and replace them with steel multi-pole structures constructed from TSPs; wood multi-pole structures; and steel and wood H-frames constructed from LWS and wood poles.[7] SCE would remove existing conductor and install new ACCC 'Dove' conductors or a different type of conductor on replacement and existing structures. Two new structures would be installed between existing structures in Segment 3N. There would be no telecommunications facilities constructed in Segments 3N or 3S.

2.2.1.1. 115 kV Subtransmission Poles and Towers

Approximately 744 TSP and 397 permanent LWS poles would be installed as part of the Proposed Project. The diameter of TSP and LWS poles would typically be 2 to 6 feet and 1 to 4 feet at ground level, respectively, and taper to the top of the poles. TSP concrete pile foundations would be approximately 4 to 8 feet in diameter and would extend below ground approximately 10 to 30 feet with approximately 1 to 3 feet of concrete visible above ground. The TSP and LWS poles would be galvanized steel structures with a dulled finish.

Approximately 124 multipole TSP structures (which comprise two or three individual TSPs located at a single site, with each TSP bearing a single circuit or a single conductor) would be used for the Proposed Project, along with approximately 75 wood H-frame poles. Each of the vertical wood poles would extend approximately 65 to 74 feet above the ground. The diameter of the vertical wood poles would be

[7] PEA Deficiency Data Request Set ED, SCE-013, Questions 13-1 and 13-2, Response Date 4/19/23.

approximately 3 feet at ground level and would taper to the top of the pole. The horizontal member of the H-frames would be approximately 7-square inches.

The approximate dimensions of the proposed structure types are shown in Figures 2-3a through 2-3g, Typical Structure Design, and summarized in Table 2-2 (Summary of Project Subtransmission Structures).

Table 2-2. Summary of Project Subtransmission Structures

Project Component	Number of New Structures	Approx. Height Above Ground (Feet)	Approx. Pole Diameter (Feet)	Approx. Auger Hole Depth (Feet)	Auger Diameter (Feet)	Number of Existing Structures to be Removed	Existing Structures, Approx. Height (Feet)
Segment 1							
TSP, Single	383	75-140	2-6	10-30	4-8	—	—
TSP, Multi-pole	124	65-140	2-6	10-30	4-8	—	—
LWS, Multi-pole	0	88-106	1-4	11-13	2-5	—	—
LWS Pole	397	75-124	1-4	9-15	2-5	—	—
LST/TSP	—	—	—	—	—	986	65-81
Pole (LWS or Wood)	—	—	—	—	—	6	72-78
H-Frame (LWS or Wood)	—	—	—	—	—	80	43-91
Multipole (Wood)	—	—	—	—	—	75	55-91
Segment 2							
TSP, Single	342*	72-137	2-6	10-30	4-8	—	—
LWS Pole, Temporary	108	52-84	1-4	7-11	2-5	—	—
LWS, Multi-pole, Temporary	2	38-43	1-4	6-7	2-5	—	—
LST/TSP	—	—	—	—	—	384	66-132
TSP or LST/TSP, Single (Cal City Options)	145 TSPs	102-167	2-8	10-30	4-10	145 LST/TSP	66-132
H-Frame (LWS or Wood)	—	—	—	—	—	2	58-69
Segment 3N							
H-Frame, LWS, or Wood	43	66	1-2	9	2-3	41	61-66
Multipole, Wood	2	60-77	2-3	8-10	3-4	2	58
Segment 3S							
Multipole, TSP	3	57	1.5	10-30	2-3	—	—
H-Frame, LWS or Wood	32	74	1-2	9-10	2-3	32	57-77
Multipole, Wood	7	57-67	2-3	8-9	3-4	10	59-63

Source: SCE, PEA Table 3.5-1. Updated with SCE Response to DR 16 (9/30/24).
*Note that this number would be reduced if a Cal City Option is selected, and some structures would be counted in the row below for the Cal City Option.

2.2.1.2. Telecommunications Poles and Fiber Optic Cables

- In Segment 1, approximately 60 new poles would be installed along Mazourka Canyon Road between the IC Project alignment and the community of Independence. ADSS fiber optic cable would be suspended on these poles between the subtransmission circuit alignment and a proposed repeater station.
- In Segments 1 and 2 only, SCE would install approximately 174 miles of OPGW overhead conductor on the replacement structures.

- SCE would install approximately 1,390 feet of underground fiber optic cable within existing substations, and approximately 2,190 feet of underground fiber optic cable outside of existing substations in Segments 1 and 2 to connect the new OPGW conductor to the communications equipment installed within the substations.

2.2.1.3. Substation Modifications

- SCE would disconnect the existing conductors from existing positions at substations and connect new conductors to those existing positions.
- SCE would connect the new OPGW and underground communications cables to the existing communication racks, with minor modifications, if needed.
- SCE would install control cabling between existing circuit breakers to the existing mechanical electrical equipment room (MEER)/communication room/telecommunications cabinet and install new relay and protection racks in the existing MEER/communication room/telecommunications cabinet.
- SCE would install system protection and telecommunications-associated equipment at existing substations.

2.2.1.4. Conductors

The approximate distance from the ground to the lowest conductor would comply with CPUC GO 95 requirements and would exceed applicable minimum height requirements where the conductor spans roadways and water conveyance structures. OPGW, OHGW, or ADSS fiber optic cable would be installed on all replaced or reused structures. The typical configuration of conductor and fiber optic cable on replacement structures is shown in Figure 2-3c, Typical Structure Design. No transmission-level (i.e., greater than 200 kV) conductor would be installed or removed as part of the Proposed Project.

Conductor span lengths would vary depending upon topography, engineering, and site considerations. Spans would range from approximately 50 feet to 2,000 feet. In all segments, one span of OHGW would be installed between the substation racks and getaway or other replacement structures.

In Segments 1 and 2, the Proposed Project would replace all conductors and structures, some of which were originally installed in 1912. Existing subtransmission structures in these segments are generally double-circuited, with single-circuit structures dispersed along the alignment. The Project would include the removal of the existing aluminum conductor steel reinforced (ACSR) conductor and replacement with a new conductor along the full length of Segments 1 and 2.

In Segment 2, replacement TSPs would be designed as double-circuit structures, but only a single circuit (with ACCC ‘Dove’ or another type of conductor) would be installed on the double-circuit structures; depending on location along the alignment and the proximity of other transmission structures, the circuit would be installed on the west or east side of the replacement structures as part of the Proposed Project. The new conductor would be non-specular and would have a diameter of approximately 0.93 inches. At some locations, including where other transmission lines cross over the Segment 2 115 kV subtransmission line, shorter single-circuit replacement TSPs, LWS H-frames, or LWS poles may be installed to maintain adequate clearances between lines. OHGW may be installed on some temporary structures during construction for system protection. If either of the Cal City Options are incorporated in this segment, the conductor used in that section would be identical on both sides of the double-circuit structures and will be of the same type as described above.

In Segments 3N and 3S, a single circuit of conductor would be installed on the existing, replacement, and interset structures.

2.2.2. Distribution Line Components

No new distribution circuits would be installed as part of the Proposed Project. Distribution facilities share some of the existing subtransmission structures that are to be modified and relocated by the Proposed Project. Those existing distribution conductors and/or equipment may be either relocated or reinstalled on replacement structures, depending on final engineering.

2.2.3. Telecommunications

Telecommunications infrastructure (either OPGW or ADSS fiber optic cable) would be added to connect the I-C Project-associated substations in Segments 1 and 2 to SCE's telecommunications system. The telecommunications infrastructure would provide improved Supervisory Control and Data Acquisition (SCADA), protective relaying, data transmission, and telephone services for the Proposed Project and associated substation facilities. Along Segments 1 and 2, OPGW would be installed overhead on the replacement structures; additionally, ADSS fiber optic cable would be installed overhead on structures to connect to the Independence repeater station or underground to connect to the existing substation facilities. Where installed, OPGW also serves as lightning and grounding protection. There would be no telecommunications facilities constructed for Segments 3N or 3S.

New telecommunications cable and appurtenances would be installed along the length of Segments 1 and 2, and at Control, Coso, Haiwee, Inyokern, Kramer, and Randsburg Substations.

Where the Proposed Project's subtransmission lines are crossed overhead by other transmission lines, ADSS fiber optic cable may be installed below the conductor on the replacement structures instead of OPGW being installed at the top of the replacement structure; this would be necessary to maintain adequate clearances between the Proposed Project's infrastructure and the other transmission line's conductor.

At some substations and at the Independence amplifier site (see Section 2.2.3.1), ADSS fiber optic cable would be installed underground where the cable route enters and exits the substation.

Telecommunications cable appurtenances include splice boxes and risers, among other infrastructure. Risers are small-diameter (2-5 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, frequently of dimensions approximating 36 x 36 x 10-inches, attached to subtransmission structures with strapping.

Telecommunications-related modifications at the Independence telecommunications facility and at the existing substations would generally include the installation of equipment on existing rack structures; the installation of cable in new or existing underground cable raceways and/or ducts; and the installation of new, or replacement of, existing telecommunications infrastructure within existing buildings or in existing or new telecommunications cabinets. At some substations, fiber optic cable would be installed underground where the cable route enters and exits the substation.

2.2.3.1. Independence Telecommunications Tap

An approximately 2.5-mile-long fiber optic cable tap would be installed between Segment 1 and an existing third-party telecommunications facility in the community of Independence for amplification (see Figure 2-4, Independence Telecom Tap). The fiber optic cable tap would be installed overhead on approximately 60 new poles and underground as it enters the existing facility. Amplification equipment would be installed inside the existing facility and connected to the fiber optic cable tap; this equipment is necessary to maintain signal strength in the fiber optic cable line. New OPGW fiber optic cable would be approximately ½-inch in diameter and non-specular and would generally be installed overhead at the top of the replacement structures and new poles as shown in Figure 2-3c, Typical Structure Design.

2.2.4. Substation Modifications

No new substations are included in the Proposed Project. The following paragraphs describe modifications to existing substations that would be required as part of the Proposed Project.

2.2.4.1. Substation Modifications, Segments 1 and 2

Subtransmission-related work within Control, Coso, Haiwee, Inyokern, Kramer, and Randsburg Substations in Segments 1 and 2 would include disconnecting the existing conductor from existing substation equipment and connecting new conductor to existing substation equipment. Minor modifications to the existing racks at each of the substations may be required so that OHGW can be installed between the racks and the getaway structures. These minor modifications could include installation of new fittings to which the OHGW would be attached, or structural reinforcement of the existing racks. New and upgraded protection and control equipment would be installed within the control buildings at each of the substations.

Existing control cables between existing circuit breakers and the existing MEER/communication room/ telecommunications relay protection and control racks would be removed, and new bundled multi-conductor would be installed where necessary. The new control cable would be installed into existing cable trench and conduit systems within the substation. If a conduit cannot be re-used, then a new conduit would be installed between the equipment and cable trench or MEER building. New relays and relay racks would be installed into existing MEER/communication room/telecommunications buildings as required per the final engineering design.

Telecommunications-related work within the Control, Coso, Haiwee, Inyokern, Kramer and Randsburg Substations would include the installation of new terminal equipment, channel multiplexer equipment, equipment cabling, and other telecommunication equipment devices; these would be installed within the existing MEERs and/or communication rooms, or in existing or new communications cabinets, at the substations. This work would provide the required telecommunication circuit connection to subtransmission line protection relay equipment within the substations.

At Haiwee Substation, the proposed installation of fiber optic cable may require the replacement of approximately four wood poles and three wood pole H-frames on the tap lines that connect the subtransmission lines in Segment 1 to the substation. These poles and H-frames are owned by LADWP. The new poles and H-frames would be installed as described in Section 2.4.2.3.5, LWS Pole/LWS H-Frame Installation.

2.2.4.2. Substation Modifications, Segments 3N and 3S

At all existing substations in Segments 3N and 3S, new and upgraded protection and control equipment would be installed within the substations. These substations include Tortilla, Coolwater, and SEGS2.

2.2.5. Right-of-Way Requirements

The I-C Project would be built within existing or new ROWs, including easements, public ROWs, and existing SCE fee-owned property. The width of these ROWs varies over the length of the Proposed Project. Existing access roads and spur roads are primarily located within existing ROWs or covered under easements, are public roads, or are open roads on lands administered by the BLM.

2.2.5.1. Segment 1, ROW Requirements

The width of the existing subtransmission ROW within Segment 1 ranges from approximately 40 to 100 feet, with the majority being 75 to 87.5 feet. Some of the replacement structures in Segment 1 would be installed outside the existing corridor on which SCE has rights. In those areas, SCE would obtain new rights-of-way from the US Bureau of Land Management (BLM), the Bureau of Indian Affairs (BIA), the Department of Defense (DOD), the California State Lands Commission (CSLC), LADWP, or private landowners.

In addition, appropriate permits, licenses, and/or property rights would be obtained for flood control, railroad, and highway crossings. Temporary land rights (e.g., easements, permits, and license) may be required for access roads, construction work areas, pull and tension sites, helicopter landing zones, material yards and other construction-support areas during construction. This is subject to change based on final engineering and construction requirements.

Easement widths are based on facility types, final design, and the type of right to be acquired. Upgrading easements may include adding land rights, adding width to existing easements, improving or clarifying access or maintenance rights, etc. Upon final engineering and receipt of project approvals, SCE would need to confirm the necessary land rights and acquire rights for the Proposed Project.

2.2.5.2. Segment 2, ROW Requirements

The width of the existing subtransmission ROW within Segment 2 ranges from approximately 75 to 260 feet with the majority being 75 to 80 feet wide. In most cases, replacement structures in Segment 2 would be installed within the existing corridor on which SCE has rights, with the following exceptions:

- Existing rights on BLM-managed lands have expired and would be renegotiated.
- New rights would be obtained from Caltrans and counties for road crossings.
- Where the existing ROW is not adequate to support the Project, new and upgraded rights would be obtained from private landowners and others.

There is an existing SCE 220 kV transmission ROW and a separate 115 kV subtransmission ROW that overlap the proposed location of the I-C 115 kV subtransmission line.

The Cal City Option, the Cal City Sequoia Option, and the Southern Alignment Adjustment would have no effect on the width or rights required for the Segment 2 ROW.

2.2.5.3. Segments 3N and 3S ROW Requirements

Replacement and interset structures in Segments 3N and 3S would be installed within SCE's existing ROW. However, existing rights on BLM- and DOD-managed lands will be amended to reflect the Proposed Project ROW. Encroachment permits will need to be obtained from Caltrans and counties for highway/ roadway crossings. A license and/or railroad clearance will be obtained from railroads for any railroad crossings. New or upgraded rights may need to be obtained from private landowners. Due to the age of the lines, the original language of the easement rights may not properly capture the details related to the new and upgraded facilities being installed (e.g., communications circuits within the OPGW).

Railroad crossings will occur as follows:

- Segment 2 would have two crossings (one at Garlock Road just north of Randsburg; one at Highway 58 and Highway 395 at Kramer Junction.
- Segment 3N would have multiple crossings located at the Barstow rail switchyard located just west of Barstow.

2.3. Project Capacity

The Proposed Project is designed to remediate discrepancies; it is not designed to increase the capacity of SCE's electrical system. The ampacity[8] rating of the subtransmission lines will be based on the 2008 CAISO rating. Compared to the capacity offered by the existing conductor, it is expected that the new subtransmission conductor that would be installed in Segments 1, 2, 3N, and 3S would have a higher capacity. However, that higher capacity will be limited by existing substation equipment that is not

[8] Ampacity, or current carrying capacity, is the maximum amount of current that a conductor can safely carry without overheating and damaging the insulation or conductor.

proposed to be replaced. Therefore, in the absence of substation upgrades, only limited increased capacity would be realized from installation of the new subtransmission conductor. SCE has not identified any future increases in capacity or new generation projects that are planned or anticipated within its 10-year forecast window. The 10-year window is the typical planning horizon used by the CAISO in transmission planning.

If there are future generation projects that require additional transmission capacity, the owner of the generation project would need to submit a formal request to interconnect to SCE's system and a study funded by the interested generator would have to be completed. SCE does not currently anticipate proposing any future transmission or subtransmission development for any of the segments after implementation of the Proposed Project within the current 10-year forecast window.

2.4. Project Construction

2.4.1. Construction Features Common to All Project Components

Figures 2-5a and 2-5b (Typical Ground Disturbance Components) illustrate the typical features of Project construction and operation. Detailed maps of the entire I-C Project are provided in EIR Appendix 1. They illustrate the location of structures to be removed, structures to be installed, and access roads. The maps also show the following disturbance areas and project components:

- Boundaries of the existing ROW and the area of expanded ROW
- Demolition sites (where existing structures would be removed)
- General disturbance areas (where construction activities would occur)
- Pull sites (for installation of conductor on new structures)
- Structure work areas (where new structures would be installed)
- Wire setup (where reels of conductor would be staged in preparation for conductor pulling).

Neither the Cal City Option, the Cal City Sequoia Option, nor the Southern Alignment Adjustment would require adjustments to the total amounts of construction disturbance areas.

2.4.1.1. Material Yards

Construction of the Proposed Project would require the establishment of temporary material yards along the project ROW (see Figures 2-6a through 2-6f, Material Yards). Material yards would be used as a reporting location for workers, vehicle and equipment parking, material storage, and helicopter staging. The material yard may also have construction trailers for supervisory and clerical personnel. Material yards may be lit for staging and security. Normal maintenance and refueling of construction equipment would also be conducted at these yards. All refueling, which may include helicopters, and storage of fuels at material yards would be in accordance with the site-specific Hazardous Materials Management Plan (see Section 2.8, Applicant Proposed Measures (APMs) and APM-HAZ-1) and the Storm Water Pollution Prevention Plan (SWPPP).

Preparation of the material yard would include temporary perimeter fencing and depending on existing ground conditions at the site, grubbing and/or minor grading to provide a plane and dense surface for the application of gravel or crushed rock. Any land that may be disturbed at the material yard would be restored to preconstruction conditions or to the landowner's requirements following the completion of the I-C Project. Helicopter landing zones have been identified along the I-C Project alignment where a material yard is not proximate to a location where helicopter-assisted construction will be required.

Table 2-3, Potential Material Yard Locations, lists potential locations of yards that may be used during construction. Figures 2-6a through 2-6f show the possible locations for these material yards. Until final engineering provides specific construction scheduling, SCE anticipates that each material yard could be used at any time and for any duration within the overall schedule of the Proposed Project.

Table 2-3. Potential Material Yard Locations

Yard Name	Location	Condition	Area (acres)	Project Component
Segment 1				
1-1	US 395/Sunland Reservation Rd., Bishop	Disturbed	5.04	Segment 1
1-2	Sunland Ln., Bishop	Disturbed	3.64	Segment 1
1-4	Big Pine Dump Rd./Gregg Rd., Big Pine	Undisturbed	4.55	Segment 1
1-6	US 395/East Elna	Undisturbed	3.62	Segment 1
1-7	US 395/Aberdeen Station Rd.	Undisturbed	4.56	Segment 1
1-8	US 395/North Coloseum Rd.	Undisturbed	4.68	Segment 1
1-9	Mazourka Canyon Rd.	Undisturbed	4.73	Segment 1
1-10	Manzanar Reward Rd.	Disturbed/Asphalted	4.60	Segment 1
1-11	Substation Rd., Lone Pine	Disturbed	4.87	Segment 1
1-12	1800 Block S. Main St., Lone Pine	Disturbed	2.87	Segment 1
1-13	US 395/South of Diaz Lake	Disturbed	5.08	Segment 1
1-14	US 395	Disturbed	4.96	Segment 1
1-15	US 395, Cartago	Disturbed	4.95	Segment 1
1-16	SR-190, Olancha	Disturbed	4.54	Segment 1
1-17	East of Enchanted Lake Rd.	Undisturbed	5.02	Segment 1
1-18	Haiwee Substation	Disturbed	4.95	Segment 1
1-19	Gill Station Coso Rd.	Undisturbed	4.88	Segment 1
1-20	South of Little Lake	Undisturbed	9.27	Segment 1
1-21	US 395/Brown Rd.	Undisturbed	5.01	Segment 1
1-22	East of Inyokern Substation	Disturbed	1.64	Segment 1
Segment 2				
2-1A	SR-178 A	Undisturbed	4.73	Segment 2
2-1B	SR-178 B	Undisturbed	4.11	Segment 2
2-2	North Downs St	Asphalted/Paved	5.15	Segment 2
2-3	East Upjohn Ave	Disturbed	4.60	Segment 2
2-4A	South Brown Road A	Disturbed	4.86	Segment 2
2-4B	South Brown Road B	Disturbed	4.93	Segment 2
2-5	Garlock Rd	Disturbed	4.93	Segment 2
2-6	Garlock Rd	Disturbed	5.01	Segment 2
2-7A	Goler Rd B	Disturbed	4.85	Segment 2
2-8	Red Mountain Rd	Disturbed	5.01	Segment 2
2-9	Hoffman Rd	Disturbed	3.77	Segment 2
2-10A	US 395 A	Undisturbed	4.95	Segment 2
2-10B	US 395 B	Undisturbed	4.33	Segment 2
2-11A	AT&SF RR A	Disturbed	1.63	Segment 2
2-11B	AT&SF RR B	Undisturbed	4.72	Segment 2
2-12A	US 395 A	Disturbed	4.07	Segment 2
2-12B	US 395 B	Disturbed	4.94	Segment 2
Segment 3N				
3N-14A	Harper Lake Rd A	Undisturbed	4.07	Segment 3N
3N-14B	Harper Lake Rd B	Undisturbed	4.19	Segment 3N

Yard Name	Location	Condition	Area (acres)	Project Component
3N-15A	Harper Lake Rd	Undisturbed	3.82	Segment 3N
3N-16A	Rainbow Ranch Rd A	Undisturbed	4.78	Segment 3N
3N-16B	Rainbow Ranch Rd B	Disturbed	4.76	Segment 3N
3N-17	Irwin Road	Disturbed	4.76	Segment 3N
3N-18	North Frontage Rd	Disturbed	5.22	Segment 3N
3N-19	County Rd	Undisturbed	4.74	Segment 3N
Segment 3S				
3S-13A	US 395 A	Undisturbed	2.60	Segment 3S
3S-13B	US 395 B	Undisturbed	3.37	Segment 3S
3S-20	Harper Lake Rd	Undisturbed	5.01	Segment 3N
3S-21	Hinkley Rd	Undisturbed	5.05	Segment 3S
3S-22	Agate Rd	Undisturbed	5.16	Segment 3S
3S-23	Tortilla Substation	Undisturbed	5.22	Segment 3S
3S-24	Ord Mountain Rd	Undisturbed	4.95	Segment 3S
3S-25	Santa Fe St	Disturbed	5.49	Segment 3S
3S-26	Coolwater (Ongen) Substation	Disturbed	4.67	Segment 3S

Source: SCE, PEA Table 3.7-1. Updated with PEA Deficiency ED Data Request - 007, Response Date: 4/13/2021 and SCE, 2024.

Typically, each material yard would be approximately 1 to 5 acres in size, depending on land availability and intended use. Preparation of the material yard would include temporary perimeter fencing, and depending on existing ground conditions at the site, grubbing and/or minor grading may be required to provide a plane and dense surface for the application of gravel or crushed rock. Any land that may be disturbed at the material yard would be returned to preconstruction conditions or left in its modified condition, if requested by the landowner following the completion of the Proposed Project.

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

Materials commonly stored at the material yards would include, but not be limited to, construction trailers, construction equipment, portable sanitation facilities, steel bundles, steel/wood poles, conductor/OHGW reels, OPGW/ADSS reels, hardware, insulators, cross arms, signage, consumables (such as fuel and filler compound), waste materials for salvaging, recycling, or disposal, and SWPPP Best Management Practices (BMP) materials such as straw wattles, gravel rolls, and silt fences.

A majority of materials associated with the construction efforts would be delivered by truck to designated material yards, while some materials may be delivered directly to the temporary subtransmission construction areas described in Section 2.4.1.2, Work Areas.

2.4.1.2. Work Areas

Section 2.4.5, Land Disturbance Summary includes the estimated land areas that will be permanently disturbed and temporarily impacted during construction and subsequently restored. Tables 2-5 through 2-9 in Section 2.4.5.1 provide a summary of the land disturbance areas for construction of the subtransmission lines, substations, telecommunications (amplifier site), and access and spur road construction.

The laydown/work areas for each structure location would first be graded and/or cleared of vegetation as required to provide a reasonably level and vegetation-free surface for structure installation. Sites would be graded such that water would run toward the direction of the natural drainage and as directed by the

SWPPP requirements. In addition, drainage would be designed to prevent ponding and erosive water flows that could cause damage to footings or poles. The graded area would be compacted to at least 90 percent relative density and would be capable of supporting heavy vehicular traffic.

Erection of the structures may also require establishment of a temporary crane pad. The crane pad would typically occupy an area of approximately 50 feet by 50 feet and be located adjacent to each applicable structure within the laydown/work area used for structure assembly. The pad may be cleared of vegetation and/or graded as necessary to provide a level surface for crane operation.

Benching may be required to provide access for footing construction, assembly, erection, and wire stringing activities during line construction. Benching is a technique in which an earth moving vehicle excavates a terraced access to structure locations in extremely steep and rugged terrain. Benching may also be used on an as-needed basis to help ensure the safety of personnel during construction activities. SCE does not foresee the need for benching as part of the Proposed Project; however, the physical environment in which the Proposed Project would be constructed is dynamic.

2.4.1.3. Construction Lighting

Some activities may require lighting for safety. Any necessary lighting would be confined to an individual work area and would be temporary in nature. Material yards may be lit for staging and security; this lighting would be directed internally and on-site. Lighting for night work will be dictated by several factors, including the size of the work area and the scope of the work. Larger work areas will typically require portable light towers, which include their own power source. In smaller work areas, vehicle mounted or smaller portable lighting equipment that are powered by a separate generator are typically used. Both types of lights are easily maneuverable, can be mobilized quickly, and allow light to be focused in a specific area.

2.4.1.4. Access Roads and Spur Roads

SCE classifies the subtransmission line roads into two groups: access roads and spur roads. Access roads are through roads that run between tower sites along a ROW and serve as the main transportation route along line ROWs. Spur roads are roads that lead from access roads and terminate at one or more structure sites. Construction and operation and maintenance crews would access the Proposed Project via a network of access roads. The typical subtransmission access consists of a network of unpaved roads accessed from paved public and private roads.

No new permanent access roads would be developed as part of the I-C Project. In some locations, new permanent spur roads may be constructed from existing access roads to replacement structures. Approximately 306 miles of existing access and spur roads would be employed for construction of the I-C Project. At present, all 306 miles are projected to require minor rehabilitation work, including regrading and repairing the existing roadbed. Access 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 minor rehabilitation, vegetation within the road prism would be trimmed or removed to the width of the prism.

The extent and scope of this rehabilitation is unknown at this time, as field conditions along the Proposed Project alignment are subject to change. The types of additional 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, as well as to prevent road damage due to 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.

SCE does not anticipate a need for retaining walls to be installed. If, during the final engineering process, the need for retaining walls is identified, the location, length, height, and type of such walls would be communicated to the CPUC. If the need for extensive rehabilitation is identified, a Minor Project Refinement and associated environmental effects analysis may be developed and submitted to the CPUC.

Where existing access or spur roads cross culverted waterways, temporary plating or matting may be laid over the roadway to protect the culverts and to support the movement of heavy construction equipment. In some instances, a temporary bridge may be placed over a culverted or bridged waterway if plating or matting would not adequately protect the culverts or if an existing bridge is not suitable for 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.

2.4.1.5. Helicopter Use During Construction

Helicopters would be used to support construction activities. Helicopter use supporting construction may include, but is not limited to, areas where access is limited (e.g., no suitable access road, limited construction area to facilitate on-site structure assembly, and/or there are environmental constraints to accessing the project area with standard construction vehicles and equipment) or where system outage constraints are a factor.

SCE currently anticipates helicopters would be utilized in support of the construction of the I-C Project, to include the installation of replacement structures, and removal of existing structures where overland access is not feasible. Project related helicopter activities may include transportation of construction workers, delivery of equipment and materials to structure sites, structure placement, structure removal, hardware installation, marker ball installation (if applicable), and conductor and fiber optic cable stringing operations. SCE would consider IEEE Standards 951-1966, Guide to the Assembly and Erection of Metal Transmission Structures, and 524-2003, Guide to the Installation of Overhead Transmission Line Conductors in the construction of the Proposed Project.

The dimensions of the construction work areas required for the helicopter take-off and landing zones (HLZs) will vary depending on the operations required and location selected for an estimated 5landing sites. SCE may also use the Material Yards as HLZs depending on their location and proximity to operations. Helicopters may be used in other areas to facilitate construction of the I-C Project as the exact method of construction employed and the sequence by which construction tasks occur would be dependent on final engineering, contract award, conditions of permits, and contractor preference.

Helicopter construction activities would typically be based out of material yards and maintenance sites that are in close proximity to conductor or OPGW/ADSS pulling, tensioning, and splice sites, and/or within previously disturbed areas near construction sites. In addition, helicopters would be able to land within SCE ROWs, which could include landing on access or spur roads. At night or during off days, for safety and security concerns, helicopters and their associated support vehicles and equipment may be based at a local airport(s) or airstrips; helicopters may also be refueled at local airports or airstrips. Helicopter material yards would be sited based upon a variety of factors, including the optimization of flight time to work locations. SCE anticipates using multiple locations listed in Table 2-3, Potential Material Yard Locations, as the HLZs or helicopter staging yards for the Proposed Project.

Flight paths would be determined immediately prior to construction by the helicopter contractor. Flight paths would be filed with the appropriate authorities, where required. As examples, SCE anticipates that medium-duty helicopters would be used for structure removal and installation activities, and light-duty helicopters would be used for conductor, OPGW, and marker ball installation.

2.4.1.6. Vegetation Clearance

As the first step of the construction process, road rehabilitation activities would take place. These activities include vegetation trimming and/or removal within the 18-foot-wide access or spur road prism as necessary. Vegetation would also be trimmed and/or removed as needed at stringing sites, construction work areas, material yards, and helicopter landing zones. Vegetation removal in some areas would consist of "brushing" (i.e., shrubs and other low-lying vegetation would be trimmed and/or removed within the 18-foot-wide access or spur road prism as necessary).

Vegetation would be trimmed within overland travel areas while leaving the root structure intact, or vehicles would drive over the existing vegetation (overland travel). In some locations, temporary matting may be placed on the surface to facilitate access to a work location.

Brushing 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.

Trees or portions of trees that encroach upon the 18-foot-wide access and spur road prism may be removed to facilitate the safe movement of construction equipment. Similarly, trees or portions of trees within or adjacent to stringing sites, construction laydown areas, construction work areas, material yards, and helicopter landing zones may be trimmed or removed to permit the safe operation of construction equipment; these areas would be preferentially selected to minimize the trimming or removal of trees.

2.4.1.7. Erosion and Sediment Control and Pollution Prevention

Construction of the Proposed Project would disturb a surface area greater than one acre, so SCE would apply for coverage under a General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order 2022-057-DWQ from the State Water Resources Control Board (SWRCB). As part of the permitting requirements, SCE or its contractor would prepare a Storm Water Pollution Prevention Plan (SWPPP) that includes project information, design features, monitoring and reporting procedures, and BMPs. Commonly used BMPs are storm water runoff quality control measures (e.g., boundary protection, erosion and sediment controls, etc.), good housekeeping, dewatering procedures, and concrete waste management. The SWPPP would be based on final engineering design and would identify the BMPs necessary to control potential contamination resulting from all project components.

2.4.1.8. Dust Control

During construction, migration of fugitive dust from the construction sites would be limited by control measures set forth by the Great Basin Unified Air Pollution Control District, Eastern Kern Air Pollution Control District, and the Mojave Desert Air Quality Management District. These measures may include the use of water trucks and other dust control measures, including the application of non-toxic soil binders. The sources of water to be used for dust control would be from existing surface water and groundwater fed supplies.

2.4.1.9. Water Usage and Water Sources

Water would be used during construction to support construction activities related to fugitive dust mitigation, vegetation restoration, and soil compaction/concrete placement for the Proposed Project. SCE estimates it would use up to a maximum of 3,100 acre-feet of water over the construction period and would likely be less due to refinements in construction scheduling during final engineering. This amounts to approximately 1,000 acre-feet during each calendar year of construction. This estimate was based on assumptions related to the area of land disturbance, project duration, seasonal timing of work (which would result in varying amounts of evapotranspiration), type of construction activity, and roadway access/ conditions.

The water supply for construction activities may be obtained from existing surface water and groundwater fed supplies, through existing entitlements and resources located near the Proposed Project.

2.4.1.10. Hazardous Materials

Construction of the Proposed Project would require the limited use of hazardous materials, such as fuels, lubricants, and cleaning solvents. All hazardous materials would be stored, handled, and used in accordance with applicable regulations. Safety Data Sheets would be made available at the construction site for all crew workers.

Because of the anticipated volume of hazardous liquid materials, such as fuel, which would be stored and dispensed at material yards, SCE has committed to implementing APM HAZ-1 (Prepare a Hazardous Materials Management Plan) and APM HAZ-2 (Prepare a Soil Management Plan) (see Section 2.8) during project construction.

2.4.1.11. Reusable, Recyclable, and Waste Material Management

Construction of the Proposed Project would result in generation of various waste materials, including wood, metal, soil, vegetation, and sanitation waste (portable toilets). Sanitation waste (i.e., human generated waste) would be disposed of in accordance with applicable sanitation waste management practices. Material from existing infrastructure that would be removed as part of the Proposed Project such as conductor, steel, concrete, and other debris, would be temporarily stored in one or more material yards as the material awaits salvage, recycling, and/or disposal. Approximately 4,456 tons of metal (consisting of steel from existing towers and metals from existing conductor) would be removed as part of the Proposed Project, as would approximately 114 tons of concrete from the foundations of existing towers would be disposed of as waste. Additionally, approximately 2.6 million pounds of conductor, and approximately 6.3 million pounds of lattice steel structures would be salvaged or recycled.

The existing wood poles removed under the I-C Project would be returned to a material yard, and either disposed of in a Class I hazardous waste landfill, and/or disposed of in the lined portion of a Regional Water Quality Control Board (RWQCB)-certified landfill. SCE estimates that the Project would remove approximately 384 wood poles, each with an average weight of 800 pounds, equivalent to 118.9 cubic yards of treated wood waste.

Drilling muds that may be required for installation of underground fiber optic lines would be collected and disposed of off-site at an appropriately licensed waste facility. Material excavated for the I-C Project would either be used as fill, backfill for replacement TSPs or LWS poles or other excavations, and/or disposed of off-site at an appropriately licensed waste facility. If contaminated material is encountered during excavation, it would be managed per the Project's Soil Management Plan (see Section 2.8, Applicant Proposed Measures APM-HAZ-2). Excavation material estimates are included in Section 2.4.6.

2.4.1.12. Geotechnical Studies

SCE has completed 47 geotechnical borings to support the preliminary design of the Proposed Project. Prior to the start of construction, additional geotechnical investigations would be initiated to compile information required to complete final engineering. The results of these studies would provide an evaluation of the depth to the water table, liquefaction potential, physical properties of subsurface soils, slope stability, and the presence of hazardous materials and common contaminants; the studies may also include recommendations for the final engineering design.

2.4.1.13. Cleanup and Post-Construction Restoration

SCE would clean up all areas that would be temporarily disturbed by construction of the Proposed Project (which may include the material yards, construction work areas, and stringing sites, among others) to as

close to pre-construction conditions as feasible, or to the conditions agreed upon between the landowner and SCE following the completion of construction of the Proposed Project.

SCE has committed to implementing APM BIO-RES-1, Habitat Restoration and Revegetation Plan (see Section 2.8) to address restoration and revegetation within sensitive habitats to be implemented after construction is complete.

2.4.2. 115 kV Subtransmission Line Installation and Removal

The following sections describe the above-ground construction activities associated with installing the subtransmission lines and the above-ground portions of the telecommunications line infrastructure for the Proposed Project.

2.4.2.1. Pull and Tension Sites

The pull and tension sites require level areas to allow for safe positioning of the equipment and, when possible, these locations would be located on existing roads and level areas to minimize the need for grading. Approximately 458 pull and tension sites and 63 conductor snub sites and splice areas are proposed. Given the topography of most of the I-C corridor, the need for grading would be minimal. The final number and location of the pull and tension sites would be determined upon final engineering. The approximate area needed for pull and tension sites associated with wire installation is variable and depends upon terrain.

Wire pulls are 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 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 set-up locations. On relatively straight alignments, typical wire pulls occur approximately every 13,000 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 shorter. Generally, pulling locations and equipment set-ups would be in direct line with the direction of the overhead conductors and established at a distance equal to approximately three times the height of the adjacent structure.

Pull and tension sites may also be utilized for splicing and field snubbing of the conductors. Pull and tension sites associated with the Proposed Project would be temporary and the land would be restored to its previous condition following completion of pulling and splicing activities. Wire stringing operations are discussed in detail in Section 2.4.2.4.1.

2.4.2.2. Telecommunications Pull and Tension Sites

Telecommunications pull and tension sites would generally be co-located within the other pull and tension sites. Where telecommunications cable is installed in a new alignment (e.g., the spur off Segment 1 for the Independence Amplifier telecommunications tap line), telecommunications pull and tension sites of approximately 60 feet by 30 feet would be established.

The pull and tension sites require level areas to allow for safe positioning of the equipment. Existing level areas and existing roads would be used to minimize the need for grading when possible. Equipment used to pull the telecommunication line would be similar to the equipment described previously for the subtransmission lines. Within the approximately 60-foot by 30-foot work area, two splice trucks with pulling equipment would be required to complete the splicing.

Approximately 12 vaults or pull boxes would be installed under the Proposed Project at transmission line crossings. Approximately 3 pull boxes would be installed under the Proposed Project for the Independence amplifier telecommunication tap line.

2.4.2.3. Pole/Tower Installation and Removal

Structure installation and structure removal would require the use of a variety of equipment as presented in Section 2.4.8. Construction vehicles and equipment would be moved to pole installation or removal sites along the existing subtransmission access road network and spur roads, over new spur roads, overland, or flown to the installation or removal sites by helicopter.

Section 2.4.8, Construction Workforce and Equipment, describes the anticipated equipment and work-force required for the Proposed Project. The construction sequence for each segment is described in Section 2.4.9.

Foundation Installation

TSPs would be either direct buried, attached to a concrete foundation, or installed on an engineered micro-pile foundation. LWS poles would be direct-buried and extend to a height of approximately 75 to 124 feet above ground. TSPs would be either installed on a drilled, poured-in-place, concrete footing that would form the structure foundation, installed on drilled micropiles, or direct-buried. If a single concrete footing is used, the hole would be drilled using truck or track-mounted excavators. Excavated material would be used as described in Section 2.4.1.10, Reusable, Recyclable, and Waste Material Management. No blasting would be necessary for foundation installation. Each TSP would use approximately 5 to 56 cubic yards of concrete.

Following excavation of the foundation footings, 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 foundations typically require an excavated hole approximately 4 feet to 8 feet in diameter and approximately 10 feet to 30 feet deep. TSPs would require approximately 5 to 56 cubic yards of concrete delivered to each structure location.

Where necessary, foundations may also be installed utilizing micropiles up to a depth of approximately 40 feet. Installation of micropiles would require the drilling of several smaller diameter holes (approximately 7 to 10, 8-inch holes) for each footing. The holes would be drilled by a drilling rig or drilling attachment on an excavator or similar equipment.

After drilling all the holes, each hole would be flushed with water or air to remove drill cuttings and loose material. Micropiles would then be installed by placing rebar in each hole with cement grout injected through grout tubes at the lowest point of each micropile, and the hole filled until viscous grout reaches the top of the casing. The micropiles would then be tied together, to act as a single unit foundation, in a reinforced concrete cap. Grout could be brought to each tower site dry and mixed at the site, requiring a reduced amount of concrete required and associated transportation requirements and limitations (delivery within 90 minutes to 2 hours).

In some locations, TSPs may be direct buried. In these locations, a hole would be excavated using either an auger or excavated with a backhoe. Excavated material would be used as described in Section 2.4.1.10, Reusable, Recyclable, and Waste Material Management.

Conventional construction techniques would generally be used as described above for new foundation installation; no alternative foundation installation methods are anticipated to be used. In certain cases, equipment and material may be deposited at structure sites using helicopters or by workers on foot, and crews may prepare the foundations using hand labor assisted by hydraulic or pneumatic equipment, or other methods.

During construction, existing concrete supply facilities would be used where feasible. Commercial concrete plants exist in the vicinity of Bishop, Ridgecrest, and Barstow. However, due to the remote location of many structure locations, a temporary concrete batch plant may be set up in one or more established material yards if required to support operations. Equipment would include a central mixer unit (drum type); three silos for injecting concrete additives, fly ash, and cement; a water tank; portable pumps; a pneumatic injector; and a loader for handling concrete additives not in the silos. Dust emissions would be controlled by watering the area and by sealing the silos and transferring the fine particulates pneumatically between the silos and the mixers.

Notifications Prior to Drilling and Excavation Activities

Prior to drilling for foundations, SCE or its Contractor would contact Underground Service Alert (USA) to identify any existing underground utilities in the construction zone. Construction of foundations and other below-ground components of the Project would begin with the survey of existing underground utilities along the proposed underground and excavation locations. SCE would notify all applicable utilities via USA to locate and mark existing utilities and conduct exploratory excavations (potholing) as necessary to verify the location of existing utilities. SCE would apply for and obtain ministerial encroachment permits for trenching in public streets, as required.

Groundwater/Slurry Management

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. Drilling mud/slurries would be collected in a pit adjacent to the foundation or vacuumed directly into a truck to be reused or disposed of at an appropriate off-site disposal facility.

TSP Installation

TSP structures typically consist of multiple sections. The TSP sections would be placed in temporary laydown areas at each pole location. Depending on conditions at the time of construction, the top sections may come pre-configured, may be configured on the ground, or configured after pole installation with the necessary cross arms, 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 micropile foundation. If existing terrain around the TSP location is not suitable to safely support crane activities, a temporary crane pad would be established within the construction work area. Alternately, 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 in order 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 prior to setting the poles. Each TSP in a multi-pole TSP structure would be installed as described above.

LWS Pole/LWS H-Frame/Direct-Buried TSP Installation

Most LWS poles would be installed using a direct-buried approach. Direct-buried LWS poles, direct-buried TSPs, wood poles, and wood multipole structures would require a hole to be excavated using either an auger or excavated with a backhoe. In some locations, corrugated steel or plastic forms may be placed to stabilize the excavation walls prior to installation of the pole. Excavated material would be used as described in Section 2.4.1.10, Reusable, Recyclable, and Waste Material Management. LWS poles and TSPs consist of separate base and top sections and may be placed in the construction work area at each pole location. Depending on conditions at the time of construction, the top sections may come preconfigured, may be configured on the ground, or configured after pole installation with the necessary cross arms, insulators, and wire-stringing hardware. The LWS poles and direct-bury TSPs would then be installed in the holes, typically by a line truck with an attached boom. 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 prior to setting the poles in place within the holes. LWS poles may also 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. Following 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 utilized for installation of the vertical components.

Guys are typically used when LWS poles or LWS H-frames are located on angles or corners to provide support to the poles. Guys 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 for 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 across a roadway would be avoided where feasible.

Federal Aviation Administration Requirements

SCE would file Federal Aviation Administration (FAA) notifications for new structures, as required. The FAA would conduct its own analysis and may recommend no changes to the design of the proposed structures; or may request redesigning any proposed structures near an airport to reduce the height of such structures or mark the structures, including the addition of aviation lighting or placement of marker balls on wire spans.

SCE would evaluate the FAA recommendations for reasonableness and feasibility, and in accordance with Title 14, Part 77 of the Code of Federal Regulations (CFR), SCE may petition the FAA for a discretionary review of its determination to address any issues with the FAA determination. FAA agency determinations for permanent structures typically are valid for 18 months, and, therefore, such notifications would be filed upon completion of final engineering and before construction commences. All proposed construction activities would be performed at a distance from airport activity sufficient to minimize safety concerns to construction personnel.

The proposed average TSP would be approximately 93 feet tall, and the average LWS will be approximately 90 feet tall. No proposed structures would be taller than 200 feet. However, should any subtransmission poles/towers exceed heights of 200 feet, SCE would notify the Federal Aviation Administration (FAA), as would be required for subtransmission structures located in the vicinity of airports.

SCE has completed a preliminary study to identify proposed structure locations that are likely to require filing with the FAA due to their proximity to an airport. The preliminary study does not forecast the final FAA determination related to any required mitigations to alleviate potential obstruction determinations. The FAA filing will occur after final engineering design is completed.

SCE will consult with the FAA and consider recommendations, to the extent feasible. Typical recommendations include, but are not limited to, the following: installation of marker balls on the proposed OPGW between structures), and/or installation of lighting on structures. Generally, marking or lighting is recommended by the FAA for those spans or structures that exceed 200 feet in height above ground level (AGL); however, marking or lighting may be recommended for spans and structures that are less than 200 feet AGL, but located within close proximity to an airport or other high-density aviation environment. FAA recommendations of guidelines and standards for marking and lighting are included in Advisory Circular AC 70/7460-1L.

2.4.2.4. Overhead Conductor and Cable Installation

Wire Stringing and Splicing

Wire stringing activities would be in accordance with SCE common practices and similar process methods detailed in the 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 prior to the initiation of wire stringing activities. Advanced planning is required to determine circuit outages, pulling times, and safety protocols to ensure that the safe installation of wire is accomplished.

Wire stringing includes all activities associated with the installation of the primary conductors onto the proposed subtransmission line structures and the existing racks at substations. These activities include the installation of conductor, OHGW, OPGW/ADSS fiber optic cable, insulators, stringing sheaves (rollers or travelers), vibration dampeners, weights, suspension, and dead-end hardware assemblies for the entire length of the route.

Each stringing operation consists of a puller set-up positioned at one end, and a tensioner set-up with wire reel stand truck positioned at the other end of the wire pull. Where the existing conductor is spliced, permanent splices may be removed, and temporary splices would be installed; this is necessary prior to conductor removal because permanent splices may not easily travel through the rollers. Splicing set-up locations are used to remove temporary pulling splices and install permanent splices once the conductor is strung through the rollers located on each structure. 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.

The following five steps describe typical wire stringing activities:

- Step 1 – Planning: Develop a wire stringing plan to determine the sequence of wire pulls and the set-up locations for the wire pull/tensioning/splicing equipment.
- Step 2(a) – Sock Line Threading, Ground Access: A bucket truck is typically used to install a lightweight sock line from structure to structure. The sock line would be threaded through the wire rollers in order 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.
- Step 2(b) – Sock Line Threading, Helicopter Access: In areas where a bucket truck is unable to install a lightweight sock line, a helicopter would fly the lightweight sock line from structure to structure. The sock line would be threaded through the wire rollers in order to engage a camlock device that would secure the pulling sock in the roller. This threading process would continue between all structures through the roller of a particular set of spans selected for a conductor pull.
- Step 3 – 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.
- Step 4 – Splicing, Sagging, and Dead-Ending: Once the conductor is pulled in, if necessary, all mid-span splicing would be performed. Once the splicing has been completed, the conductor would be sagged to proper tension and dead-ended to structures.
- Step 5 – Clipping-In: After the conductor is dead-ended, the conductors would be secured to all tangent structures in a process called clipping-in.

Guard Structures

Guard structures are temporary facilities that would typically be installed at transportation, flood control, and utility crossings for wire stringing/removal activities. These structures are designed to stop the movement of a conductor should it momentarily drop below a conventional stringing height. SCE estimates that 287 guard structures may need to be temporarily installed for the Proposed Project.

Typical guard structures are standard wood poles. Typically, burial diameters range from 12 to 18 inches and burial depths range from 5 to 7 feet for each pole. 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. In some cases, the wood poles could be substituted with the use of specifically equipped boom trucks, or, at highway crossings, temporary netting could be installed if required. The guard structures would be removed after the conductor is secured into place.

For crossings of railroads and highways, SCE would work closely with the applicable agencies to secure the necessary permits to string conductor over the applicable infrastructure and to install guard structures as required by the agency.

SCE anticipates that temporary, short-term lane or road closures would be necessary at each location where the existing and new alignments cross public roads, regardless of the presence of guard structures. These temporary, short-term closures would be required during the removal of existing conductor that is currently emplaced above a given public road and during the installation of new conductor over a given public road. In locations where the existing or new project alignment is located parallel and immediately adjacent to a public road, one lane of travel may be closed temporarily, with the other lane(s) remaining open and alternating one-way traffic flow controlled by flaggers. This would be implemented if such lane closure and maintenance of traffic flow can be accomplished while maintaining the safety of the traveling public and SCE construction crews, and if detour routes for local traffic are not available.

2.4.2.5. Other Facility Modifications

Due to the distance between the Control Substation and Haiwee Substation, an amplifier would need to be located between these two substations to maintain strength of telecommunications signal. An existing telecommunications facility in the community of Independence has been identified as a potential location for installation of the amplification equipment (see map in Figure 2-4, Independence Telecom Tap).

Where Segment 1 crosses Mazourka Canyon Road in Inyo County, the OPGW would be routed down a TSP structure to a splice box. ADSS fiber optic cable would then run from the splice box overhead on new poles to be located on the north side of the road. The new poles would be installed as described in Section 2.4.2.3.5, LWS Pole/LWS H-Frame Installation.

2.4.3. Distribution Line Modifications

Distribution circuits are installed on a few existing subtransmission structures. No new distribution circuits would be installed as part of the I-C Project. The existing distribution circuits and appurtenances would either be reattached or replaced with new distribution conductor and appurtenances installed on the replacement structures. There are no distribution poles included in the Proposed Project.

2.4.4. Telecommunications Equipment Installation

Telecommunications-related modifications at Control, Coso, Haiwee, Inyokern, Randsburg, and Kramer Substations would generally include the replacement of protection equipment on existing subtransmission rack structures, the installation of fiber optic cable in new or existing cable raceways or conduit, and the installation of new or replacement of existing telecommunications infrastructure within existing MEERs, telecommunication buildings, telecommunication rooms, control room, or within existing or new telecommunications cabinets.

SCE would install new terminal equipment, channel multiplexer equipment, equipment cabling, and other telecommunication equipment devices within the existing MEERs, telecommunications buildings, telecommunications rooms, or control building, or within existing communications cabinets at Control, Coso, Inyokern, Randsburg, and Kramer Substations; a new communication cabinet would be installed at Haiwee Substation. This work would provide the required telecommunication circuit connection for subtransmission line protection relay equipment within the substations. SCE would also install cabling between existing breakers to the existing MEER/communication room/telecommunications cabinet at each of the substations and install new relays and relay racks in those facilities.

The following sections describe the below ground construction activities associated with installing fiber optic cable for the Proposed Project. No electrical conductor would be installed underground. Overhead fiber optic cable would be installed as described in Section 2.4.2.4, Overhead Conductor and Cable Installation.

2.4.4.1. Underground Fiber Optic Cable Installation

Short sections of fiber optic cable would be installed underground in the vicinity of Control, Coso, Haiwee, Kramer, Inyokern, and Randsburg Substations. See Figures 2-7a through 2-7f, Telecommunications Underground Routes. Fiber optic cable would transition from an overhead configuration to an underground configuration through risers installed on TSPs or LWS poles (known as getaway poles). Ground disturbance associated with installation of underground fiber optic cables is addressed in Section 2.4.5.

Where existing conduit or cable raceways within the substations are available, underground fiber optic cable would be installed in these 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 MEERs/telecommunications rooms/telecommunications cabinets within or adjacent to 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. PVC conduit would be placed in the trench and covered with a minimum of approximately 30 inches of concrete slurry, then backfilled and compacted, see Figure 2-8, SCE Telecommunications Conduit Install Details. The fiber optic cable would be installed in an innerduct that protects and identifies 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 pull boxes at each end of the underground conduit. For each pull box, a hole is excavated approximately 8 feet deep by approximately 6 feet long by approximately 6 feet wide. The pull box would be lowered into place, 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 pull boxes and splice the cable segments, where it would transition from underground to overhead. Approximately 35 vaults or pull boxes would be installed under the Proposed Project at or in the vicinity of the existing substations.

Trenchless Techniques: Microtunnel, Jack-and-Bore and Horizontal Directional Drilling

In most cases, unless alternate methods are required, telecommunications duct banks would be installed using open-cut trenching techniques. In the event that trenchless techniques are required, SCE would utilize one of the methods described in the following subsections. Typical stormwater/water quality BMPs would be installed and would be implemented to prevent water quality impacts during the execution of trenchless techniques.

Jack-and-Bore

SCE may use a horizontal boring (referred to as jack-and-bore) construction technique to install telecommunications conduit at locations along the underground route where open-cut trenching may not be permitted or may not be otherwise feasible or preferred, such as at highway crossings. It is anticipated that the jack-and-bore construction technique would be used to install fiber optic cable beneath SR-178 south of Inyokern Substation in Segment 2. Additional locations may be identified during final engineering or construction. The need to dewater the sending and receiving pits is unlikely. The depth to groundwater is likely to exceed 100 feet in the area around Inyokern Substation.

Jack-and-bore is an augering operation that simultaneously pushes a casing under an obstacle and removes the spoil inside the casing with a rotating auger. Boring operations would begin with excavating bore pits at the sending and receiving ends of the bore. Sending and receiving pits would typically measure approximately 20 feet wide by 40 feet long, with depths of between 10 and 20 feet, depending on the facilities that would be crossed. Sending and receiving pits would be shored per California requirements [CCR Title 8, §1541.1]. Following the duct bank installation, the bore pits would be backfilled using native material, and the duct bank would be covered with at least 36 inches of native fill. Soil not used for backfill would be handled as described in Section 2.4.1.10, Reusable, Recyclable, and Waste Material Management.

After establishing the bore pits, boring equipment would be delivered to the site and then installed into the bore pit at the sending end. Jack-and-bore crossings involve pushing or boring a steel casing through the earth and under the obstacle being crossed. Depending on soil conditions, water is often used to lubricate the auger during the boring process. The casings would typically be installed at least 3 to 4 feet below the obstacle, or as required by the relevant permitting agency. Once the casing is in place, the conduit would be installed within the casing by using spacers to hold them in place, and then the remaining space would be backfilled with a slurry mix. The casing would be left in place to protect the conduit once it has been installed.

Horizontal Directional Drilling

Horizontal directional drilling (HDD) technology may also be used in situations where the jack-and-bore method is not the preferred technology. HDD is an underground boring technique that uses hydraulically powered horizontal drilling equipment. It involves drilling along a vertical arc that passes beneath a surface or shallow-subsurface feature. HDD technology utilizes lubrication containing water and bentonite clay (i.e., drilling mud) to aid the drilling, coat the walls of the bore hole, and maintain the open hole. The HDD technology uses a hydraulically powered horizontal drilling rig supported by a drilling mud tank and a power unit for the hydraulic pumps and mud pumps. A variable-angle drilling unit would initially be adjusted to the proper design angle for the particular drill. A 6- to 8-inch-diameter drill would typically be used.

The first step would be to drill a fluid-filled pilot bore. The first and smallest of the cutting heads would begin the pilot hole at the surveyed entry point. The first section of the drill stem has an articulating joint near the drill-cutting head that the HDD operator can control. Successive drill stem sections would be added as the drill head bores under the crossing. The drill head would then be articulated slightly by the operator to follow a designed path under the crossing and climb upward toward the exit point. Once the pilot hole is completed, a succession of larger cutting heads and reamers would be pulled and pushed through the bore hole until it is the appropriate size for the steel or HDPE casing. Once the casing is in place, ducts would be installed within the casing using spacers to maintain the needed separation, and then the remaining space would be backfilled with a slurry mix. The fiber optic cable would then be pulled through the ducts.

Infrequently, the geologic strata above the bore may be weaker than anticipated and/or unconsolidated. As the HDD passes under these locations, the high pressure of the drilling mud may result in a fracture of these strata, allowing drilling mud to rise to the surface. This situation is termed a “frac-out” and is usually resolved by reducing the mud system pressure or increasing the mud viscosity. If a frac-out occurs, the

boring operation would be stopped immediately, and a frac-out contingency plan would be implemented to contain and remove the drilling mud. Drilling muds would be handled in accordance with federal and state regulations, and disposed of as described in Section 2.4.1.11, Reusable, Recyclable, and Waste Material Management.

2.4.5. Ground Disturbance Summary

Ground disturbance for the Proposed Project would include all areas affected by construction. It is estimated that the total permanent land disturbance for the Proposed Project would be approximately 1,755 acres. It is estimated that the Proposed Project would temporarily disturb and restore approximately 2,172 acres. The estimated amount of land disturbance for each Project component is summarized in Table 2-4, Summary of Estimated Ground Disturbance, which summarizes the total disturbance acreage from Tables 2-5 through 2-8, which address subtransmission lines, substations, telecommunications amplifier site, and access and spur roads, respectively.

Table 2-4. Summary of Estimated Ground Disturbance

Project Feature	Acres Disturbed During Construction	Acres to be Restored	Acres Permanently Disturbed
Subtransmission Lines (from Table 2-6)	2,285.4	123.5	1,614.7
Substations (from Table 2-7)	0.5	0.5	0
Telecommunications Amplifier Site (from Table 2-8)	10.5	0	10.5
Access and Spur Roads (from Table 2-9)	678.3	0	129.7
Total Estimated Land Disturbance	**2,974.2**	**124.0**	**1,754.9**

2.4.5.1. Subtransmission Line Ground Disturbance

The estimated land disturbances associated with subtransmission work areas are presented in Table 2-5.

Table 2-5. Ground Disturbance for Subtransmission Line Construction

Project Feature	Site Quantity	Disturbance Acreage Calculation (L x W, feet)	Acres Disturbed During Construction[4]	Acres to be Restored	Acres Newly and Permanently Disturbed[5]
Install TSP	725	200 x 150	499.3	0	499.3
Install Multipole TSP Structure	124	200 x 150	85.4	0	85.4
Install TSP H-Frame	0	200 x 150	0.0	0	0.0
Install LWS pole (permanent)	397	200 x 100	182.3	0	182.3
Install LWS/Wood H-Frame	75	200 x 125	43.0	0	43.0
Install Multipole LWS structure (permanent)	2	200 x 125	1.1	0	1.1
Install LWS pole (temporary)	108	200 x 100	49.6	0	49.6
Install Multipole Wood Structure (permanent)	9	200 x 200	8.3	0	8.3
Remove TSP or LST	1,370	200 x 150	943.5	0	943.5
Remove H-Frame (steel or wood)	153	200 x 125	87.8	0	87.8
Remove Multipole (wood)	89	200 x 125	51.1	0	51.1
Remove wood pole	6	200 x 100	2.8	0	2.8
Modify Existing Structure	537	200 x 125	308.2	0	308.2
Conductor Stringing (Pull and Tension) Sites	458	400 x 150	630.9	0	630.9

Project Feature	Site Quantity	Disturbance Acreage Calculation (L x W, feet)	Acres Disturbed During Construction[4]	Acres to be Restored	Acres Newly and Permanently Disturbed[5]
Conductor Field Snub or Splice Areas	64	400 x 100	58.8	0	58.8
Splice Removal	882	75 x 50	75.9	0	75.9
Install/Remove Guard Structure	287	75 x 75	37.1	0	37.1
Telecommunications Pull and Tension Site[1]	0	400 x 150	0.0	--	0.0
Material Yards[2]	52	Varies	244.8	128.6	0
Helicopter Landing Zone[3]	3	Varies	2.1	2.1	0
Existing Access and Spur Roads	305.9 miles	# of miles x 18 feet	547.2	0	124
New Spur Roads	2.7 miles	#of miles x variable dimensions	5.8	0	5.8
Disturbance Acres Total			3,983.9	128.6	3,271.4
TOTAL Acres Disturbed During Construction (*minus overlapping areas)*			**2,285.4**	**123.5**	**1,614.7**

Source: SCE, PEA Table 3.7-4. Updated with SCE Response to DR 16 (9/30/24).
Table Notes:
1 Telecommunications pull and tension sites along Segments 1 and 2 would be located within conductor stringing sites or conductor field snub areas.
2 128.6 acres of material yards located on undisturbed areas; remainder of material yard acreage (144.8 acres) is previously disturbed.
3 0.4 acres of helicopter landing zones overlap with access roads; these overlapping areas would not be restored, but area is included in Existing Access and Spur Roads row.
4 Total Acres Disturbed During Construction reflects the sum of the disturbance areas with overlaps between and among structure installation, removal, and modification work areas, conductor stringing sites, conductor field snub or splice areas, splice removal areas, guard structure installation and removal areas, telecommunications pull and tension sites, material yards, helicopter landing zones, and access roads removed; therefore, columns do not sum.
5 Total Acres Newly and Permanently Disturbed calculated as follows: Total Acres Disturbed During Construction (2,285) <minus> Acres to be Restored (129 acres) <minus> Area of Currently Disturbed Access Roads (547 acres).

2.4.5.2. Ground Disturbance at Substations and Telecommunications Facilities

The land disturbance anticipated at each of the substations included in the Proposed Project is presented in Table 2-6, Land Disturbance for Construction at Existing Substation Facilities. Modifications to the existing substations at Baker, Control, Coso, Haiwee, Inyokern, Randsburg, and Kramer Substations would be required for the Project. When possible, surface disturbance required for substation and fiber optic construction activities would be within the existing currently disturbed footprint of the substation. Where existing conduit or cable raceways within the substations are available, underground fiber optic cable would be installed within the existing footprint of these substations. As stated previously, short sections of fiber optic cable would be installed underground outside the existing footprint of the Control, Coso, Haiwee, Kramer, Inyokern, and Randsburg Substations. If existing conduit or raceways are not available within the substation footprint, new conduit would be installed in trenches outside the perimeter of the substation.

Table 2-6. Ground Disturbance for Construction at Existing Substation Facilities

	Underground Length		Number of Vaults/Pull Boxes		Area Disturbed (acres)	
Substation	Inside Substation	Outside Substation	Inside Substation	Outside Substation	Inside Substation	Outside Substation
Control	200	700	0	3	0.05	0.16
Haiwee	10	210	0	7	0.00	0.05
Coso	100	120	1	2	0.02	0.03

Substation	Underground Length		Number of Vaults/Pull Boxes		Area Disturbed (acres)	
	Inside Substation	Outside Substation	Inside Substation	Outside Substation	Inside Substation	Outside Substation
Inyokern (N)	20	500	2	1	0.00	0.11
Inyokern (S)	50	250	0	4	0.01	0.06
Randsburg	10	400	0	9	0.00	0.09
Kramer	1,000	10	6	0	0.23	0.00
Substation Total	**1,390**	**2,190**	**9**	**26**	**0.31**	**0.50**

Source: SCE, PEA Table 3.7-5.

At the telecommunications Amplifier Site, fiber optic cable would be routed underground through new conduit to an existing telecommunication building owned by a third party. The underground portion would be installed as described in Section 2.4.2. The ground disturbance for the telecommunications Amplifier Site is presented in Table 2-7.

Table 2-7. Ground Disturbance for Construction of Telecommunications Amplifier Site

Other Facilities	Underground Length (feet)	Number of Pull Boxes	Temporary Area Disturbed (acres)	Permanent Area Disturbed (acres)
Independence Amplifier Site Trench	40	3	0.02	0.02
Independence Amplifier Line, 60 poles	—	—	4.4	4.4
Independence Amplifier Line, Pull Sites	—	—	2.5	2.5
Haiwee Substation, LADWP pole replacements	—	—	3.56	3.56
Amplifier Site Total	**40**	**3**	**10.5**	**10.5**

Source: SCE, PEA Table 3.7-6. Updated with SCE Response to DR 7 (4/13/2021)

2.4.5.3. Ground Disturbance for Access and Spur Road Construction

Table 2-8, Ground Disturbance for Access and Spur Roads, shows the potential land disturbance for access roads and spur roads to be used during construction.

Table 2-8. Ground Disturbance for Access and Spur Roads

Project Feature	Quantity	Disturbance Estimate (L x W)	Acres Disturbed During Construction	Acres to be Restored	Acres Permanently Disturbed
Existing Access and Spur Roads	305.9 miles	# of miles x 18 feet	672.5	0	123.9
New Spur Roads	2.7 miles	# of miles x variable dimensions	5.8	0	5.8
Access and Spur Road Total			**678.3**	**0**	**129.7**

Source: SCE, PEA Table 3.7-3. Updated with SCE Response to DR-16 (9/30/24)

1 The width of existing access and spur roads varies across the I-C Project alignment. SCE's standard design for access and spur roads is that they have a width of 18 feet (a 14-foot drivable surface and 2-foot shoulders on each side of the road). At present, existing access and spur roads account for 549 acres of disturbance. To bring these access and spur roads up to the SCE standard design, an additional 124 acres would be permanently disturbed. No disturbance outside the 18-foot width (including vegetation trimming) is included in these calculations.

2.4.6. Excavation Material

As described in Table 2-2, an estimated total of 1,618 poles or towers will be removed as part of the Proposed Project. The amount of soil estimated to be generated from the excavation of each new or replacement pole or tower is expected to range from approximately 6 to 71 cubic yards depending on the required dimensions for each excavation. The soils would be staged for reuse and managed according to regulatory requirements and the Project Soil Management Plan (see Section 2.8, APM-HAZ-2).

Approximately 35 vaults or pull boxes would be installed under the Proposed Project at or in the vicinity of the existing substations, resulting in the excavation of approximately 375 cubic yards of soil material. An additional approximately 400 cubic yards of soil may be excavated for installation of underground fiber optic cable at or in the vicinity of the existing substations. Excavated material would be managed as described in Section 2.4.1.11, Reusable, Recyclable, and Waste Material Management.

2.4.7. Energizing Subtransmission Lines

Energizing the rebuilt lines would be the final step in completing the subtransmission construction. Portions of the existing lines would be de-energized during the construction period in order to connect the new conductor in that portion to the existing system. To reduce the need for electric service interruption, de-energizing and re-energizing the existing lines may occur at night when electrical demand is low.

Electrical service interruptions would need to occur when energizing the project. Because the facilities in question are under CAISO control, SCE must develop an appropriate construction sequencing program in coordination with the CAISO after project licensing and development specifics are finalized. SCE anticipates minimizing potential service interruptions as follows:

- Construct all new double-circuit infrastructure without outages, where possible, to limit outage windows.
- Where construction of all new double-circuit infrastructure without outages is not possible due to physical constraints along right-of-way that impinge on safety during construction due to conductor blow out, the construction of new double-circuit infrastructure with single line outages would be implemented to limit outage of both lines to minimum durations thus minimizing service interruptions.
- If possible, cut-overs would be limited to one line at any given time to reduce impacts of outages.
- Cut-overs would be coordinated with existing generation facilities to reduce overall impacts to generation projects.
- Schedule the timing of cut-overs during appropriate time periods to minimize outage impacts.
- Coordinate with LADWP and NV Energy to leverage system ties during outages in order to maintain uninterrupted service to retail customers.

Multiple factors drive durations corresponding to service interruptions which would be considered in developing the appropriate outage plan. Consequently, there is no “typical” duration defined with de-energizing each line.

2.4.8. Construction Equipment and Workforce

2.4.8.1. Construction Equipment

It is anticipated that construction activities would generate approximately 200 daily vehicle trips. This estimate assumes each worker makes two daily personal vehicle trips, for a total of 200 round trips per day, and assumes 50 daily medium and heavy truck round trips. The anticipated vehicle trips are discussed in greater detail in Section 3.18, Transportation.

SCE anticipates a total of approximately 200 construction personnel working on any given day. SCE anticipates that crews would work concurrently whenever possible; however, the estimated deployment and number of crew members would vary depending on factors such as material availability, resource availability, and construction scheduling. In general, construction efforts would occur in accordance with accepted construction industry standards.

Table 2-9, Construction Equipment Description, lists the equipment SCE expects to use during construction and a brief description of the use of that equipment.

Table 2-9. Construction Equipment Description

Type of Equipment	Use(s)
1-Ton Truck, 4x4	Transport workers and small tools, towing
3/4-Ton Truck, 4x4	Transport workers and small tools, towing
Auger Truck	Drill holes for LWS poles and TSP foundations
Backhoe/Front Loader	Trenching, moving materials
Boom/Crane Truck	LWS pole installation, wood pole removal, guarding during stringing
Bull Wheel Puller	Conductor stringing
Chipper	Tree removal/trimming
Compressor Trailer	Powering compressed air tools
Concrete Truck	Delivery of concrete
Drum Type Compactor	Compacting access and spur roads, construction work sites, and laydown areas
Dump Truck, 4x4	Hauling excavated soils, broken concrete, removed LST sections, and other materials
Excavator	Excavation
Extendable Flat Bed Pole Truck	Hauling poles
Flat Bed Pole Truck	Hauling poles
Flat Bed Truck/Trailer	Moving construction equipment and materials
Lowboy Truck/Trailer	Moving construction equipment
Manlift/Bucket Truck	Lifting workers
Motor Grader	Grading soils along access and spur roads, construction work sites, and laydown areas
R/T Crane (M)	Structure installation and removal
R/T Forklift	Moving materials
Sock Line Puller	Conductor stringing
Static Truck/ Tensioner	Conductor stringing
Stump Grinder	Tree removal/trimming
Track Type Dozer	Grading/blading access and spur roads, construction work sites, and laydown areas
Truck, Semi-Tractor	Hauling materials
Water Truck	Dust control
Medium-duty Helicopter	Structure installation/removal
Light-duty Helicopter	Conductor installation/removal; marker ball installation
Fuel, Helicopter Support Truck	Helicopter refueling/support

Source: SCE, PEA Table 3.7-9.

Table 2-10, Construction Equipment Estimate, lists the equipment SCE expects to use during construction and the estimated duration of use for each piece of equipment.

Table 2-10. Construction Equipment Estimate

Work Activity	Activity Production					
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Schedule (Days)	Duration of Use (Hours/Day)	Estimated Production Per Day
Survey				**262**		**262 Miles**
1-Ton Truck, 4x4	300	Diesel	2	262	10	1 Mile
Material Yards				**Duration of Project**		**n/a**
1-Ton Truck, 4x4	300	Diesel	1	Duration of Project	4	n/a
R/T Forklift	350	Diesel	1		5	
Boom/Crane Truck	350	Diesel	1		5	
Water Truck	300	Diesel	2		10	
Jet A Fuel Truck	300	Diesel	1		4	
Truck, Semi-Tractor	500	Diesel	1		6	

Work Activity			Activity Production			
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Schedule (Days)	Duration of Use (Hours/Day)	Estimated Production Per Day
Road Work				**37**		**306 Miles**
1-Ton Truck, 4x4	300	Diesel	2	37	5	n/a
Backhoe/Front Loader	350	Diesel	1	37	7	
Track Type Dozer	350	Diesel	1	37	7	
Motor Grader	350	Diesel	1	37	5	
Water Truck	300	Diesel	2	37	10	
Drum Type Compactor	250	Diesel	1	37	5	
Excavator	300	Diesel	1	22	7	
Lowboy Truck/Trailer	500	Diesel	1	22	4	
Wet Crossing Installation						**40 crossings**
1-Ton Truck, 4x4	300	Diesel	1	80	8	0.5 per day
Tracked Excavator	250	Diesel	1	80	8	
Rubber Tire Backhoe	125	Diesel	1	80	8	
Wheel Loader	250	Diesel	1	80	8	
Dump Truck	350	Diesel	2	80	8	
Water Truck	300	Diesel	1	80	10	
Concrete Truck	350	Diesel	3	80	4	
Flatbed Trailer	--	Diesel	1	80	8	
Install TSP Foundations				**1,450**		**727 TSPs**
3/4-Ton Truck, 4x4	275	Gas	2	1,450	5	0.5 per day
Boom/Crane Truck	350	Diesel	1	1,450	7	
Backhoe/Front Loader	200	Diesel	1	1,450	10	
Auger Truck	500	Diesel	1	1,088	10	
Water Truck	350	Diesel	1	1,450	10	
Dump Truck	350	Diesel	1	1,450	10	
Concrete Mixer Truck	425	Diesel	2	1,088	6	
TSP Haul				**181**		**727 TSPs**
3/4-Ton Truck, 4x4	275	Gas	2	181	8	1 per day
Boom/Crane Truck	350	Diesel	1	181	8	
Flat Bed Pole Truck	400	Diesel	2	181	10	
Water Truck	350	Diesel	1	181	10	
TSP Assembly				**725**		**727 TSPs**
3/4-Ton Truck, 4x4	275	Gas	2	725	6	1 per day
1-Ton Truck, 4x4	300	Diesel	2	725	6	
Water Truck	350	Diesel	1	725	10	
Compressor Trailer	60	Diesel	1	725	6	
Boom/Crane Truck	350	Diesel	1	725	7	
TSP Erection				**725**		**727 TSPs**
3/4-Ton Truck, 4x4	275	Gas	1	725	6	1 per Day
1-Ton Truck, 4x4	300	Diesel	1	725	6	
Water Truck	350	Diesel	1	725	10	
Compressor Trailer	60	Diesel	1	725	6	
R/T Crane	350	Diesel	1	725	7	
Medium-duty Helicopter		Jet A	1	73	6	
Install TSP Multipole Foundations				**729**		**124 Multipole TSPs**
3/4-Ton Truck, 4x4	275	Gas	2	729	5	0.17 per Day
Boom/Crane Truck	350	Diesel	1	729	7	
Backhoe/Front Loader	200	Diesel	1	729	10	

Work Activity			Activity Production			
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Schedule (Days)	Duration of Use (Hours/Day)	Estimated Production Per Day
Auger Truck	500	Diesel	1	365	10	
Water Truck	350	Diesel	1	729	10	
Dump Truck	350	Diesel	1	729	10	
Concrete Mixer Truck	425	Diesel	2	365	6	
TSP Multipole Haul				**124**		**124 Multipole TSPs**
3/4-Ton Truck, 4x4	275	Gas	2	124	8	1 per Day
Boom/Crane Truck	350	Diesel	1	124	8	
Flat Bed Pole Truck	400	Diesel	2	124	10	
Water Truck	350	Diesel	1	124	10	
TSP Multipole Assembly				**413**		**124 Multipole TSPs**
3/4-Ton Truck, 4x4	275	Gas	2	413	6	0.3 per Day
1-Ton Truck, 4x4	300	Diesel	2	413	6	
Water Truck	350	Diesel	1	413	10	
Compressor Trailer	60	Diesel	1	413	6	
Boom/Crane Truck	350	Diesel	1	41	7	
TSP Multipole Erection				**384**		**128 Multipole TSPs**
3/4-Ton Truck, 4x4	275	Gas	1	384	6	0.3 per Day
1-Ton Truck, 4x4	300	Diesel	1	384	6	
Water Truck	350	Diesel	1	384	10	
Compressor Trailer	60	Diesel	1	384	6	
R/T Crane	350	Diesel	1	384	7	
Medium-duty Helicopter		Jet A	1	38	6	
Existing Pole Removal[1]				**29**		**114 Poles**
1-Ton Truck, 4x4	300	Diesel	2	29	10	4 per day
Compressor Trailer	60	Diesel	1	29	5	
Manlift/Bucket Truck	250	Diesel	1	29	8	
Boom/Crane Truck	350	Diesel	1	29	8	
Flat Bed Pole Truck	400	Diesel	1	29	10	
Water Truck	300	Diesel	1	29	10	
Existing Lattice Structure/TSP Removal				**2,740**		**1,370 Structures**
1-Ton Truck, 4x4	300	Diesel	2	2,740	10	0.5 per day
Compressor Trailer	60	Diesel	1	2,740	5	
Manlift/Bucket Truck	250	Diesel	1	2,740	8	
Backhoe/Front Loader	125	Diesel	2	2,740	10	
Boom/Crane Truck	350	Diesel	1	2,740	8	
Flat Bed Pole Truck	400	Diesel	1	2,740	10	
Water Truck	300	Diesel	1	2,740	10	
Medium-duty Helicopter		Jet A	1	274	6	
Dump Truck	350	Diesel	1	2,740	10	
Excavator	250	Diesel	1	2,740	10	
R/T Crane (M)	215	Diesel	1	2,740	5	
R/T Crane (L)	300	Diesel	1	2,740	7	
LWS Pole Haul[3]				**126**		**505 LWS Poles**
3/4-Ton Truck, 4x4	275	Gas	1	126	10	4 per day
Water Truck	300	Diesel	1	126	10	
Boom/Crane Truck	350	Diesel	1	126	8	
Flat Bed Pole Truck	400	Diesel	1	126	10	

Work Activity	Activity Production					
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Schedule (Days)	Duration of Use (Hours/Day)	Estimated Production Per Day
LWS Pole Assembly[3]				**126**		**505 LWS Poles**
3/4-Ton Truck, 4x4	275	Gas	2	126	6	4 per day
Compressor Trailer	60	Diesel	1	126	6	
1-Ton Truck, 4x4	300	Diesel	2	126	10	
Water Truck	350	Diesel	1	126	10	
Boom/Crane Truck	350	Diesel	1	126	8	
LWS Pole Install[3]				**126**		**505 LWS Poles**
1-Ton Truck, 4x4	300	Diesel	1	126	6	4 per day
Manlift/Bucket Truck	350	Diesel	1	126	10	
Boom/Crane Truck	350	Diesel	1	126	7	
Auger Truck	210	Diesel	1	126	8	
Water Truck	300	Diesel	1	126	10	
Backhoe/Frontloader	125	Diesel	1	126	10	
Extendable Flat Bed Pole Truck	400	Diesel	1	126	6	
Medium-duty Helicopter		Jet A	1	13	6	
LWS/Wood Multipole Haul[4]				**86**		**86 Structures**
3/4-Ton Truck, 4x4	275	Gas	1	86	10	1 per day
Water Truck	300	Diesel	0.5	86	10	
Boom/Crane Truck	350	Diesel	1	86	8	
Flat Bed Pole Truck	400	Diesel	1	86	10	
LWS/Wood Multipole Assembly				**86**		**15 Structures**
3/4-Ton Truck, 4x4	275	Gas	2	86	6	1 per day
Compressor Trailer	60	Diesel	1	86	6	
1-Ton Truck, 4x4	300	Diesel	2	86	10	
Water Truck	350	Diesel	1	86	10	
Boom/Crane Truck	350	Diesel	1	86	8	
LWS/Wood Multipole Structure Install				**15**		**15 Structures**
1-Ton Truck, 4x4	300	Diesel	1	15	6	1 per day
Manlift/Bucket Truck	350	Diesel	1	15	10	
Boom/Crane Truck	350	Diesel	1	15	7	
Auger Truck	210	Diesel	1	15	8	
Water Truck	300	Diesel	1	15	10	
Backhoe/Frontloader	125	Diesel	1	15	10	
Extendable Flat Bed Pole Truck	400	Diesel	1	15	6	
LWS/Wood H-Frame Structure Haul[4]				**38**		**38 H-Frames**
3/4-Ton Truck, 4x4	275	Gas	1	38	10	2 per day
Water Truck	300	Diesel	0.5	38	10	
Boom/Crane Truck	350	Diesel	1	38	8	
Flat Bed Pole Truck	400	Diesel	1	38	10	
LWS/Wood H-Frame Structure Assembly				**38**		**38 H-Frames**
3/4-Ton Truck, 4x4	275	Gas	2	38	6	2 per day
Compressor Trailer	60	Diesel	1	38	6	
1-Ton Truck, 4x4	300	Diesel	2	38	10	
Water Truck	350	Diesel	1	38	10	
Boom/Crane Truck	350	Diesel	1	38	8	
LWS/Wood H-Frame Structure Install				**38**		**38 H-Frames**
1-Ton Truck, 4x4	300	Diesel	1	38	6	2 per day
Manlift/Bucket Truck	350	Diesel	1	38	10	

Work Activity	Activity Production					
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Schedule (Days)	Duration of Use (Hours/Day)	Estimated Production Per Day
Boom/Crane Truck	350	Diesel	1	38	7	
Auger Truck	210	Diesel	1	38	8	
Water Truck	300	Diesel	1	38	10	
Backhoe/Frontloader	125	Diesel	1	38	10	
Extendable Flat Bed Pole Truck	400	Diesel	1	38	6	
Temporary LWS Multipole Haul[4]				**4**		**2 Structures**
3/4-Ton Truck, 4x4	275	Gas	1	4	10	0.5 per day
Water Truck	300	Diesel	0.5	4	10	
Boom/Crane Truck	350	Diesel	1	4	8	
Flat Bed Pole Truck	400	Diesel	1	4	10	
Temporary LWS Multipole Assembly				**2**		**2 Structures**
3/4-Ton Truck, 4x4	275	Gas	2	2	6	1 per day
Compressor Trailer	60	Diesel	1	2	6	
1-Ton Truck, 4x4	300	Diesel	2	2	10	
Water Truck	350	Diesel	1	2	10	
Boom/Crane Truck	350	Diesel	1	2	8	
Temporary LWS Multipole Structure Install/Removal				**4**		**2 Structures**
1-Ton Truck, 4x4	300	Diesel	1	4	6	0.5 per day
Manlift/Bucket Truck	350	Diesel	1	4	10	
Boom/Crane Truck	350	Diesel	1	4	7	
Auger Truck	210	Diesel	1	4	8	
Water Truck	300	Diesel	1	4	10	
Backhoe/Frontloader	125	Diesel	1	4	10	
Extendable Flat Bed Pole Truck	400	Diesel	1	4	6	
Temporary LWS Pole Haul[3]				**54**		**108 Poles**
3/4-Ton Truck, 4x4	275	Gas	1	54	10	2 per Day
Water Truck	300	Diesel	1	54	10	
Boom/Crane Truck	350	Diesel	1	54	8	
Flat Bed Pole Truck	400	Diesel	1	54	10	
Temporary LWS Pole Assembly[3]				**27**		**108 Poles**
3/4-Ton Truck, 4x4	275	Gas	2	27	6	4 per Day
Compressor Trailer	60	Diesel	1	27	6	
1-Ton Truck, 4x4	300	Diesel	2	27	10	
Water Truck	350	Diesel	1	27	10	
Boom/Crane Truck	350	Diesel	1	27	8	
Temporary LWS Pole Install/Removal[3]				**216**		**108 Poles**
1-Ton Truck, 4x4	300	Diesel	1	216	6	4 per Day
Manlift/Bucket Truck	350	Diesel	1	216	10	
Boom/Crane Truck	350	Diesel	1	216	7	
Auger Truck	210	Diesel	1	216	8	
Water Truck	300	Diesel	1	216	10	
Backhoe/Frontloader	125	Diesel	1	216	10	
Extendable Flat Bed Pole Truck	400	Diesel	1	216	6	
Medium-duty Helicopter		Jet A	1	22	6	
Install/Remove Conductor and Install OPGW				**873**		**262 Linear Miles**
¾-Ton Truck, 4x4	275	Gas	1	873	10	0.3 Miles per Day
1-Ton Truck, 4x4	300	Diesel	2	873	10	
Manlift/Bucket Truck	250	Diesel	1	873	10	

Work Activity			Activity Production			
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Schedule (Days)	Duration of Use (Hours/Day)	Estimated Production Per Day
Boom/Crane Truck	350	Diesel	1	873	10	
Dump Truck	350	Diesel	1	873	10	
Wire Truck/Trailer	350	Diesel	2	603	10	
Sock Line Puller	300	Diesel	1	236	10	
Bull Wheel Puller	350	Diesel	1	463	10	
Hydraulic Rewind Puller	350	Diesel	1	873	10	
Static Truck/ Tensioner	350	Diesel	1	873	10	
Backhoe/Front Loader	125	Diesel	1	175	8	
Truck, Semi-Tractor	400	Diesel	2	873	10	
Lowboy Truck/Trailer	450	Diesel	2	873	10	
Water Truck	300	Diesel	1	873	10	
Light Helicopter		Jet A	1	698	7	
Conductor Splicing Rig	350	Diesel	1	236	10	
Fiber Splicing Lab	300	Diesel	1	291	10	
Install/Remove Guard Structures				**57**		**287 Structures**
3/4-Ton Truck, 4x4	275	Gas	2	57	8	5 per Day
1-Ton Truck, 4x4	300	Diesel	2	57	8	
Compressor Trailer	60	Diesel	2	57	7	
Backhoe/Front Loader	125	Diesel	1	57	10	
Water Truck	300	Diesel	1	57	5	
Manlift/Bucket Truck	250	Diesel	1	57	8	
Boom/Crane Truck	350	Diesel	1	57	10	
Auger Truck	500	Diesel	1	57	8	
Extendable Flat Bed Pole Truck	400	Diesel	1	57	8	
Telecommunications Underground Infrastructure Installation				**29**		**3,580 Feet**
1-Ton Truck, 4x4	300	Diesel	2	29	4	125 Feet per Day
Backhoe/Front Loader	125	Diesel	1	29	6	
Dump Truck	350	Diesel	2	29	6	
Pipe Truck/Trailer	275	Diesel	1	29	8	
Concrete Mixer Truck	350	Diesel	3	29	2	
Water Truck	300	Diesel	1	29	6	
Compressor Trailer	60	Diesel	1	29	4	
Lowboy Truck/Trailer	450	Diesel	1	29	4	
Telecommunications Pole Haul Independence Tap and Crossings						**60 LWS Poles**
3/4-Ton Truck, 4x4	275	Gas	1	15	10	4 per Day
Water Truck	300	Diesel	0.5	15	10	
Boom/Crane Truck	350	Diesel	1	15	8	
Flat Bed Pole Truck	400	Diesel	1	15	10	
Telecommunications Pole Installation Independence Tap and Crossings						**60 LWS Poles**
1-Ton Truck, 4x4	300	Diesel	1	15	6	4 per Day
Manlift/Bucket Truck	350	Diesel	1	15	10	
Boom/Crane Truck	350	Diesel	1	15	7	
Auger Truck	210	Diesel	1	15	8	
Water Truck	300	Diesel	1	15	10	
Backhoe/Frontloader	125	Diesel	1	15	10	
Extendable Flat Bed Pole Truck	400	Diesel	1	15	6	

Work Activity	Activity Production					
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Schedule (Days)	Duration of Use (Hours/Day)	Estimated Production Per Day
Restoration						**262 Miles**
1-Ton Truck, 4x4	300	Diesel	2	262	4	1 Mile per Day
Backhoe/Front Loader	125	Diesel	1	262	4	
Motor Grader	250	Diesel	1	262	6	
Water Truck	300	Diesel	1	262	8	
Drum Type Compactor	100	Diesel	1	262	4	
Lowboy Truck/Trailer	450	Diesel	1	262	4	

Source: SCE, PEA Table 3.7-8; updated in SCE Response to DR-16 (9/30/24).
Notes:
1 Includes removal of existing poles and temporary poles.
2 Includes removal of existing H-frames and temporary multipole LWS structures.
3 Includes permanent and temporarily installed LWS poles.
4 Includes permanent and temporarily installed LWS H-frames and permanent and temporarily installed multipole LWS structures.

2.4.8.2. Construction Workforce

Construction would be performed by SCE construction crews and/or contractors. If SCE construction crews are used, they typically would be based at SCE's local facilities, (e.g., service centers, substation, transmission ROW, etc.) or the project-specific temporary material yards. Contractor construction personnel would be managed by SCE construction management personnel and based out of the contractor's existing yard or temporary material yards. SCE anticipates that the construction workforce would temporarily be based or housed in the vicinity of the project.

Table 2-11, Construction Workforce Estimate, shows the estimated number of personnel required for each project task associated with construction of the Proposed Project.

Table 2-11. Construction Workforce Estimate

Project Task	Estimated Workforce	Estimated Schedule (Days)
Survey	4	262
Material Yards	5	Duration of Project
Road Work	6	37
Wet Crossing Installation	6	80
Install TSP Foundations	5	1,450
TSP Haul	5	181
TSP Assembly	5	725
TSP Erection	5	725
Install TSP Multipole Foundations	5	729
TSP Multipole Haul	5	124
TSP Multipole Assembly	5	413
TSP Multipole Erection	5	413
Existing Pole Removal (see Note 1)	5	96
Existing Lattice Structure/TSP Removal	5	2,740
LWS Pole Haul (see Note 3)	5	100
LWS Pole Assembly (see Note 3)	5	100
LWS Pole Install (see Note 3)	5	100
LWS/Wood Multipole Haul (See Note 4)	5	15

Project Task	Estimated Workforce	Estimated Schedule (Days)
LWS/Wood Multipole Assembly	5	15
LWS/Wood Multipole Structure Install	5	15
LWS/Wood H-Frame Structure Haul (See Note 4)	5	68
LWS/Wood H-Frame Structure Assembly	5	68
LWS/Wood H-Frame Structure Install	5	68
Temporary LWS Multipole Haul (See Note 4)	5	4
Temporary LWS Multipole Assembly	5	15
Temporary LWS Multipole Structure Install/Removal	5	15
Temporary LWS Pole Haul (See Note 3)	5	54
Temporary LWS Pole Assembly (See Note 3)	5	27
Temporary LWS Pole Install/Removal (See Note 3)	5	216
Install/Remove Conductor and Install OPGW	20	873
Install/Remove Guard Structures	5	57
Telecommunications Underground Infrastructure Installation	6	29
Telecommunications Pole Haul Independence Tap and Crossings	5	17
Telecommunications Pole Assembly Independence Tap and Crossings	5	17
Telecommunications Pole Installation Independence Tap and Crossings	5	17
Restoration	7	262

Source: SCE PEA Table 3.7-8; updated in SCE Response to DR-16 (9/30/24).
Notes:
1 Includes removal of existing poles and temporary poles.
2 Includes removal of existing H-frames and temporary multipole LWS structures.
3 Includes permanent and temporarily installed LWS poles.
4 Includes permanent and temporarily installed LWS H-frames and permanent and temporarily installed multipole LWS structures.

2.4.9. Construction Summary and Sequence by Segment

2.4.9.1. Segment 1, Construction Summary and Sequence

Construction activities for Segment 1 would include:

- Install double-circuit TSPs, multi-pole TSP structures, double-circuit LWS poles, and multi-pole LWS structures (refer to Table 2-2)
- Install approximately 60 new poles for telecommunications.
- Remove approximately 1,161 existing subtransmission structures.
- Replace existing ASCR conductor with new conductor along the length of Segment 1.
- Install OPGW and/or ADSS fiber optic cable along the length of Segment 1 and install system protection and telecommunications-associated equipment at existing substations.
- Disconnect existing conductor from existing positions at substations and connect new conductor to those existing positions.
- Install marker balls on overhead wire where needed in accordance with FAA requirements.

The following summarizes how construction work in Segment 1 may be sequenced. The actual sequence of construction would be determined by the construction contractor. The potential work sequence for Segment 1, where the existing structures are double-circuited, may be as follows:

1. Road work – Existing access and spur roads would be used to reach structures, but some rehabilitation and grading may be necessary before removal activities would begin to establish construction access. Where existing access roads and/or spur roads are not present, and where the topography and soil conditions are suitable for overland travel, vegetation would be trimmed to define a route between the nearest access and/or spur road and a construction work area to permit the safe transit of construction vehicles. In some locations where surface conditions are not suitable for overland travel (soft soils, wetland areas, etc.), temporary matting may be placed on the surface from an existing access or spur road to the construction work area, and additional matting laid to form a construction work area. In some locations, new permanent spur roads may be constructed if existing spur roads are not present to access replacement structure locations.
2. Wire-pulling locations – Wire pulling sites would be located approximately every 13,000 feet along the existing utility corridor and could include locations at dead-end structures and turning points.
3. De-energize circuit – The subtransmission circuit on one side of the existing structures would be deenergized.
4. Conductor removal –Upon placement of the wire pulling equipment, the existing subtransmission conductor on one side of the existing structures would be pulled out with a pulling rope and/or cable attached to the trailing end of the conductor; guard structures or the equivalent might be used during the removal process. The old conductor would be transported to a material yard where it would be prepared for recycling.
5. Pole/tower installation – Replacement structures would be installed as described in Section 2.4.2.
6. Conductor installation – Replacement conductor would be installed on one side of the replacement structures as described in Section 2.4.2.
7. Fiber optic cable installation – Fiber optic cable would be installed on the replacement structures as described in Section 2.4.4.
8. Energize/deenergize circuits – The newly-installed circuit on replacement structures would be energized, and the remaining existing circuit on the existing structures would be deenergized.
9. Conductor removal – The remaining deenergized subtransmission conductors on the existing structures would be removed as described above.
10. Wood pole/wood pole H-frame removal, surface construction – Wood poles and wood pole H-frames would be removed utilizing a line truck or similar equipment with an attached boom. The removal would consist of above and below-ground portions of the pole. A ground crew would hand excavate around the wood pole; a boom would be attached to the pole, and the pole would then be lifted out and placed on the ground or on a trailer. The wood pole would be transported by truck to a material yard, and then to an SCE facility for reuse or recycling. The holes left from removing the poles would be backfilled and compacted with soils that may be available as a result of the excavation for new poles, with excess soil from the area, or using imported fill as needed.
11. Wood pole/wood pole H-frame removal, helicopter construction – Wood poles and wood pole H-frames would be removed utilizing a helicopter and sling. The removal would consist of the above and below-ground portions of the pole. Ground crew would access the pole location overland by vehicle or would walk to the location. The ground crew would hand excavate around the wood pole; a sling would be attached to the pole, and the pole would then be lifted out by the helicopter and placed on the ground or on a trailer or flown to a helicopter landing zone. The wood pole would then be transported by truck or helicopter to a material yard, and then to an SCE facility for reuse or

recycling. The holes left from removing the poles would be backfilled and compacted with soils that may be available as a result of the excavation for new poles, with excess soil from the area, or using imported fill as needed.

12. LST removal, surface construction – For each structure to be removed, a work area would be required. Most structure removal activities would use the equipment pad or other previously disturbed areas established for structure installation. If previously disturbed areas adjacent to the structure are not available, an area would be cleared of vegetation and could be graded if the ground is not level. A crane could be positioned up to approximately 60 feet from the tower location to dismantle the tower. Structures would be dismantled down to the footings and the materials would be transported to a material yard where they would be prepared for recycling.
13. LST removal, helicopter construction – At some locations, existing LSTs may be removed using a helicopter if overland access for equipment is not feasible. Ground crew would unbolt portions of the LST and would attach a sling to the unbolted portion. The portion of the LST would then be lifted out by the helicopter and placed on the ground or on a trailer. The material would be transported to a material yard where it would be prepared for recycling.
14. LST footing removal – Footings would typically be removed 2-3 feet below grade and the holes would be filled with excess soil from the area and smoothed to match the surrounding grade. Footings may be left in-place in locations where their removal may cause slope or soil instability and thus could contribute to localized erosion. Footings may also be left in place if requested by the landowner. Footings would not be left in-place in locations that could pose a hazard to the public.
15. Conductor installation – Replacement conductors would be installed on the other side of the replacement structures as described in Section 2.4.2.
16. Energize circuit – The second replacement circuit would be energized.

2.4.9.2. Segment 2, Construction Summary and Sequence

Construction activities for Segment 2 would include:

- Install double-circuit TSPs with a single circuit installed.
- Install, and then remove, approximately 108 temporary LWS poles or equivalent with a single circuit installed.
- Install, and then remove, approximately 2 temporary multi-pole LWS structures.
- Remove approximately 390 existing subtransmission structures.
- Replace existing ASCR conductor with new conductor along the length of Segment 2.
- Install approximately 48 miles of OPGW and/or ADSS fiber optic cable and install system protection and telecommunications-associated equipment at existing substations.
- Install marker balls on overhead wire where needed in accordance with FAA requirements.

The following summarizes how construction work in Segment 2 may be sequenced, but the actual sequence of construction would be determined by the construction contractor. The potential work sequence for Segment 2, where the existing double-circuited structures would be replaced with double-circuited structures that would have only a single circuit installed on them may be as follows:

1. Road work – Existing access and spur roads would be used to reach structures, but some rehabilitation and grading may be necessary before removal activities would begin to establish construction access. Where existing access roads and/or spur roads are not present, and where the topography and soil conditions are suitable for overland travel, vegetation would be trimmed to define a route between the nearest access and/or spur road and a construction work area to permit the safe transit

of construction vehicles. In some locations where surface conditions are not suitable for overland travel (soft soils, wetland areas, etc.), temporary matting may be placed on the surface from an existing access or spur road to the construction work area, and additional matting laid to form a construction work area. In some locations, new permanent spur roads may be constructed if existing spur roads are not present to replacement structure locations.

2. Temporary pole installation – Install temporary poles to restrict blow-out of existing conductor into to-be-constructed new structures.
3. Wire-pulling locations – Define wire pulling sites, which could be located approximately every 13,000 feet along the existing utility corridor and could include locations at dead-end structures and turning points.
4. Deenergize circuit – The subtransmission circuit on one side of the existing structures would be deenergized.
5. Conductor removal – Upon placement of the wire pulling equipment, the existing subtransmission conductor on one side of the existing structures would be pulled out with a pulling rope and/or cable attached to the trailing end of the conductor; guard structures or the equivalent might be used during the removal process. The arms on that side of the existing structures would be removed as well. The old conductor would be transported to a material yard where it would be prepared for recycling.
6. Pole/tower installation – Replacement subtransmission structures and temporary structures would be installed as described for Segment 1.
7. Conductor installation – Replacement conductors would be installed on one side of the replacement structures as described for Segment 1. In the Cal City Option, the Cal City Sequoia Option, or the Southern Alignment Adjustment, conductors would be installed on both sides of the replacement structures in a portion of Segment 2.
8. Fiber optic cable installation – Fiber optic cable would be installed on the replacement structures as described for Segment 1.
9. Energize/deenergize circuits – The newly-installed circuit on replacement structures would be energized and the remaining existing subtransmission circuit would be deenergized.
10. Conductor removal – The remaining deenergized subtransmission conductors on the existing structures would be removed as described above.
11. Existing and temporary structure removal – The existing LSTs and footings, poles, and H-frames, and temporary poles, would be removed through surface construction and helicopter construction as described for Segment 1 above.

2.4.9.3. Segment 3N, Construction Summary and Sequence

Construction activities for Segment 3N would include:

- Install approximately 2 wood multipole structures and approximately 43 LWS or wood H-frames.
- Remove approximately 43 existing structures.
- Remove existing 795 stranded aluminum conductor (SAC) and install new conductor along the 44-mile length of Segment 3N.
- Install fault return conductor along approximately 2.3 miles of Segment 3N.

In Segment 3N, existing conductor would be replaced with new conductor, some of the existing structures would be replaced with new structures, and interset structures would be installed. The work may occur as follows:

1. Road work – Existing access roads would be used to reach structures, but some rehabilitation and grading may be necessary before removal activities would begin to establish construction access. Where existing access roads and/or spur roads are not present, and where the topography and soil conditions are suitable for overland travel, vegetation would be trimmed to define a route between the nearest access and/or spur road and a construction work area to permit the safe transit of construction vehicles. In some locations where surface conditions are not suitable for overland travel (soft soils, wetland areas, etc.), temporary matting may be placed on the surface from an existing access or spur road to the construction work area, and additional matting laid to form a construction work area. In some locations, new permanent spur roads may be constructed if existing spur roads are not present.
2. Wire-pulling locations – Wire pulling sites could be located approximately every 13,000 feet along the existing utility corridor and could include locations at dead-end structures and inflection points.
3. Deenergize circuit – The subtransmission circuit would be deenergized.
4. Conductor removal – Upon placement of wire pulling equipment, the existing subtransmission conductor would be pulled out with a pulling rope and/or cable attached to the trailing end of the conductor; guard structures or the equivalent might be used during the removal process. The old conductor would be transported to a material yard where it would be prepared for recycling.
5. Existing structure removal – The existing structures slated for removal would be removed through surface construction as described for Segment 1 above.
6. Pole/tower installation – Replacement subtransmission structures and interset structures would be installed as described for Segment 1.
7. Conductor installation – Replacement conductor would be installed as described for Segment 1.
8. Energize circuit – The newly-installed circuit would be energized.

2.4.9.4. Segment 3S, Construction Summary and Sequence

Construction activities for the I-C Project within Segment 3S include:

- Install approximately 3 multipole TSPs, approximately 32 wood or LWS H-frames, and approximately 7 wood multipole structures.
- Remove approximately 42 existing structures.
- Remove existing 795 SAC conductor and install new conductor along the 44-mile length of Segment 3S.
- Install fault return conductor along approximately 3.6 miles of Segment 3S.

The work in Segment 3S, where existing conductor would be replaced with new conductor and some of the existing structures would be replaced with new structures, may be as follows:

1. Road work – Existing access roads would be used to reach structures, but some rehabilitation and grading may be necessary before removal activities would begin to establish construction access. Where existing access roads and/or spur roads are not present, and where the topography and soil conditions are suitable for overland travel, vegetation would be trimmed to define a route between the nearest access and/or spur road and a construction work area to permit the safe transit of construction vehicles. In some locations where surface conditions are not suitable for overland travel (soft soils, wetland areas, etc.), temporary matting may be placed on the surface from an existing access or spur road to the construction work area, and additional matting laid to form a construction

work area. In some locations, new permanent spur roads may be constructed if existing spur roads are not present.

2. Wire-pulling locations – Wire pulling sites could be located approximately every 13,000 feet along the existing utility corridor and could include locations at dead-end structures and inflection points.
3. Deenergize circuit – The subtransmission circuit would be deenergized.
4. Conductor removal – Upon placement of wire pulling equipment, the existing subtransmission conductor would be pulled out with a pulling rope and/or cable attached to the trailing end of the conductor; guard structures or the equivalent might be used during the removal process. The old conductor would be transported to a material yard where it would be prepared for recycling.
5. Existing structure removal – The existing structures slated for removal would be removed through surface construction as described for Segment 1.
6. Pole/tower installation – Replacement subtransmission structures and interset structures would be installed as described for Segment 1.
7. Conductor installation – Replacement conductor would be installed as described for Segment 1.
8. Energize circuit – The newly-installed circuit would be energized.

2.4.10. Construction Schedule

Construction would generally be performed from 7:00 a.m. and 7:00 p.m., Monday through Saturday; however, at limited times some construction along the Project alignment may be required or finished after these hours, and on Sundays. The need for night work is dependent on several factors which include outage restrictions, and permit conditions, which are unknown at this time. SCE assumes that cutovers at each substation and each major highway could require night work. The duration of this work is scope and location specific but would generally fall within a period of 8 to 12 hours.

2.4.10.1. Proposed Construction Timing

SCE anticipates that construction of the Proposed Project would take approximately 39 months. Construction would commence following CPUC approval, final engineering, procurement activities, land rights acquisition, and receipt of all applicable permits. Table 2-12, Proposed Construction Schedule, shows the proposed schedule for project activity.

Table 2-12. Proposed Construction Schedule

Project Activity	Approximate Duration (months)	Approximate Start Date
PTC Application Submitted	---	July 2019
Amended PTC Application	22	April 2020
Second Amended PTC Application	---	October 2024
Acquisition of Required Permits	16	October 2026
Right-of-Way/ Property Acquisition	18	June 2026
Final Engineering	8	December 2026
Subtransmission Line Construction	39	April 2027
Cleanup	8	February 2030
Project Operational	**---**	**October 2030**

Source: SCE, PEA Table 3.7-10 (SCE, 2020); updated with SCE DR-7 (9/30/24).

2.5. Project Operation and Maintenance

SCE currently performs operation and maintenance activities as described below along the subtransmission lines that would be rebuilt under the I-C Project. No material changes in the operations and maintenance activities described below, or the locations of these activities, are anticipated with implementation of the Proposed Project.

SCE conducts ongoing operations and maintenance activities for upkeep of the existing facilities and would continue these activities for the Proposed Project components to ensure reliable service, as well as the safety of the utility worker and the general public, as mandated by the CPUC. Ongoing operations and maintenance of SCE facilities is also subject to Federal Energy Regulatory Commission (FERC) jurisdiction. The existing and proposed transmission and 115 kV subtransmission facilities owned by SCE in the project area are under the operational control of the California Independent System Operator (CAISO).

2.5.1. Operations and Maintenance of Subtransmission Components

SCE controls normal operation of the subtransmission lines remotely through SCE control systems, and manually in the field as required. SCE inspects the subtransmission overhead facilities in a manner consistent with CPUC GO 165 a minimum of once per year via ground and/or aerial observation, but often more frequently based on system reliability. 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 and towers, tree trimming, brush and weed control, and access road maintenance.

SCE performs most regular operations and maintenance activities of overhead facilities from existing access roads with no surface disturbance. Repairs done to existing facilities, such as repairing or replacing existing poles and towers, could occur in areas previously undisturbed. Existing conductors could require re-stringing to repair damages. Some pulling site locations could be in previously undisturbed areas and at times, conductors could be passed through existing vegetation on route to their destination.

SCE conducts routine access road maintenance on an annual and/or as-needed basis. Road maintenance 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 removal of shrubs) approximately 2 to 5 feet beyond berms or road's 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, culvert repair, clearing and establishing water bars, and cleaning and repairing over-side drains. Access road maintenance includes the repair, replacement and installation of storm water diversion devices on an as-needed basis.

Insulators could require periodic washing with water to prevent the buildup of contaminants (dust, salts, droppings, oxidation, condensation, etc.) and reduce the possibility of electrical arcing which can result in circuit outages and potential fire. SCE undertakes insulator washing depending on local conditions and build-up of contaminants. SCE performs replacement of insulators, hardware, and other components as needed to maintain circuit reliability.

Some pole locations and/or lay down areas for repairs or replacement of built facilities could be in previously undisturbed areas and could result in ground and/or vegetation disturbance, though attempts would be made to utilize previously disturbed areas to the greatest extent possible. In some cases, new access is created to remove and replace an existing pole.

Conductors could require re-stringing to repair damages. Some pulling site locations could be in previously undisturbed areas and at times, conductors could be passed through existing vegetation on route to their destination.

SCE performs regular tree pruning to be in compliance with existing state and federal 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 the CPUC (GO 95, Rule 35), California Public Resource Code 4293, California Code of Regulations Title 14, Article 4, and other government and regulatory agencies. SCE's standard approach to tree pruning is to remove at least the minimum required by law plus one year's growth (species dependent).

In addition to maintaining vegetation-free access roads, helipads and clearances around electrical lines, clearance of brush and weeds around structures, and as may be required by applicable regulations on fee owned ROWs, is necessary for fire protection. A 10-foot radial clearance around non-exempt poles (as defined by California Code of Regulations Title 14, Article 4) and a 25 to50-foot radial clearance around non-exempt towers (as defined by California Code of Regulations Title 14, Article 4) are maintained in accordance with Public Resource Code section 4292.

In some cases, structures do not have existing access roads, and SCE must access sites on foot, by helicopter, or by creating temporary access areas. Operations and maintenance related helicopter activities could include transportation of transmission line workers, delivery of equipment and materials to structure sites, structure placement, hardware installation, and conductor and OHGW/OPGW stringing operations. Helicopter landing areas could occur where access by road is infeasible. In addition, helicopters must be able to land within SCE ROWs, which could include landing on access or spur roads.

In addition to regular operations and maintenance activities, SCE conducts a wide variety of emergency repairs in response to emergency situations such as damage resulting from high winds, storms, fires, and other natural disasters, and accidents. Such repairs could include replacement of downed structures, or lines or re-stringing conductors. Emergency repairs could be needed at any time.

2.5.2. Operations and Maintenance of Telecommunications Components

The telecommunications equipment would be subject to maintenance and repair activities on an as needed or emergency basis. Activities would include replacing defective circuit boards, damaged radio antennas or feedlines and testing the equipment. Telecommunication equipment would also be subject to routine inspection and preventative maintenance such as filter change-outs or software and hardware upgrades.

SCE performs most regular operations and maintenance activities of telecommunications equipment at substation or communication sites and inside the equipment rooms that are accessed from existing access roads with no surface disturbance; helicopter transportation may be required to access remote communications sites for routine or emergency maintenance activities.

The telecommunications cables would be maintained on an as needed or emergency basis. Maintenance activities would include patrolling, testing, repairing and replacing damaged cable and hardware. Most regular maintenance activities of overhead facilities are performed from existing access roads with no surface disturbance. Repairs done to existing facilities, such as repairing or replacing existing cables and re-stringing cables, could occur in undisturbed areas. SCE may also conduct habitat restoration for ground disturbance caused by routine or emergency maintenance activities.

2.6. Project Decommissioning

Prior to removal or abandonment of the facilities that would be permitted to be constructed on or over BLM, BIA, the DOD, other government lands, and private lands or within a reasonable time following termination right-of-way or easement, SCE would prepare a removal and restoration plan. The removal and restoration plan would address removal of SCE's facilities from the permitted area, and any requirements for habitat restoration and revegetation. The removal and restoration plan would then be approved by the permitting agency before implementation.

2.7. Electric and Magnetic Field Management Plan and CPUC EMF Analysis/ Mitigation Requirements

2.7.1. Electric and Magnetic Fields

The CPUC recognizes that there is public interest and concern regarding potential health effects that could result from exposure to electric and magnetic fields (EMF) from power lines; therefore, this subsection provides information regarding EMF associated with electric utility facilities and the potential effects of the Proposed Project related to public health and safety. Potential health effects from exposure to ***electric fields*** from power lines (produced by the existence of an electric charge, such as an electron, ion, or proton, in the volume of space or medium that surrounds it) are typically not of concern since electric fields are effectively shielded by materials such as trees, walls, etc. Therefore, the majority of the following information related to EMF focuses primarily on exposure to ***magnetic fields*** (invisible fields created by moving charges) from power lines.

Magnetic fields can be reduced either by cancellation or by increasing distance from the source. Cancellation is achieved in two ways. A transmission line circuit consists of three "phases": three separate wires (conductors), usually on an overhead tower. The configuration of these three conductors can reduce magnetic fields. When the configuration places the three conductors closer together, the interference, or cancellation, of the fields from each wire is enhanced, and the magnetic field is reduced. This technique has practical limitations because of the potential for short circuits if the wires are placed too close together. Close conductor spacing can also create worker safety concerns because there is a risk of workers contacting energized conductors during maintenance.

This EIR does not consider magnetic fields in the context of CEQA and determination of environmental impact. This is because (a) there is no agreement among scientists that EMF does create a potential health risk, and therefore, (b) there are no defined or adopted CEQA standards for defining health risk from EMF. As a result, EMF information is presented for the benefit of the public and decisionmakers.

After several decades of study regarding potential public health risks from exposure to power line EMF, research results remain inconclusive. Several national and international panels have conducted reviews of data from multiple studies and state that there is not sufficient evidence to conclude that EMF causes cancer. The International Agency for Research on Cancer (IARC), an agency of the World Health Organization (WHO), and the California Department of Health Services (DHS) both classified EMF as a possible carcinogen (WHO, 2001; DHS, 2002).

In addition, the 2007 WHO [Environmental Health Criteria (EHC) 238] report concluded that:

- Evidence for a link between Extremely Low Frequency (ELF, 50–60 Hz) magnetic fields and health risks is based on epidemiological studies demonstrating a consistent pattern of increased risk for childhood leukemia. However, "…virtually all of the laboratory evidence and the mechanistic evidence fail to support a relationship between low-level ELF magnetic fields and changes in biological function or disease status.…the evidence is not strong enough to be considered causal but sufficiently strong to remain a concern."
- "For other diseases, there is inadequate or no evidence of health effects at low exposure levels."

Currently, there are no applicable regulations related to EMF levels from power lines or substations. However, following a CPUC decision from 1993 (Decision [D.]93 11 013) that was reaffirmed by the CPUC on January 27, 2006 (D.06 01 042), the CPUC requires utilities to incorporate "low-cost" or "no-cost" measures to mitigate EMF from new or upgraded electrical utility facilities up to approximately 4 percent of total project cost. To comply with this requirement, SCE developed and included an EMF Field Management Plan (FMP) as part of the application for the Proposed Project to reduce magnetic field levels in the vicinity of the transmission line (Appendix F of SCE's PTC application, included as EIR Appendix 2).

2.7.2. EMF in the Project Area

Magnetic field strength is a function of both the electric current carried by the wires, and the configuration and design of the three conductors that together form a single circuit of an electric transmission line. Magnetic field strengths for typical transmission power line loads at the edge of an overhead transmission system right-of-way generally range from 10 to 30 milligauss (mG) (NIEHS, 2002). Exposure to EMF occurs in the community from sources other than electric transmission lines. Research on ambient magnetic fields in homes indicates that levels below 0.6 mG could be found in half of the studied homes in the centers of rooms, and that the average levels in the homes away from electrical appliances was 0.9 mG. Immediately adjacent to appliances (within 12 inches), field values are much higher, for example: 4 to 8 mG near electric ovens and ranges, 20 mG for portable heaters, or 60 mG for vacuum cleaners (NIEHS, 2002). Outside of the home, the public also experiences EMF exposure from the electric distribution system that is located throughout all areas of the community.

Existing EMF levels along SCE's existing 115 kV corridor vary with loading conditions, which vary with time of the day, season of the year, and operating conditions. Modeled existing levels and are discussed in detail in SCE's EMF Field Management Plan (see EIR Appendix 2). These calculated EMF levels were based on peak loading condition and a set of assumptions. They were used to compare various design options and not meant to be indicators of real site-specific levels.

2.7.3. Field Management Plan for the Proposed Project

This section discusses SCE's general practices regarding EMF and the specific EMF reduction measures proposed by SCE for the Proposed Project. SCE's FMP also includes design calculations of estimated EMF levels for the Proposed Project lines with and without implementation of these EMF reduction measures and conductor phasing (i.e., arranging conductors of the proposed transmission lines for magnetic field reduction). For design calculations and details on SCE's assumptions and calculated magnetic field levels for the Proposed Project, see Appendix 2.

SCE's EMF Design Guidelines. In accordance with Section VII(A) of CPUC General Order 131 E, Decision No. D.06 01 042, and SCE's EMF Design Guidelines prepared in accordance with the EMF Decision, SCE would incorporate "no cost" and "low cost" magnetic field reduction steps in the design of the Proposed Project.

SCE's guidelines (2006) call for implementation of measures to reduce magnetic fields based on the land uses surrounding each project, in the following priority:

- Schools, day care centers, hospitals
- Residential properties
- Commercial/industrial land uses
- Recreational sites
- Agricultural lands
- Undeveloped land

Common options set forth in SCE's EMF Design Guidelines that may be selected to reduce the magnetic field strength levels for new and upgraded transmission line projects, include:

- Arranging the conductors in a triangular configuration to maximize field cancellation.
- Placing the conductors for the transmission line in the right-of-way at the greatest distance from buildings and housing priority land uses to reduce magnetic field exposure along the entire route, except where the location of existing utilities prevents strategic line placement.
- Moving the conductors further from the edge of the right-of-way near high priority groups including school, day care, hospital and residential land uses.

Proposed EMF Reduction Measures. The FMP for the Proposed Project (Appendix 2) includes each of these measures, as "no cost" and "low cost" magnetic field reduction steps. "No cost" measures include:

- Arranging the conductors in vertical and delta (triangular) configurations to maximize field cancellation.
- Using double-circuit monopole structure configurations.
- Using taller structure heights in areas with potential overhead discrepancies, thus increasing ground clearance.

The only "low cost" measure incorporated in Project design is:

- Using a post-construction phasing arrangement to minimize EMF.

Table 2-13 presents the specific locations of these options proposed for adoption by SCE.

Table 2-13. "Low Cost and No Cost" EMF Mitigation Options Adopted by SCE

Segment	Start Structure	End Structure	EMF Reduction Design Options	Estimated Cost	Structures in Residential Area
Segment 1	Control Substation	Structure 214	■ Conductor Arrangement ■ Double Circuit Construction ■ Structure Heights ■ Phasing Circuits	■ No cost ■ No cost ■ No cost ■ Low cost	35-37, 53-56, 137-138
Segment 1	Structure 214	Structure 683	■ Conductor Arrangement ■ Double Circuit Construction ■ Structure Heights ■ Phasing Circuits	■ No cost ■ No cost ■ No cost ■ Low cost	N/A
Segment 1	Structure 683	Structure 912	■ Conductor Arrangement ■ Double Circuit Construction ■ Structure Heights ■ Phasing Circuits	■ No cost ■ No cost ■ No cost ■ Low cost	706-708
Segment 1	Structure 912	Inyokern	■ Conductor Arrangement ■ Double Circuit Construction ■ Structure Heights ■ Phasing Circuits	■ No cost ■ No cost ■ No cost ■ Low cost	1042-1050
Segment 2	Kramer Substation	Randsburg Substation	■ Conductor Arrangement ■ Structure Heights	■ No cost ■ No cost	121165 - 121166
Segment 2	Randsburg Substation	Inyokern Substation	■ Conductor Arrangement ■ Structure Heights	■ No cost ■ No cost	N/A
Segment 3N	Kramer Substation	Coolwater Substation	■ Structure Heights	■ No cost	1546399E, 1546400E - W1546395E E1546396E
Segment 3S	Kramer Substation	Tortilla Substation	■ Structure Heights	■ No cost	NA560118AE SA560118BE - NA560117AE SA560117BE, NA560194AE SA560194BE - NA560193AE SA560193BE
Segment 3S	Tortilla Substation	Coolwater Substation	■ Structure Heights	■ No cost	N/A

Source: PTC Application Appendix F, Table 1

Additional information regarding EMF can be found in the FMP in Appendix 2. SCE's complete PTC application and Proponent's Environmental Assessment (PEA) are available for public review at the CPUC Energy Division CEQA Unit and on the project website at:

https://www.cpuc.ca.gov/environment/info/aspen/ivanpah-control/ivanpah-control.htm

If the project or an alternative is approved by the CPUC, SCE would prepare and submit to the CPUC a Final EMF Management Plan containing the precise EMF measures to be employed for the project.

2.8. Applicant Proposed Measures

SCE proposes to implement certain measures to ensure the Proposed Project would occur with minimal environmental impacts in a manner consistent with applicable rules and regulations. SCE proposes to implement these measures during the design, construction, and operation of the Proposed Project in order to avoid or minimize potential environmental impacts.

Applicant Proposed Measures (APMs) are considered to be part of the Proposed Project and are considered in the evaluation of environmental impacts (see Chapter 3). CPUC approval would be based upon the assumption that SCE would adhere to the details defined in the Project Description (Sections 2.1 through 2.6), as well as implementation of all APMs. APMs are not mitigation measures, and SCE would also adhere to any mitigation measures identified by this EIR and adopted by the CPUC.

Following is a list of all APMs by environmental topic area. In some cases, mitigation measures presented in Chapter 3 will supersede, expand upon, or add detail to the APMs as necessary, to further reduce or avoid potential impacts. Most of the APMs were presented in SCE's PEA. A few APMs presented in this list were included by SCE in its BLM Plan of Development (POD) for the I-C Project; these are noted in the APM's title.

2.8.1. General (Multiple Disciplines)

APM WEAP **Worker's Environmental Awareness Training Program.** All activities, as determined appropriate on an activity-by-activity basis, will implement a worker education program that meets the approval of the BLM. The program will be carried out during all phases of the project (site mobilization, ground disturbance, grading, construction, operation, closure/decommissioning or project abandonment, and restoration/reclamation activities). The worker education program will provide interpretation for non-English speaking workers, and provide the same instruction for new workers prior to their working on site. As appropriate based on the activity, the program will contain information about:

- Site-specific biological and nonbiological resources.
- Information on the legal protection for protected resources and penalties for violation of federal and state laws and administrative sanctions for failure to comply with LUPA CMA requirements intended to protect site-specific biological and nonbiological resources.
- The required LUPA and project-specific measures for avoiding and minimizing effects during all project phases, including but not limited to resource setbacks, trash, speed limits, etc.
- Reporting requirements and measures to follow if protected resources are encountered, including potential work stoppage and requirements for notification of the designated biologist.
- Measures that personnel can take to promote the conservation of biological and nonbiological resources.

2.8.2. Air Quality

APM AIR-1 **Tier 4 Construction Equipment.** All construction equipment with rating between 100 and 750 horsepower (hp) will be required to use engines compliant with U.S. 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, documentation of the unavailability will be provided.

2.8.3. Aesthetics

APM AES-8 **Night Lighting during Construction of Facilities (from the POD).** If associated with a significant aesthetic impact, night lighting for construction activities, staging areas and other areas used for construction, and nighttime facility operations shall be the minimum necessary to ensure safety and security for nighttime activities and operations. All night lighting used for construction or operations and maintenance shall orient lights downward and be shielded to eliminate off-site light spill at times when the lighting is in use. Lighting at the proposed facility shall consist of light-emitting diode lights in all areas where nighttime operations or maintenance activities will occur and be either motion-activated or use timers to ensure safety and security and reduce the impact of additional light pollution at night.

2.8.4. Biological Resources

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 BIO-AVI-1 **Nesting Bird Management Plan.** SCE shall prepare a Nesting Bird Management Plan (NBMP) in coordination with CPUC, BLM, CDFW, and USFWS. The NBMP shall describe methods to minimize potential project effects to nesting birds, and avoid any potential for unauthorized take. 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 CPUC and BLM in consultation with 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 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:

- 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.
- A procedure for amendment of the NBMP, should there be changes in applicable state or federal regulations.
- 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).
- A list of the types of project activities (construction, operations, and maintenance) that may occur during nesting season, with a short description of the noise and physical disturbance resulting from each activity.
- Clearing of any vegetation, site preparation in open or barren areas, or other 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 this 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 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:

- 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.
- 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.
- 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 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 CDFW Incidental Take Permit, if such a Permit is necessary. 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 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 CPUC and BLM in consultation with the CDFW and USFWS. The NBMP shall provide a procedure and timing requirements for notifying 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.

The NBMP shall describe any proposed measures or deterrents to prevent or reduce bird nesting activity on 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 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 regard 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 project work areas, bird nesting activity, 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 project's construction activities.

Reporting

Throughout the construction phase of the project, nest locations, 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-2 **Burrowing Owl. 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 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 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 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 project work site, then SCE shall construct at least two replacement burrows within 300 feet of the affected project work site, or in suitable locations within 1/4 mile when suitable locations within 300 feet are not available. Burrow replacement sites shall be in areas of suitable habitat (as described in the TLRR Habitat and Sensitive Species Reports for Control-Haiwee and Ivanpah-Coolwater-Kramer-Inyokern) for burrowing owl nesting, and subject to minimal human disturbance and access. The Plan shall describe measures to ensure that burrow installation or improvements will not affect sensitive species habitat (as described in the TLRR Habitat and Sensitive Species Reports for Control-Haiwee and Ivanpah-Coolwater-Kramer-Inyokern) 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 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: APM BIO-AVI-2 will be implemented throughout the project area prior to the start of construction during the winter burrowing season.

APM BIO-AVI-3 Yellow-Billed Cuckoo

Avoid and minimize impacts. SCE will avoid ground-disturbing activities within habitat (as described in the TLRR Habitat and Sensitive Species Reports for Control-Haiwee and Ivanpah-Coolwater-Kramer-Inyokern) for yellow-billed cuckoo during the nesting season. In the event that activities within yellow-billed cuckoo nesting habitat (as described in the TLRR Habitat and Sensitive Species Reports for Control-Haiwee and Ivanpah-Coolwater-Kramer- Inyokern) are unavoidable, a U.S. Fish and Wildlife Service (USFWS) approved biologist will conduct preconstruction surveys for yellow-billed cuckoo no more than 7 days prior to initial start of construction, if work will occur between March 15 and September 30. Surveys for yellow-billed cuckoo will be conducted in nesting habitat (as described in the TLRR Habitat and Sensitive Species Reports for Control-Haiwee and Ivanpah-Coolwater-Kramer- Inyokern) within approximately 500 feet of the Proposed Project area. Responsible agencies and lead agencies will be notified before implementing pre-construction surveys, and that the methods and results (including the name of the surveyor and dates, time, and locations of all surveys) will be provided promptly to the responsible agencies and lead agencies, before project activities begin. If a breeding territory or nest is confirmed, the USFWS and CDFW will be notified, and an exclusion buffer will be established around the nest in coordination with the USFWS and CDFW. Unless otherwise authorized by the USFWS and CDFW, no Proposed Project activities will occur within the established buffer until it is determined by the biologist that the nest is no longer active. Construction activities in occupied yellow-billed cuckoo habitat (as described in the TLRR Habitat and Sensitive Species Reports for Control-Haiwee and Ivanpah-Coolwater-Kramer-Inyokern) will be monitored by a full-time USFWS- and CDFW-approved biologist.

APM BIO-AVI-4 Golden Eagle

Avoid and minimize impacts. All project activities located within areas identified as habitat (as described in the TLRR Habitat and Sensitive Species Reports for Control-Haiwee and Ivanpah-Coolwater-Kramer-Inyokern) shall implement the following avoidance and minimization measures.

- Golden eagle nest surveys will be performed when construction activities are scheduled to occur in or near golden eagle nesting habitat from January 1-July 31 to determine if any eagle nests are active within a 1-mile radius. Ground-based or helicopter-based survey methods will be developed in coordination with USFWS and will be consistent with current USFWS survey guidelines.
- For construction activity, should an active golden eagle nests be present, the nest shall receive a 1-mile buffer if in line of sight, 0.5-mile buffer if no line of sight—with USFWS concurrence.

Buffers and buffer modifications for golden eagles will be addressed in the Project Nesting Bird Management Plan (BIO-AVI-1).

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 desert tortoise, and will assist in the overall implementation of conservation measures 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 according to the 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.

Coordinate with agencies. BLM will complete formal consultation, pursuant to section 7(a)(2) of the Endangered Species Act, with the FWS prior to the onset of ground-disturbing activities. This consultation will address coordination with the agencies.

Avoid and minimize impacts. All project activities located within areas identified as habitat (as described in the TLRR Habitat and Sensitive Species Reports for Control-Haiwee and Ivanpah-Coolwater-Kramer-Inyokern) shall implement the following avoidance and minimization measures:

- **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 either voluntarily moved away from the equipment or vehicle.
- **Excavation of Desert Tortoise Burrows.** Should it prove necessary to excavate a desert tortoise from its burrow to move it out of harm's way, the authorized biologist will be responsible for following the appropriate protocols outlined in the 2009 USFWS Desert Tortoise Field Manual.
- **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).
- **Pets Prohibited.** Employees will not bring pets or other animals to the Proposed Project area, unless the animal is Americans with Disabilities Act (ADA) compliant.
- **Vehicle Travel.** Vehicular traffic will not exceed 15 miles per hour within the areas not cleared by protocol level surveys where desert tortoise may be impacted.
- **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 Project footprint, as required in all applicable permits or habitat conservation plans.

Wildlife Attractants. All trash, food waste, water sources will be strictly controlled and monitored to ensure that no food or water attractants for tortoise or common raven are available on the work sites during or following project activities.

APM BIO-HERP-9 Northern Leopard Frog

Pre-construction survey/Construction monitoring. Prior to initial ground-disturbing activities, a qualified biologist will conduct surveys within areas identified as habitat (as described in the TLRR Habitat and Sensitive Species Reports for Control-Haiwee and Ivanpah-Coolwater-Kramer-Inyokern) for this species. Biological monitors shall monitor all construction activities in areas identified as northern leopard frog habitat (as described in the TLRR Habitat and Sensitive Species Reports for Control-Haiwee and Ivanpah-Coolwater-Kramer-Inyokern). The responsible agencies and lead agencies will be notified before implementing pre-construction surveys, and that the methods and results (including the name of the surveyor and dates, time, and locations of all surveys) will be provided promptly to the responsible agencies and lead agencies, before project activities begin.

Avoid and minimize impacts. All project activities located within areas identified as habitat (as described in the TLRR Habitat and Sensitive Species Reports for Control-Haiwee and Ivanpah-Coolwater-Kramer-Inyokern) shall implement the following avoidance and minimization measures:

- Spill Prevention. All fueling and maintenance of vehicles and other equipment and staging areas will occur at least 100 feet from any riparian and aquatic habitat, unless full containment can be implemented. All workers will be informed of the importance of preventing spills and the appropriate measures to take should a spill occur.
- 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 Project footprint. Motor vehicle speeds along Project routes and access roads within areas identified as habitat for northern leopard frog (as described in the TLRR Habitat and Sensitive Species Reports for Control-Haiwee and Ivanpah-Coolwater-Kramer-Inyokern) will not exceed 20 miles per hour.

APM BIO-MAM-1 Mohave Ground Squirrel

Coordinate with CDFW. SCE intends to apply for a state incidental take permit 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 ITP consultation.

Typical permit conditions that could be implemented may include, but not be limited to:

- **Relocation plan.** An MGS relocation plan will be developed by SCE and approved by CDFW prior to the beginning of project activities in MGS habitat. The relocation plan will include, but not be limited to, trapping methods, timing, burrow excavation methods, 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.
- **Designated biologist.** A qualified MGS biologist authorized by CDFW to handle MGS will be on-site or available for a same day response when project activities occur in MGS habitat.

- **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.
- **Preconstruction 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.
- **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.
- **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.

Regardless of permit conditions that may be imposed, all project activities located within areas identified as suitable habitat shall implement the following avoidance and minimization measures:

- **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 Project footprint. Motor vehicle speeds along Project routes and access roads within MGS habitat will not exceed 15 miles per hour.
- **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 a MGS is trapped and does not leave on its own, the designated biologist will move the animal according to the ITP conditions.
- **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.
- **Trash disposal.** Trash and food items will be contained in closed containers and removed daily to reduce attracting predators.
- **Pets Prohibited.** Employees will not bring pets or other animals to the Proposed Project area, unless the animal is ADA compliant.

Upon project completion, SCE will submit to the BLM a report containing at a minimum: locations for occurrences of Mohave ground squirrel (MGS), locations of relocated MGS, and occurrence details (number of individuals, age, etc.).

APM BIO-MAM-5 Bighorn Sheep – Nelson's /Desert Bighorn Sheep

Pre-construction survey/Construction monitoring. Prior to initial ground-disturbing activities, a qualified biologist will conduct surveys within 2 miles from construction work areas identified as habitat (as described in the TLRR Habitat and Sensitive Species Reports for Control-Haiwee and Ivanpah-Coolwater-Kramer-Inyokern) for bighorn sheep during the peak lambing period Feb-May. During construction, monitoring by a qualified biologist will be implemented in occupied areas within the range of BHS between Feb 1 – Sept 30. The biological monitors will halt construction activities if BHS are within 500 feet of work areas or display signs of disturbance.

Coordinate with agencies. SCE shall provide survey results to CDFW, BLM, and CPUC prior to conducting construction activities if work is planned within bighorn sheep (BHS) habitat (as described in the TLRR Habitat and Sensitive Species Reports for Control-Haiwee and Ivanpah-Coolwater-Kramer-Inyokern) in the Cady Mountains and Clark Mountains.

Avoid and minimize impacts. All project activities located within areas identified as BHS habitat (as described in the TLRR Habitat and Sensitive Species Reports for Control-Haiwee and Ivanpah-Coolwater-Kramer-Inyokern) shall implement the following avoidance and minimization measures:

- **Limited Operating Period.** SCE shall avoid construction activities within one-mile of bighorn sheep lambing areas during the lambing period February 1 – May 30, and from identified water sources during the dry summer months, between May 1 – September 30, in the Cady Mountains and Clark Mountains. This measure does not apply to emergencies.
- **Pets Prohibited.** Employees will not bring pets to the Proposed Project area, unless the animal is ADA compliant. Helicopter Avoidance. Helicopter flight paths and activities will be seasonally adjusted by implementing a one-mile horizontal avoidance buffer and a minimum 1,500-foot altitude around bighorn sheep lambing areas during the lambing season and known water sources during the dry summer months.
- **Wildlife attractants.** All trash, food waste, water sources will be strictly controlled and monitored to ensure that no food or water attractants for bighorn sheep are available on the work sites during or following project activities.

APM BIO-MAM-6 Bats, common and sensitive species

Pre-construction Surveys. A qualified bat biologist will conduct surveys before the start of construction to identify active bat roosting or maternity colonies within or adjacent to project impact areas. Trees, rock outcrops, caves, and mines with bat roost potential will be assessed for the presence of bats during the maternity season (April 15 - August 15) or winter torpor season (October 31 - February 15). For the maternity season, a one-night visual emergence survey during acceptable weather conditions (e.g., no rain or high winds, night temperatures >45F) may be employed to determine presence. Alternatively, the roost can be physically examined if conditions permit (e.g., remote cameras or lift equipment).

High-value habitat features (large tree cavities, crevices, bark fissures, basal hollows, loose or peeling bark, larger snags, palm trees with intact thatch, mines, rock outcrops, buildings, etc.) will be identified and the area around these features searched for bats and bat sign (guano, culled insect parts, staining, etc.). Riparian woodland, orchards, and stands of mature broadleaf trees shall be considered potential habitat for solitary foliage roosting bat species, such as the solitary western red bat and western yellow bat.

If no roosts (maternity, wintering, or otherwise) are present, tree trimming/removal may continue as planned. If an active roost has been identified or lasiurine bats are present, removal of trees around the roost would be conducted between September 15 - October 30, and February 15 - April 15, which corresponds to time periods when bats are active, not in torpor, and not caring for non-mobile young.

Removal of trees requires the following two-step process prior to trimming/removal:

- On Day 1 under the supervision of a qualified bat biologist, Step 1 would include branches and limbs with no cavities removed by hand (e.g., using chainsaws). This would create a disturbance (noise and vibration) and physically alter the tree. Bats roosting in the tree would either abandon the roost immediately (rarely) or, after emergence, would avoid returning to the roost.
- On Day 2, Step 2 of the tree removal may occur, which would be removal of the remainder of the tree. Trees that are only to be trimmed and not removed would be processed in the same manner; if a branch with a potential roost must be removed, all surrounding branches would be trimmed on Day 1 under supervision of a qualified bat biologist and then the limb with the potential roost would be removed on Day 2.

Construction Monitoring. If a colonial or solitary maternity roost was located, tree/ structure removal will be avoided between April 15 and August 15 (the maternity period) to avoid impacts to active maternity roosts (reproductively active females and dependent young). A qualified biologist will determine the appropriate buffer area around active nest(s) and provisions for buffer exclusion areas. Unless restricted by the qualified biologist, construction vehicles will be allowed to move through a buffer area with no stopping or idling. The qualified biologist will determine, evaluate, and modify buffers as appropriate based on species tolerance and behavior, the potential disruptiveness of construction activities, and existing conditions. Furthermore, the roost will be monitored to determine activity. Roost monitoring will be conducted by qualified biological monitors with knowledge of bat behavior under the direction of a CDFW qualified bat biologist. The qualified biological monitor will observe and document implementation of appropriate buffer areas around active roosts(s) during project activities.

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 or revegetated. 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 and revegetation will be determined by the resource agencies through the permitting process.

SCE will 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 will be submitted to 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 revegetation or restoration sites, the HRP will include:

- Revegetation and restoration goals and objectives based on vegetation type and jurisdictional status of each site.
- Quantitative restoration success criteria.

- 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.
- Maintenance details, which may include irrigation or hand-watering schedule and equipment, and erosion control.
- 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.
- 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 temporary disturbance in disturbed areas such as roads or agricultural lands, the goal of the HRP will be revegetation to minimize spread of invasive plants, dust generation, and soil erosion. For revegetation sites the goals, objectives, and success criteria specified in the HRP will be limited to 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 revegetation sites.

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 and adjust success standards accordingly in coordination with the agencies.

In all restoration area, seed and/or potted nursery stock of locally native species will be used. The list of plants observed during botanical surveys of the 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 for up to five (5) years or the defined success criteria are achieved. SCE will be responsible for implementing adaptive management as needed. Following adaptive management, each site will continue to be subject to the success criteria required for the initial restoration.

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 project activities. The IPMP also must meet BLM's requirements for NEPA disclosure and analysis if herbicide

use is proposed for the 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) identified by BLM as special concern. The IPMP will be implemented throughout 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 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 project region and identify threat rankings and potential for 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 of all invasive plants of concern in areas (both within and outside the ROW) subject to 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 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 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 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. 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 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 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 project-related invasive plant infestation is located (e.g., located on a 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 relevant 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 Aminopyralid, Fluroxypyr, and Rimsulfuron on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement (BLM, 2016), 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, California Rare Plant Rank (CRPR) 1 or 2, or California BLM Special Status herbaceous plants that may be located on the project disturbance areas or surrounding buffer areas.

Pre-construction survey. Pre-construction clearance surveys would 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. The pre-construction survey will be performed to re- identify the location of plants that were previously identified during baseline special status species survey(s) and to identify the presence of new (previously undescribed) special-status species. Disturbance free buffers for herbaceous species shall be 50-ft from the individual and/or occurrence boundary. If a smaller buffer is required, SCE shall obtain in the field concurrence of the smaller buffer from a BLM-and/or CPUC-approved biological monitor(s), depending on underlying land ownership.

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, BLM, CDFW, and/or USFWS will be notified.

Focused Survey. For construction areas where focused surveys have not occurred, focused surveys will take place prior to construction. Focused surveys will be conducted consistent with methodology described in the Project Biological Technical Report.

Restoration and Mitigation

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

- Coordinate with Agencies. Agencies shall approve any impacts to special status plants. Impacts in excess of 10% of any occurrence shall be restored or mitigated.
- Habitat Restoration and Revegetation. A Habitat Restoration Plan (HRP) shall address topsoil, plant or propagules salvage, and restoration. Approval of the HRP by appropriate

agencies is required before impacts to special-status plant occurrences are allowed. For more information see APM BIO-RES-1.

- Salvage. 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).
- 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, or California BLM Special Status, plant occurrences at a 1:1 ratio of acreage for any occupied habitat affected by the project. Occupied habitat will be calculated on the 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. A mitigation ratio higher than 1:1 may be necessary if so- identified in an applicable federal or state land use management plan or conservation plan, or in a term or condition attached to a project authorization.

Annual construction monitoring reports shall be submitted to CPUC and BLM. Reports shall include, but not be limited to, 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.

APM BIO-BOT-2 **Special-status Perennial Plants and Other Species.** SCE shall avoid, minimize or mitigate impacts to sensitive plants and natural communities, including any smoke trees (*Psorothamnus spinosus*), mesquites (*Prosopis* spp.), all species of the family *Agavaceae* (including Mojave yucca and Joshua tree), palo verde (*Parkinsonia* spp.), desert pincushion (*Coryphantha chlorantha*), matted cholla (*Grusonia parishii*), curved-spine beavertail (*Opuntia curvispina*), Mojave fishhook cactus (*Sclerocactus polyancistrus*) in the project area, or unique riparian vegetation, that may be located on the project disturbance areas or surrounding buffer areas.

Pre-construction survey. Pre-construction surveys would be conducted by a qualified specialist to identify any special-status perennial species or other species of tree, shrub, cactus, or yucca in the project area that require restoration or mitigation.

Surveys would be consistent with the protocol outlined by California Department of Fish and Wildlife (CDFW) Protocols for Surveying and Evaluating Impacts to Species Status Native Plant Populations and Sensitive Nature Communities (May 2018). Prior to the start of construction, 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, shall complete pre-construction surveys in all habitats to identify individuals or occurrences of smoke trees (*Psorothamnus spinosus*), mesquites (*Prosopis* spp.), all species of the family *Agavaceae* (including Mojave yucca and Joshua tree), palo verde (*Parkinsonia* spp.), desert pincushion (*Coryphantha chlorantha*), matted cholla (*Grusonia parishii*), curved-spine beavertail (*Opuntia curvispina*), Mojave fishhook cactus (*Sclerocactus polyancistrus*) in the project area, or unique riparian vegetation. Where these species are known to occur, all work shall occur outside a 50-ft buffer; the buffer will be measured from the drip line or outermost part of the plant. If a smaller buffer is required, SCE shall obtain in the field concurrence of the smaller buffer from a BLM- and/or CPUC-approved biological monitor(s), depending on underlying land ownership. Buffer reductions may occur with the implementation of appropriate minimization measures. A qualified botanist/arborist monitor, with the authority to halt work, shall be present whenever work occurs within reduced buffers for any of these species. If avoidance of listed species is not feasible, SCE will consult with BLM/ CDFW and implement additional measures pursuant to ESA/CESA, required after consultation.

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, BLM, CDFW, and/or USFWS will be notified.

Restoration and Mitigation

- Coordinate with Agencies. Agencies shall approve any impacts to the species.
- Habitat Restoration and Revegetation. If individuals of special-status species cannot be avoided, a Habitat Restoration Plan (HRP) shall address removal or salvage methods, number of individuals to be impacted, and restoration (see BIO-RES-1). Approval of the HRP by appropriate agencies is required before impacts to the given species is allowed.
- Salvage. Native Cactus/ Yucca (Joshua Tree) Removal. Most native cactus and yucca species (Joshua tree and Mohave yucca) can be successfully salvaged and transplanted, and yuccas often provide an important vertical component to wildlife habitat. Therefore, native cactus and yuccas (excluding chaparral yucca, *Y. whipplei*), shall be avoided or salvaged as follows:
  - On BLM lands, SCE will prepare and implement a HRP. The goal shall be maximum practicable survivorship of salvaged plants, (i.e., moving plants only once). The HRP will include at minimum: (a) species and locations of plants identified for salvage; (b) criteria for determining whether an individual plant is appropriate for salvage; (c) the appropriate season for salvage; (d) equipment and methods for collection, transport, and re-planting, to retain intact soil conditions and maximize success; (e) a requirement to mark each plant to identify the north-facing side prior to transport, and replant it in the same orientation; (f) details regarding storage of plants for each species; (g) location of the proposed recipient site, and detailed site preparation and plant introduction techniques, as applicable; (h) a description of the irrigation and other maintenance activities, as applicable; (i) success criteria,

including specific timeframe for survivorship of each species; and (j) a detailed monitoring program, commensurate with the HRP goals. Invasive plant control for special-status plants will be addressed in the Invasive Plant Management Plan (IPMP, APM BIO-RES-2).

- Tree Removal. Tree removal and trimming would be designed to minimize the total number of individual trees removed or significantly trimmed. A qualified arborist would be onsite to make recommendations on trimming and removal. Protection and replacement of trees impacted by project activities would be mitigated consistent with applicable jurisdiction and agency requirements, and included in the HRP.
- Offsite Compensation. If restoration is not feasible, SCE shall provide compensation lands consisting of habitat occupied by the impacted sensitive species at a 1:1 ratio of individuals or acreage, for any occupied habitat affected by the project. Occupied habitat will be calculated on the 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.

Annual construction monitoring reports shall be submitted to CPUC and BLM. Reports shall include, but not limited to, details of individuals or occurrences impacted (removed or salvaged), salvage, temporary storage, if applicable, and final transplant locations, including species, number, size, condition, at a minimum; 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.

APM BIO-CNDDB-1 **Data Entry (from the POD).** Special status species occurrence data will be entered into the California Natural Diversity Database within one year of project completion.

APM WET-1 **Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats.** The project shall avoid and/or minimize impacts to all state and federally jurisdictional waters, wetlands, and riparian habitat that occur within the Project area to the maximum extent 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 to the maximum extent feasible.

The implementation of appropriate Best Management Practices (BMPs) (e.g., silt fencing, straw wattles, secondary containment, avoiding fueling in close proximity to waters, etc.) shall be utilized to ensure that indirect impacts to jurisdictional waters, wetlands and riparian areas are avoided or minimized to the maximum extent feasible. BMPs are also necessary to reduce the risk of an unintended release of sediments or other materials into jurisdictional waters. New and upgraded roadways will use at-grade type stream crossings where possible. Stockpiled and bermed sediment will be redistributed or removed from the site so as not to cause water impoundment or induce hydromodification. New poles will be sited outside stream channels to the extent possible.

If permanent impacts to waters, wetlands, and riparian habitats are unavoidable, they shall be mitigated for at a minimum of a 1:1 ratio, or at a ratio determined by the applicable Resource or Land-Use 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, Bureau of Land Management, etc.).

2.8.5. Cultural Resources

APM CUL-1 **Develop a Cultural Resource Management Plan (CRMP).** SCE will prepare and submit for approval a Cultural Resource Management Plan (CRMP) to guide all cultural resource management activities during project construction. Management of cultural resources will follow all applicable federal and state standards and guidelines for the management of historic properties/historical resources, including as identified or determined through the Section 106 review process. The CRMP will be submitted to the CPUC and BLM for review and approval at least 90 days prior to the start of construction. The CRMP will 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 Resources Management Plan: The CRMP will 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 will be included that details how NRHP- and CRHR-eligible properties will be avoided and protected during construction. Measures will include, at a minimum, designation and marking of Environmentally Sensitive Areas (ESAs), archaeological monitoring, personnel training, and reporting. The plan will 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 will 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 will 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 will 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 will include methods, timelines for assessing NRHP and/or CRHR eligibility, formulating mitigation plans, and implementing treatment. Mitigation and treatment plans for unanticipated discoveries will be reviewed by tribal stakeholders and approved by the BLM and CPUC, prior to implementation.
- Data Analysis and Reporting: The CRMP will 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 BLM and CPUC, and dissemination of reports to appropriate repositories.

APM CUL-2 **Avoid Environmentally Sensitive Areas (ESA).** SCE will perform cultural resource surveys for any portion of the proposed project APE/API 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 Applicant Proposed Measure CUL-1 (Develop CRMP). Where operationally feasible, all NRHP- and CRHR-eligible resources will 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 will be avoided by all project construction, operation and maintenance, and restoration activities, where feasible.

Avoidance measures will 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 **Conduct Construction Monitoring.** Archaeological monitoring will occur as outlined in the CRMP. Archaeological monitoring will be conducted by a qualified archaeologist familiar with the types of historic and prehistoric resources that could occur within the project areas. The qualifications of the principal archaeologist and monitors will be approved by the BLM and CPUC. Monitoring reports will be submitted to the BLM and CPUC on a monthly basis. A Tribal Participant may be required at culturally sensitive locations in consultation with the BLM and CPUC and/or as outlined in the CRMP.

APM CUL-4 **Properly Treat Human Remains.** SCE will 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 BLM and County Coroner (California Health and Safety Code 7050.5(b)) will 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 will 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 CPUC will be notified immediately and the remains will be treated in accordance with Health and Safety Code Section 7050.5, CEQA Section 15064.5(e), and Public Resources Code Section 5097.98. SCE will assist and support the BLM and/or CPUC, as appropriate, in all required NAGPRA and Section 106 actions, government to-government and consultations with Native Americans, agencies, and consulting parties as requested by the BLM and/or CPUC. SCE will comply with and implement all required actions and studies that result from such consultations.

APM CUL-5 **Train Construction Personnel.** Prior to initiating construction, all construction personnel will 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 will also inform all construction personnel of the procedures to be followed upon the discovery of cultural materials. All personnel will 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) will 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 the post-discovery review of archaeological deposits, how to operate adjacent to and avoid all ESAs, and procedures to treat post- discovery reviews.

2.8.6. Tribal Cultural Resources

APM TCR-1 **Tribal Monitoring.** An archaeological monitor, and tribal monitor that is culturally affiliated with the project area, may be present for all ground-disturbing activities within or directly adjacent to identified TCR(s). The archaeological and tribal monitors will consult the CRMP to determine when to increase or decrease the monitoring effort should the monitoring results indicate a change is warranted. Monitoring reports will be prepared and submitted to the BLM and 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).

2.8.7. Hazards and Hazardous Materials

APM HAZ-1 **Prepare a Hazardous Materials and Waste Management Plan.** SCE will prepare and implement a Hazardous Materials and Waste Management Plan (HMWMP) during project construction. The plan 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 HMWMP 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, PPE training, and release reporting requirements. It will also include fueling and maintenance procedures for helicopters and construction equipment.

If on site refueling is necessary, BMPs shall be implemented in accordance with the project SWPPP. Refueling stations and fuel tanks will be located, maintained, and operated during construction in accordance with applicable laws and regulations pertaining to hazardous materials. If more than 1,320 gallons of petroleum products in containers greater than 55-gallons, a SPCC plan must be created prior to products being brought on-site.

All construction personnel, including environmental monitors, will be made aware of state and federal emergency response reporting guidelines for accidental spills.

APM HAZ-2 **Prepare a Soil Management Plan.** 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. The Soil Management Plan will direct that during grading or excavation work; the construction contractor shall observe the exposed soil for visual and olfactory evidence of contamination. If visual contamination indicators are observed during construction, potentially contaminated soil will be segregated, sampled, and tested to determine appropriate treatment and disposal options. Work in the area of the potentially contaminated soil will be stopped until appropriate measures are determined based on the testing results and are taken to protect human health and the environment. If the soil is classified as hazardous, it will be properly managed on location and transported in accordance with the 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. If potentially-contaminated groundwater is encountered, then groundwater samples will be collected and tested to determine appropriate treatment and disposal. Hazardous materials will be transported, used, and disposed of in accordance with applicable rules, regulations, and SCE standard protocols designed to protect the environment, workers, and the public.

APM HAZ-3 **Prepare and Implement a Fire Prevention and Emergency Response Plan.** A Fire Prevention and Emergency Response Plan will be developed to ensure the health and safety of construction workers, SCE personnel, and the public during Project construction. The Plan shall cover:

- The purpose and applicability of the plan
- Responsibilities and duties
- Project areas where the plan applies

- Procedures for incorporating Red Flag Warnings, Fire Potential Index (FPI), Project Activity Level (PAL), and equivalent indicators in determining fire weather related work restrictions
- Procedures for fire reporting, response, prevention, and evacuation routes
- Coordination procedures with federal and local fire officials
- Crew training, including fire safety practices and restrictions
- Fire suppression and communication equipment required to be on hand during construction
- Method for verification that Plan protocols and requirements are being followed
- Post-construction fire prevention and response measures

The Project-specific Fire Prevention and Emergency Response Plan for construction of the project will be prepared by SCE and submitted to CPUC, BLM, CALFIRE, Inyo, Kern and San Bernardino counties, and local municipal fire agencies for review at least 30 days prior to initiation of construction. SCE will address all comments received from reviewing agencies and provide the final Fire Prevention and Emergency Response Plan to reviewing agencies for approval prior to initiating construction activities.

2.8.8. Noise

APM NOI-1 **Implement Best Management Practices for Construction Noise.** SCE will employ the following noise-control techniques, at a minimum, to reduce construction noise exposure at noise-sensitive receptors during construction:

- To the extent feasible, construction activities will be confined to daytime, weekday and weekend hours established by the applicable local jurisdiction. 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 will use noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.
- Construction traffic and helicopter flight will be routed away from residences and schools, where feasible.
- Unnecessary construction vehicle use and idling time will be minimized. If a vehicle is not required for use immediately or continuously for construction activities, its engine will be shut off.

2.8.9. Paleontological Resources

APM PAL-1 **Develop Paleontological Resource Mitigation and Monitoring Plan.** SCE will prepare a Paleontological Resources Mitigation and Monitoring Plan (PRMMP) to guide all paleontological management activities during project construction. The PRMMP will be submitted to the CPUC and BLM for review and approval prior to the start of construction. The PRMMP will be prepared by a qualified paleontologist, based on Society of Vertebrate Paleontology (SVP) 2010 guidelines, and meet all regulatory requirements. The qualified paleontologist will have a Master's Degree or Ph.D. in paleontology, have local paleontology knowledge, and will 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 will require a qualified paleontological monitor for all

construction-related ground disturbance that reach approximate depths for significant paleontological resources in sediments with moderate (PFYC 3a) to very high (PFYC 5) and Unknown sensitivity. Sediments of undetermined sensitivity will be monitored on a part-time basis as outlined in the PRMMP. Sediments with very low or low sensitivity will not require monitoring. Paleontological monitors will meet standard qualifications per the SVP (2010).

- **Unanticipated Discovery Protocol:** Detail procedures for 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 will 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 **Monitor Construction for Paleontological Resources.** Based upon the paleontological sensitivity assessment and Paleontological Resource Mitigation and Monitoring Plan consistent with Mitigation Measure PAL-1 (Develop Paleontological Resource Mitigation and Monitoring Plan), SCE will conduct full-time construction monitoring through its qualified paleontological monitor(s) in areas determined to have moderate (PFYC 3a) to very high (PFYC 5) sensitivity. Quaternary paleosols will be included in the PFYC 3a designation. Sediments of very low (PFYC 1), low (PFYC 2), or unknown (PFYC 3b) sensitivity shall not be monitored, unless geologic mapping is found to be in error. Paleontological resource monitors per SVP (2010) shall have the equivalent of the following qualifications:

- BS or BA degree in geology or paleontology and one-year experience monitoring in the state or geologic province of the specific project. An associate degree and/or demonstrated experience showing ability to recognize fossils in a biostratigraphic context and recover vertebrate fossils in the field may be substituted for a degree. An undergraduate degree in geology or paleontology is preferable, but is less important than documented experience performing paleontological monitoring, or
- AS or AA in geology, paleontology, or biology and demonstrated two years of experience collecting and salvaging fossil materials in the state or geologic province of the specific project, or
- Enrollment in upper division classes pursuing a degree in the fields of geology or paleontology and two years of monitoring experience in the state or geologic province of the specific project.

Monitors must demonstrate proficiency in recognizing various types of fossils, in collection methods, and in other paleontological field techniques. Copies of Monitoring Reports shall be submitted to the BLM and CPUC on a weekly basis.

APM PAL-3 **Final Reporting and Curation.** At the conclusion of laboratory work, a final report will be prepared describing the results of the paleontological monitoring efforts associated with the project. The report will include a summary of the field and laboratory methods, an overview of the Proposed Project area geology and paleontology, a list of taxa recovered (if any) and their scientific significance, and recommendations. If the monitoring effort produces fossils, then a copy of the report will also be submitted to the designated museum repository. All significant fossils collected will be prepared in a properly equipped paleontology laboratory to a point ready for curation no more than 60 days after all fieldwork analyses are completed. Preparation will include the careful removal of excess matrix from fossil materials and stabilizing and repairing specimens,

as necessary. Following laboratory work, all fossil specimens will be identified to the lowest taxonomic level, catalogued, analyzed, and delivered to an accredited museum repository for permanent curation and storage. The cost of curation is assessed by the repository and is the responsibility of SCE.

APM PAL-4 **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.

2.8.10. Recreation

APM REC-1 **Coordinate Recreation Area Closures (from the POD).** When temporary closures to recreational areas are necessary for construction activities, SCE will coordinate those closures with recreational facility owners.

2.8.11. Transportation and Traffic

APM TRA-1 **Traffic Control Measures.** SCE shall 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 is a member of the California Inter-Utility Coordinating Committee, which published the Manual on Uniform Traffic Control Devices, as amended for the state of California (CA MUTCD; CALTRANS 2018) and using standard templates from the California Temporary Traffic Control Handbook. (CATTCH 2018) This handbook was previously known as the California Joint Utility Traffic Control Manual. (CJUTCM 2010) SCE will follow the recommendations in this manual regarding basic standards for the safe movement of traffic on highways and streets in accordance with Section 21400 of the CVC. These recommendations include provisions for safe access of police, fire, and other rescue vehicles.

APM TRA-2 **Helicopter Flight Plans.** Prior to construction, SCE will consult with the FAA regarding helicopter flight plans that will take place during construction. This consultation will 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 TRA-3 **Pedestrian Routing (from the POD).** Where the proposed project work area encroaches upon a public right-of-way and reduces the existing pedestrian path of travel to less than 48 inches wide, alternate pedestrian routing will be provided during construction activities.

2.9. References

DHS (California Department of Health Services). 2002. An evaluation of the Possible Risks From Electric and Magnetic Fields (EMFs) From Power Lines, Internal Wiring, Electrical Occupations, and Appliances. https://ehtrust.org/wp-content/uploads/CA-EMF-.pdf.

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SCE (Southern California Edison Company). 2023. Cal City Application for Permit to Construct and Proponents Environmental Assessment. https://ia.cpuc.ca.gov/environment/info/esa/CalCity/pdf/A2303XXX-SCE_Cal_City_PTC_Application.pdf.

SCE. 2020. Ivanpah-Control Project Proponent's Environmental Assessment. https://ia.cpuc.ca.gov/environment/info/aspen/ivanpah-control/toc-amended_pea.htm.

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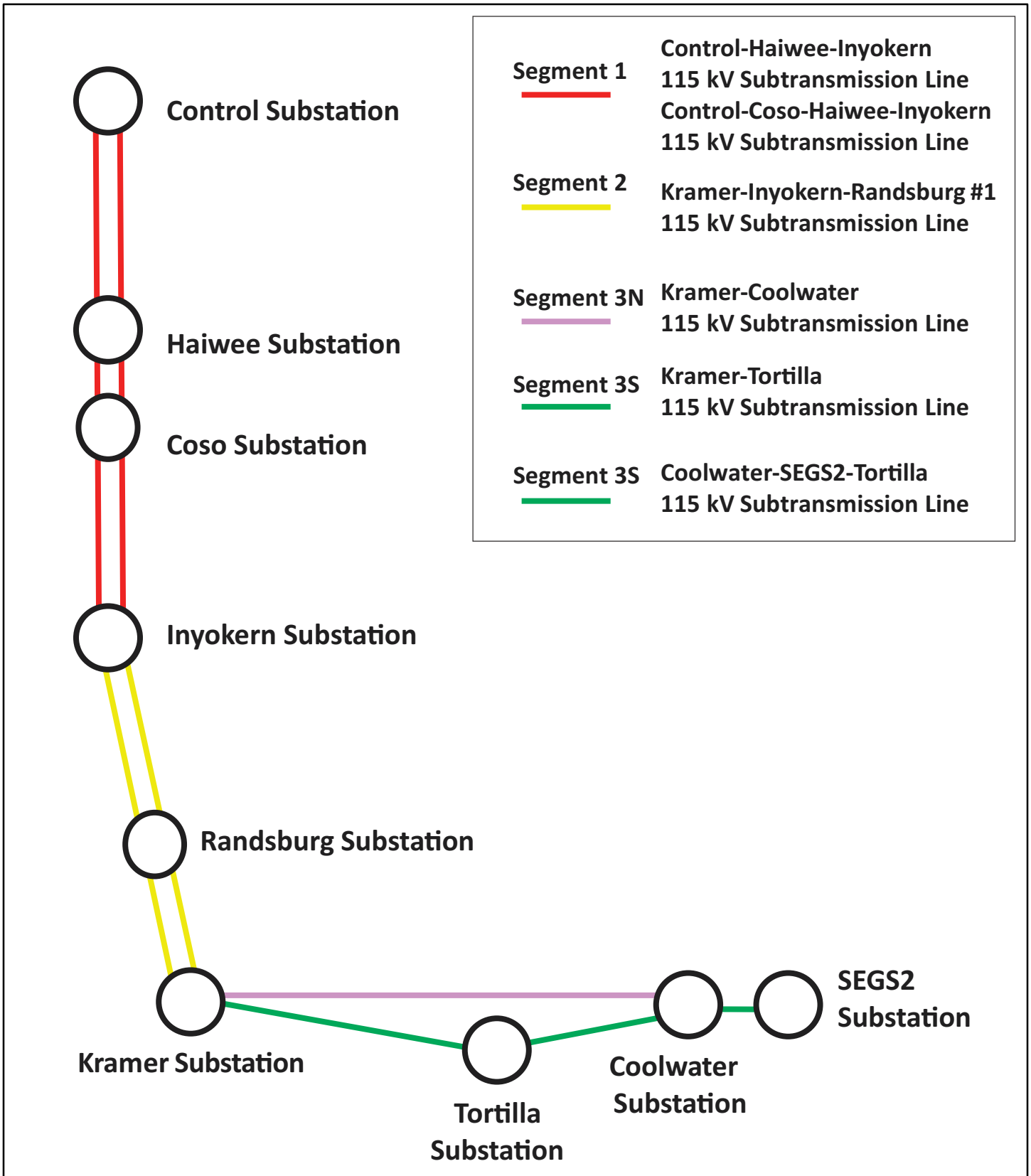
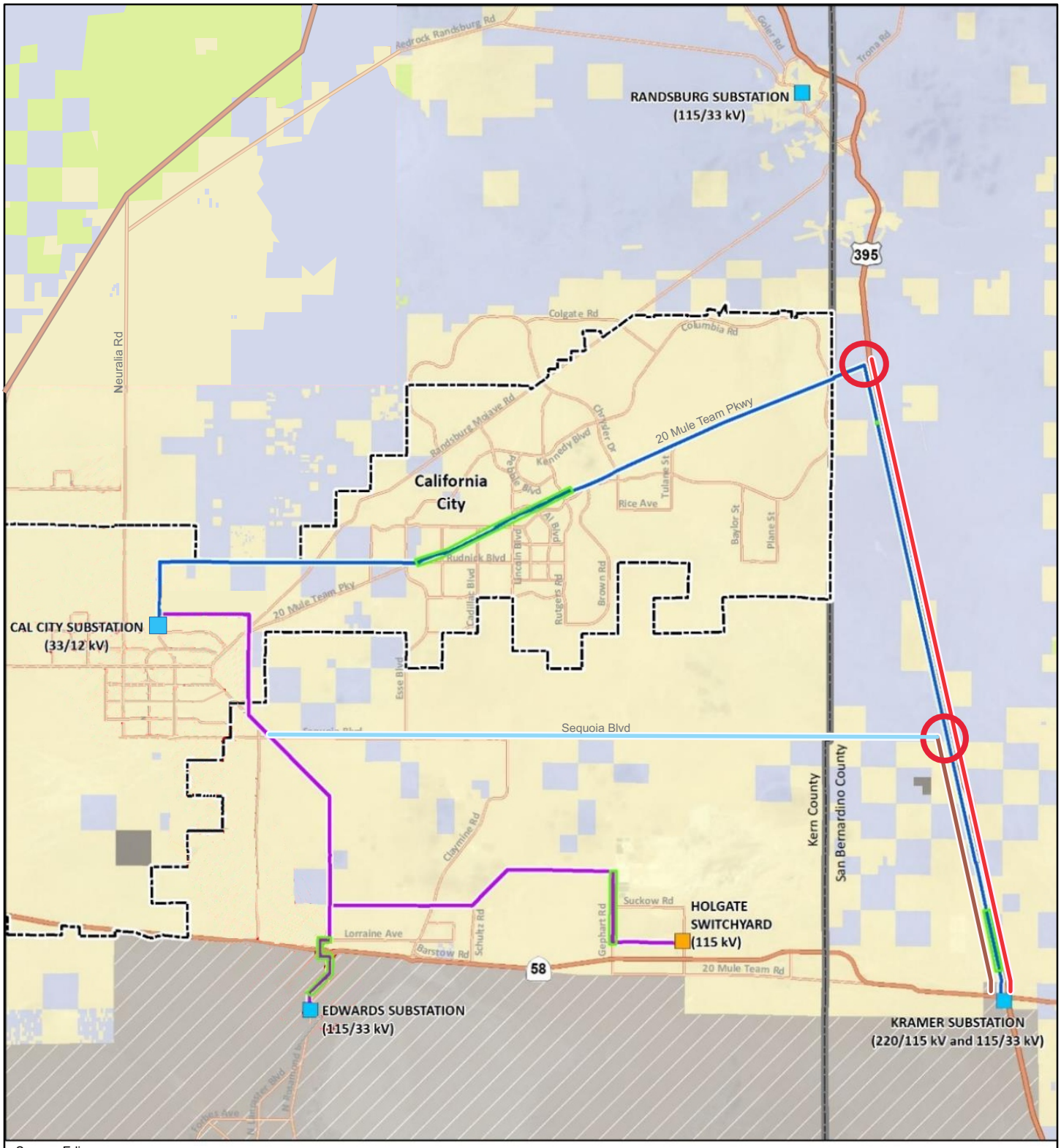


Figure 2-1

Existing Transmission System

Source: SCE.



Source: Edison

Cal City Project

- Cal City-Edwards-Holgate 115 kV Subtransmission Line
- Proposed Kramer-Cal City 115 kV Subtransmission Line
- Kramer-Cal City Sequoia Alternative
- Existing Substation
- Existing Switchyard
- California City Boundary

Ivanpah-Control Project Options

- **Cal City Option** – Kramer-Cal City 115 kV circuit installed on I-C structures
- **Sequoia Option** – Kramer-Cal-City 115 kV circuit installed on I-C structures

0 2,000 Feet

N

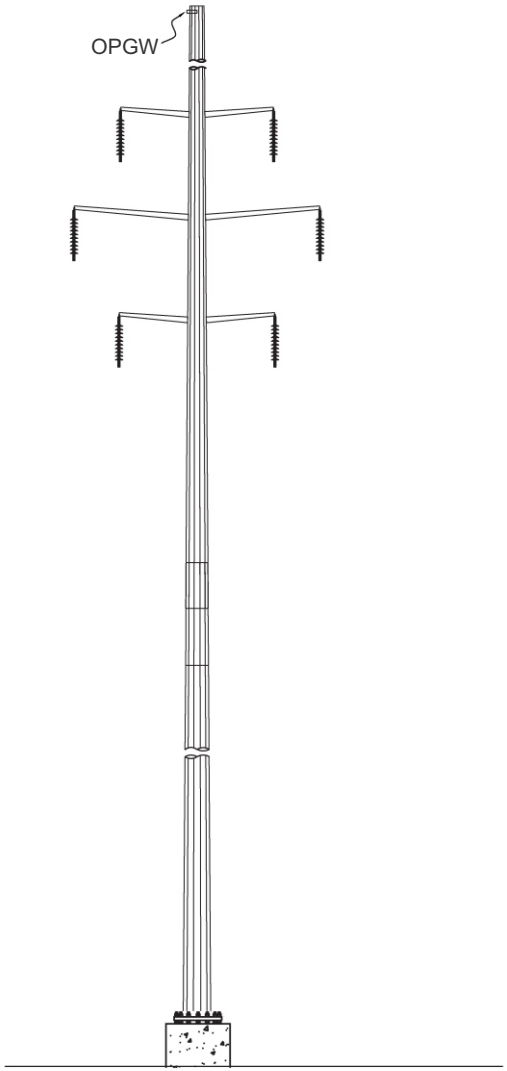
- Distribution Underbuild

Land Ownership

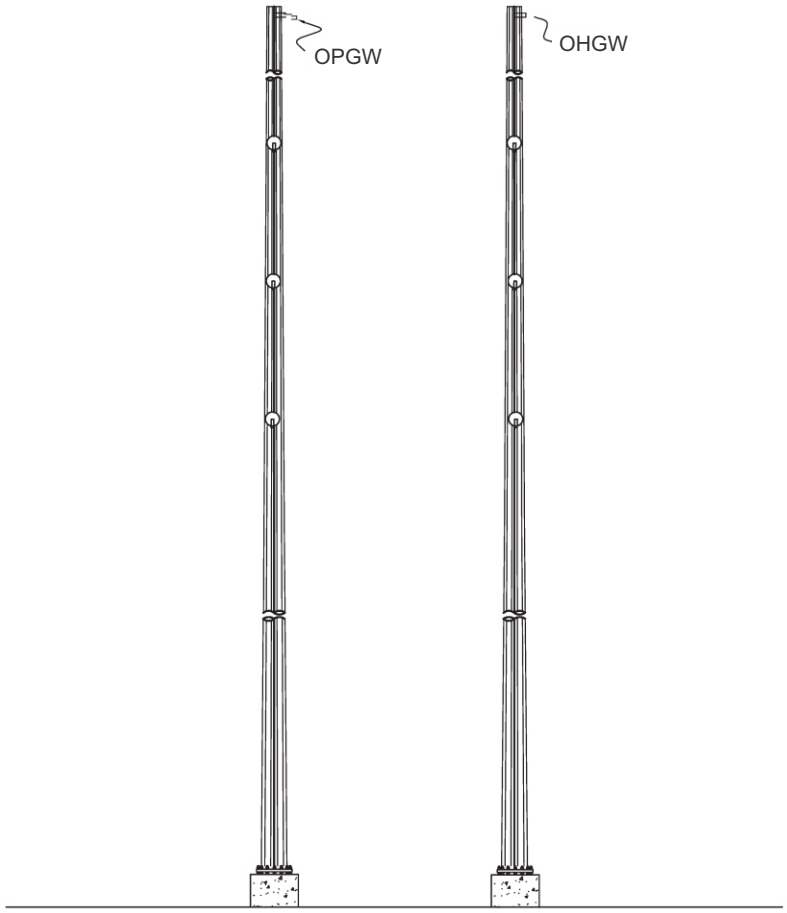
- Bureau of Land Management
- Department of Defense
- Edwards Air Force Base
- State Lands
- Other/Private

Figure 2-2

Cal City Options



TSP, Tangent Structure,
Double Circuit, Segment 1



TSP, 2-Pole Dead-End Structure,
Segment 1

Not to Scale

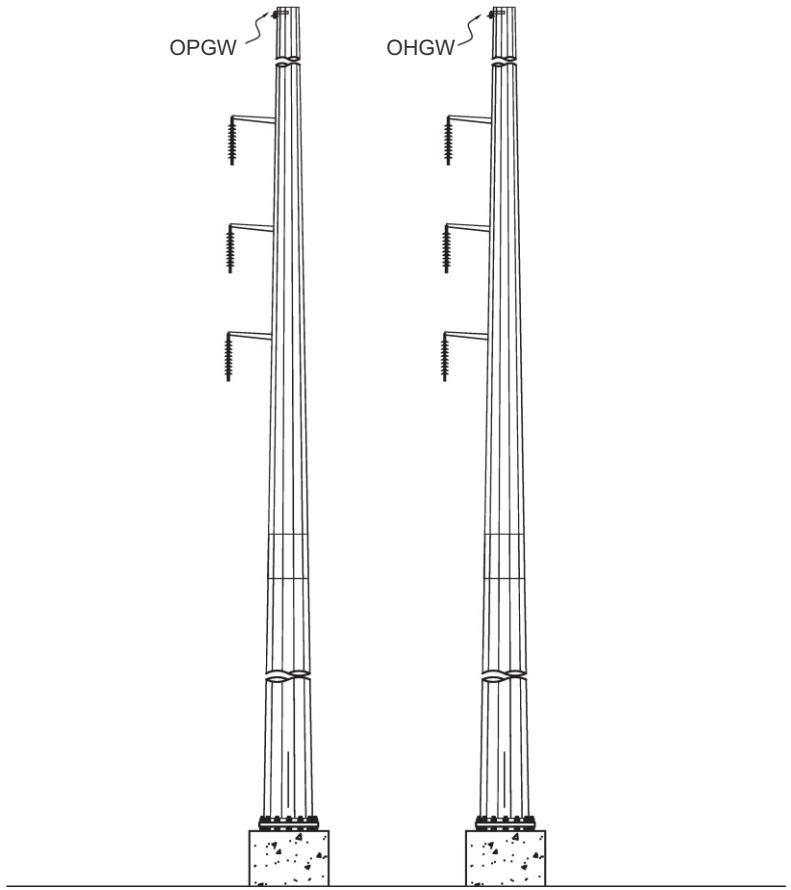
OPGW: Optical Groundwire
OHGW: Overhead Groundwire

See Table B-2 for range of structure heights.

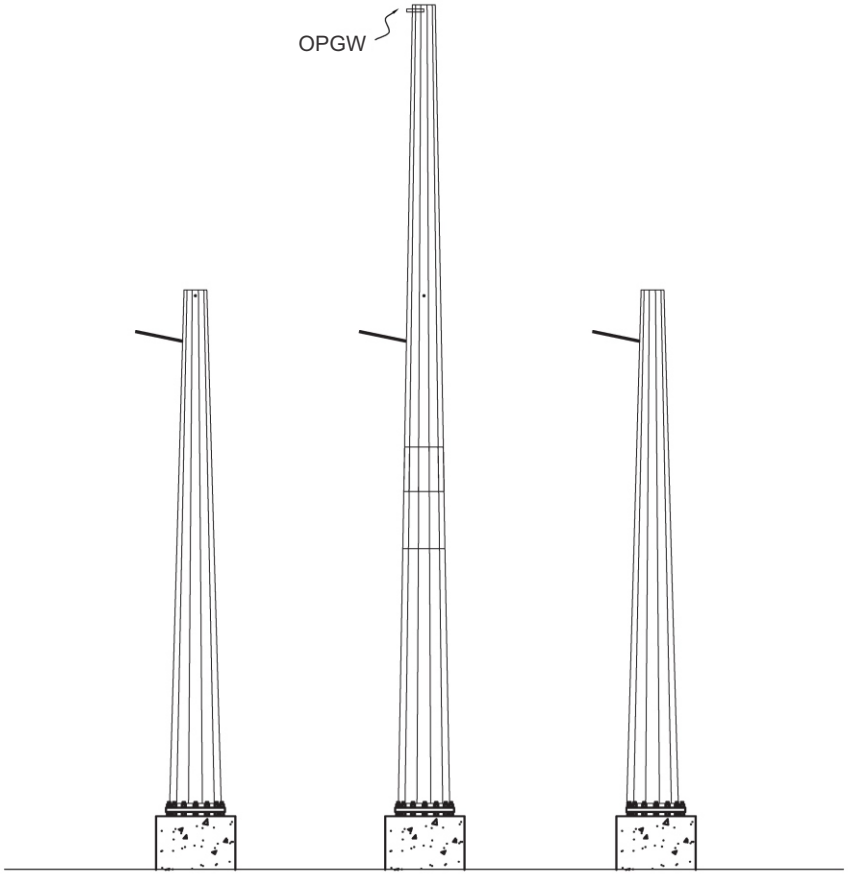
Figure 2-3a

Typical Structure Design

Source: SCE, 2018.



TSP, 2-Pole Running Angle Structure,
Segment 1



TSP, 3-Pole Dead-End Structure,
Segments 1 and 3S

Not to Scale

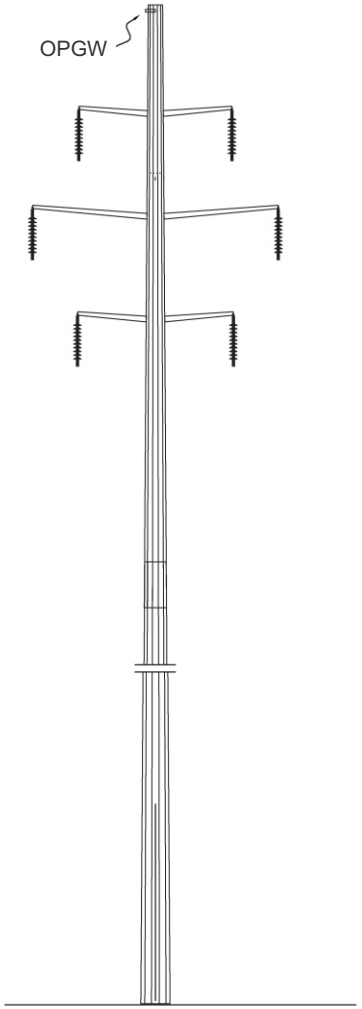
OPGW: Optical Groundwire
OHGW: Overhead Groundwire

See Table B-2 for range of structure heights.

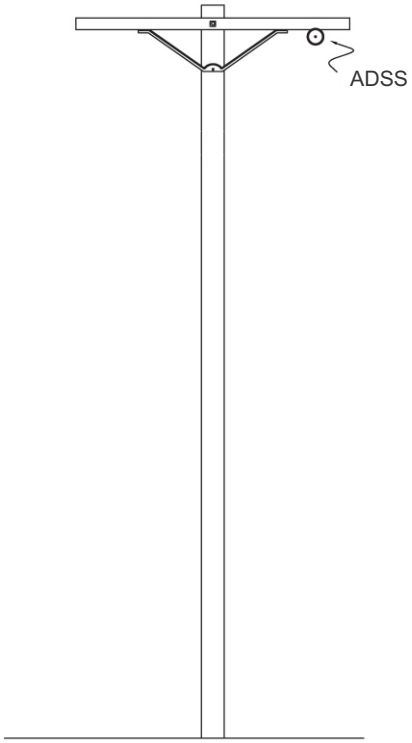
Figure 2-3b

Typical Structure Design

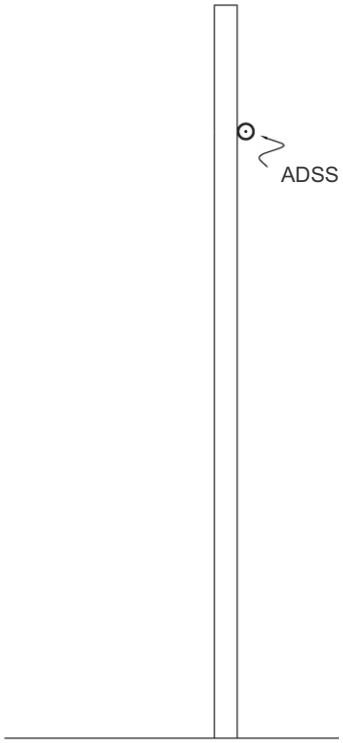
Source: SCE, 2018.

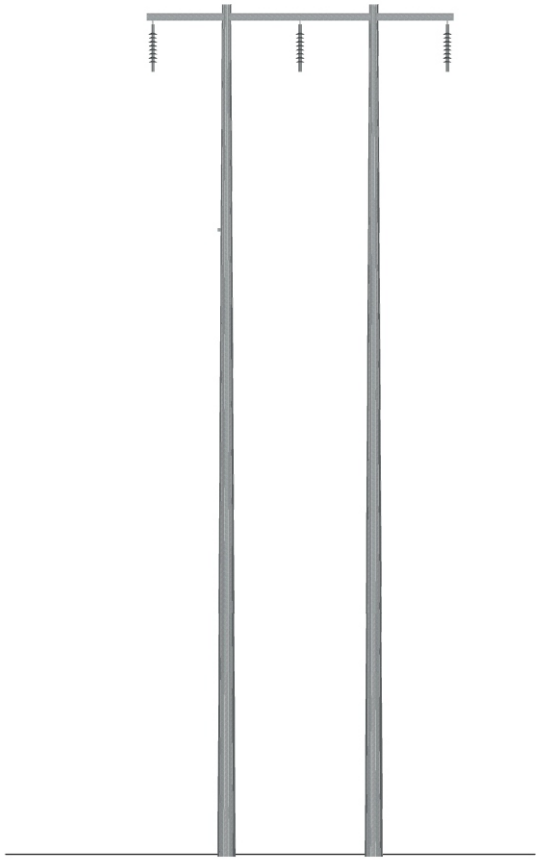


LWS Pole, Tangent Structure,
Segment 1



LWS Pole, Independence
Fiber Optic Tap





LWS or Wood Pole
H-Frame,Tangent Structure,
Segments 3N, 3S, and 4

Not to Scale

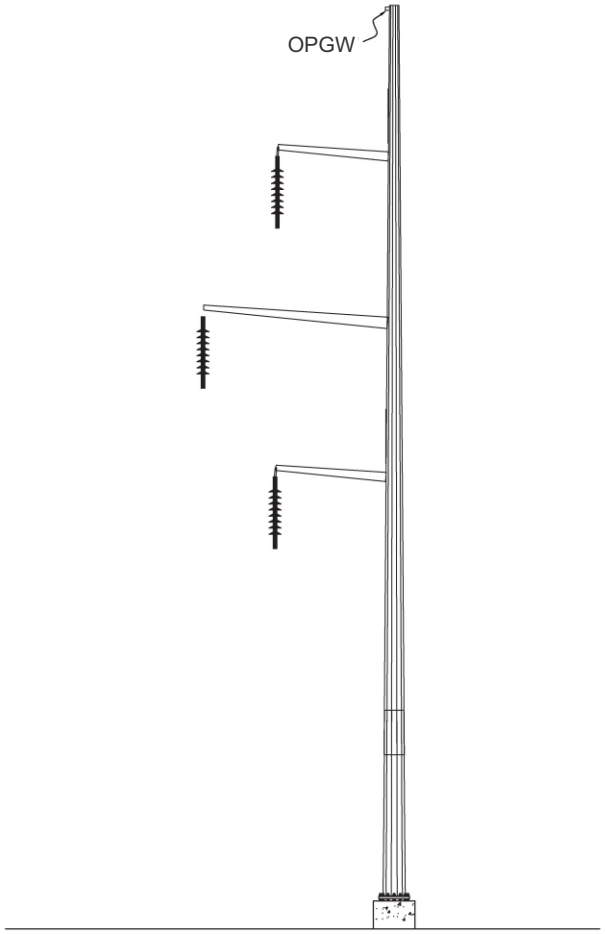
OHGW: Overhead Groundwire
ADSS: All Dielectric Self-Supporting fiber optic cable

See Table B-2 for range of structure heights.

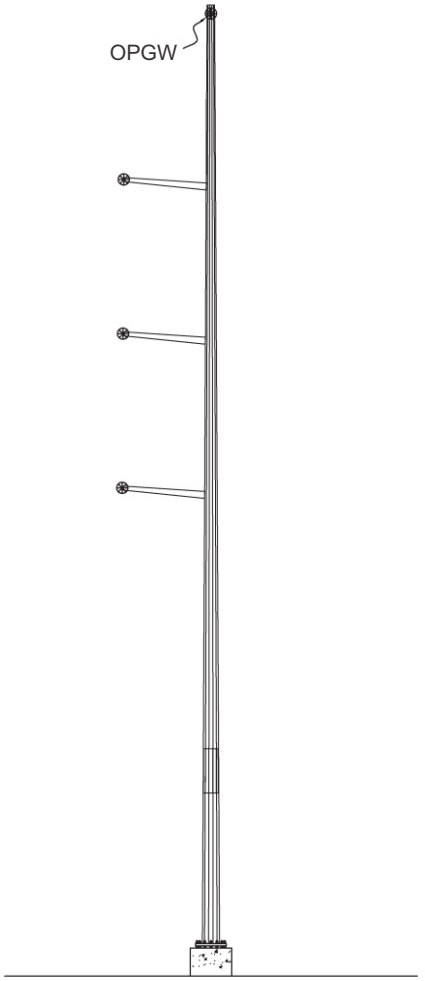
Figure 2-3c

Typical Structure Design

Source: SCE, 2018.



TSP, Suspension Structure
Segment 2



TSP, Dead-End Structure,
Vertical Configuration, Segment 2

Not to Scale

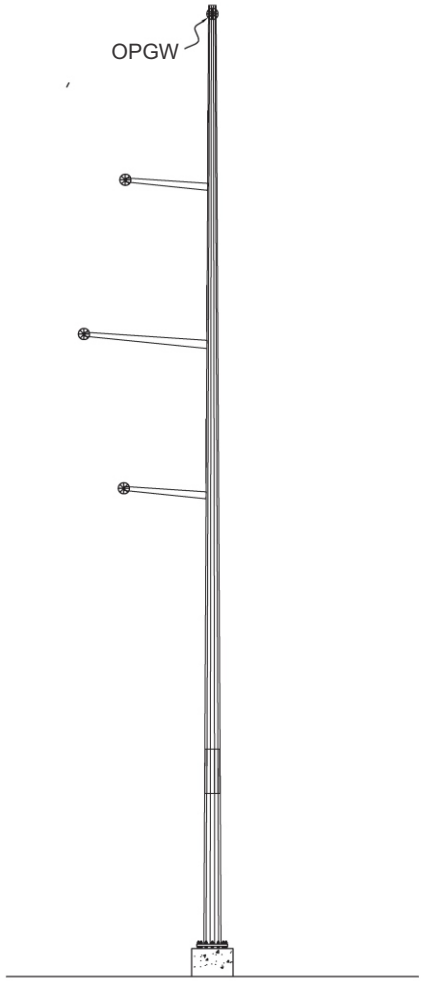
OPGW: Optical Groundwire

See Table B-2 for range of structure heights.

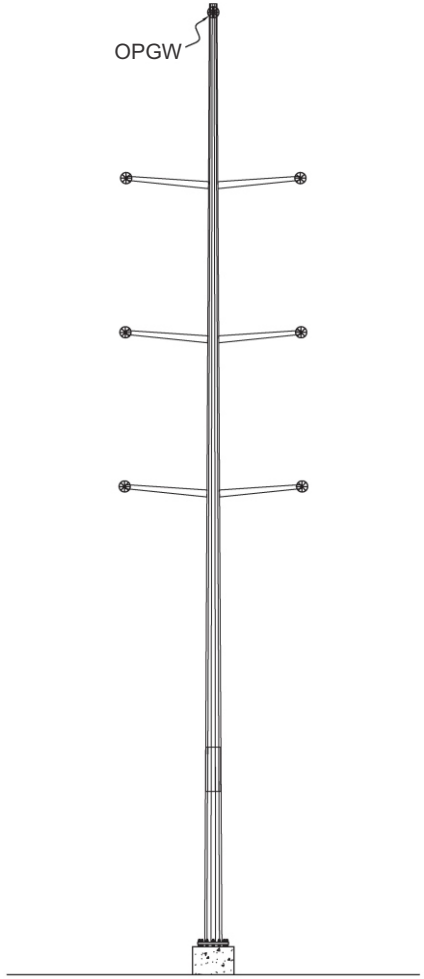
Figure 2-3d

Typical Structure Design

Source: SCE, 2018.



TSP, Dead-End Structure
Vertical Configuration, Segment 2



TSP, Dead-End Structure,
Double Circuit Vertical Configuration, Segment 2

Not to Scale

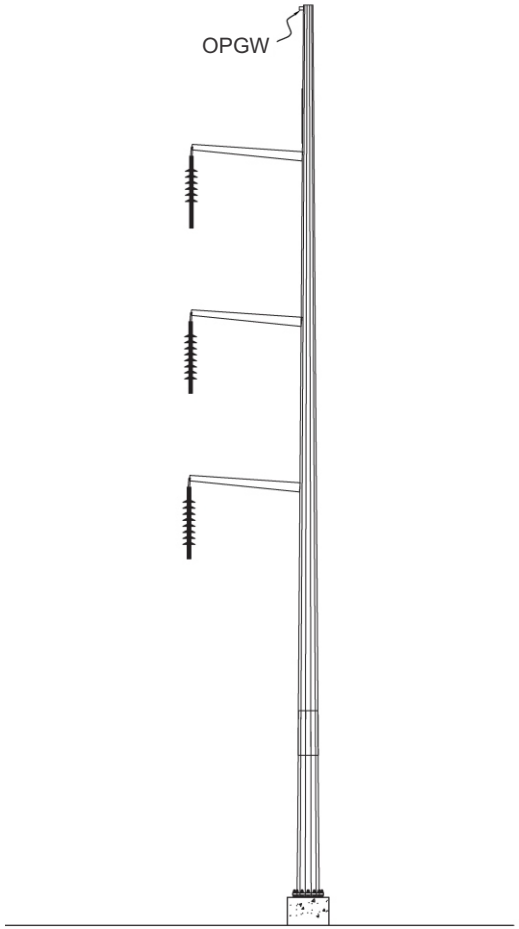
OPGW: Optical Groundwire

See Table B-2 for range of structure heights.

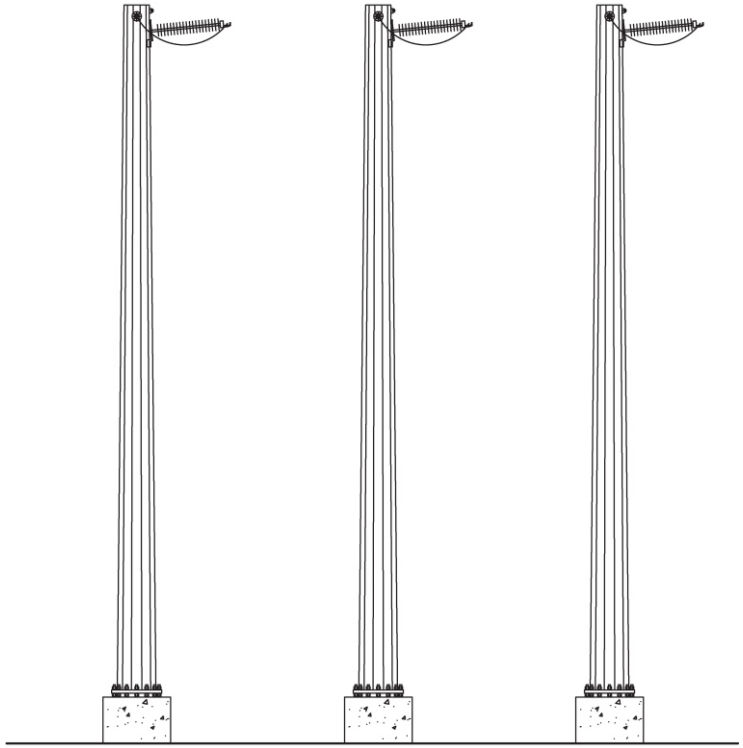
Figure 2-3e

Typical Structure Design

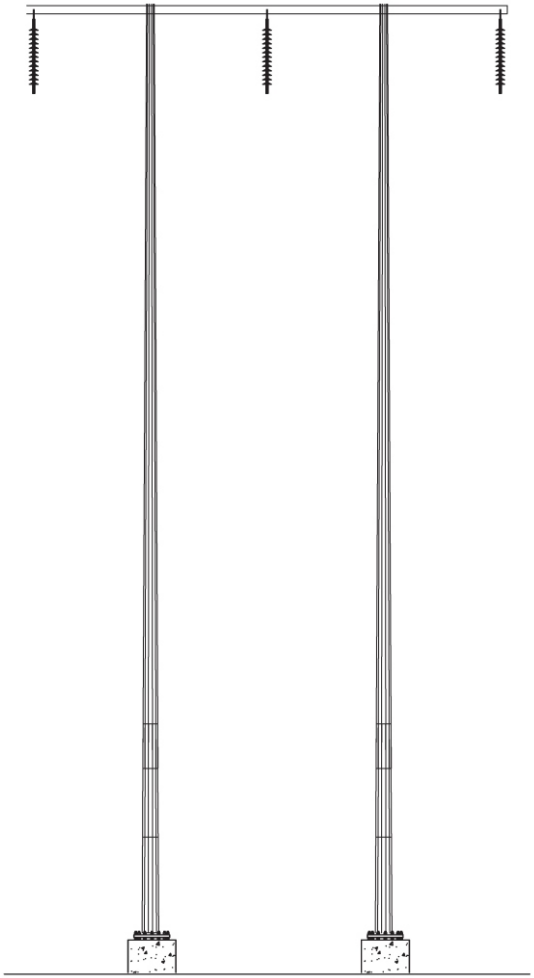
Source: SCE, 2018.



TSP, Suspension Structure, Segment 2



TSP, 3-Pole Dead-End Structure, Segment 3S



TSP, H-Frame Tangent Structure, Segment 4

Not to Scale

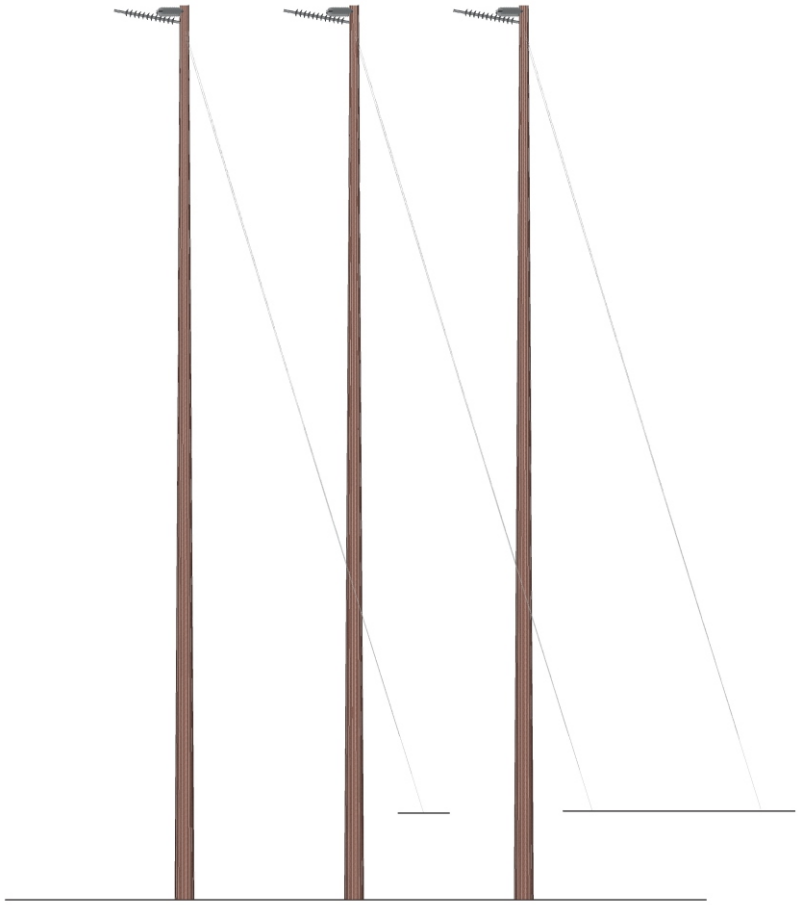
OPGW: Optical Groundwire

See Table B-2 for range of structure heights.

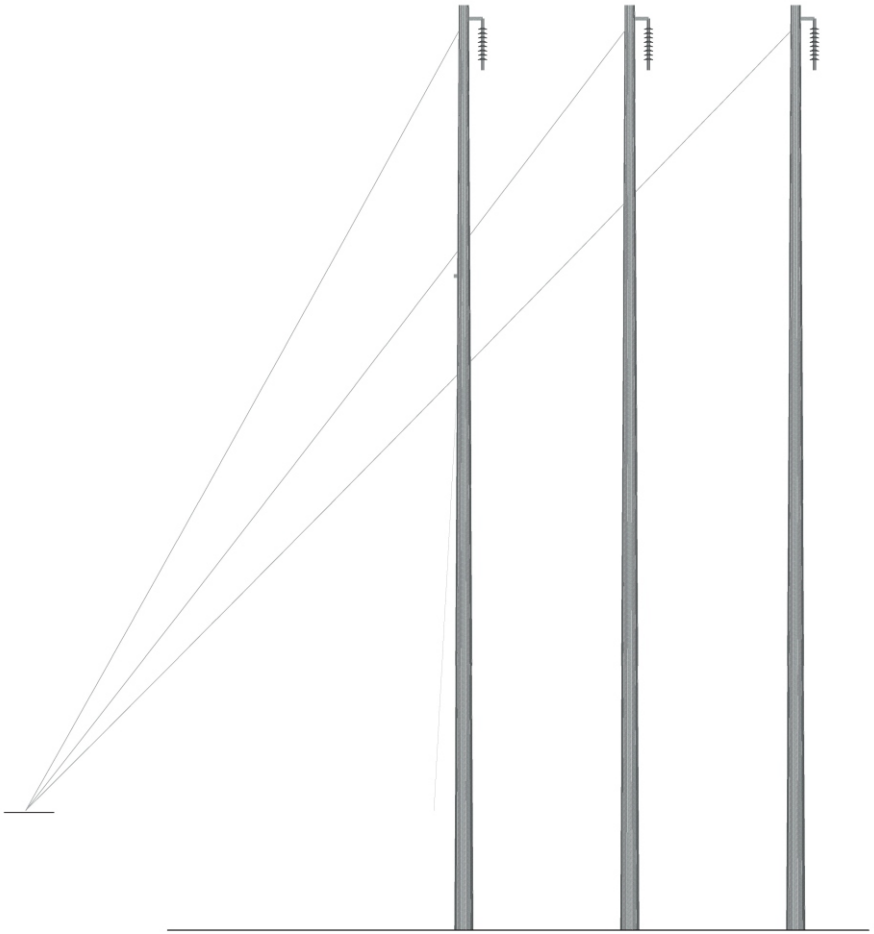
Figure 2-3f

Typical Structure Design

Source: SCE, 2018.



Wood Multipole Dead-End,
Segment 3N and 3S



LWS Multipole Dead-End,
Segment 3N

Not to Scale

Figure 2-3g

Typical Structure Design

See Table B-2 for range of structure heights.

Source: SCE, 2018.



I-C Project, Segment 1 Alignment

New Independence Telecommunication Tap Line, Overhead

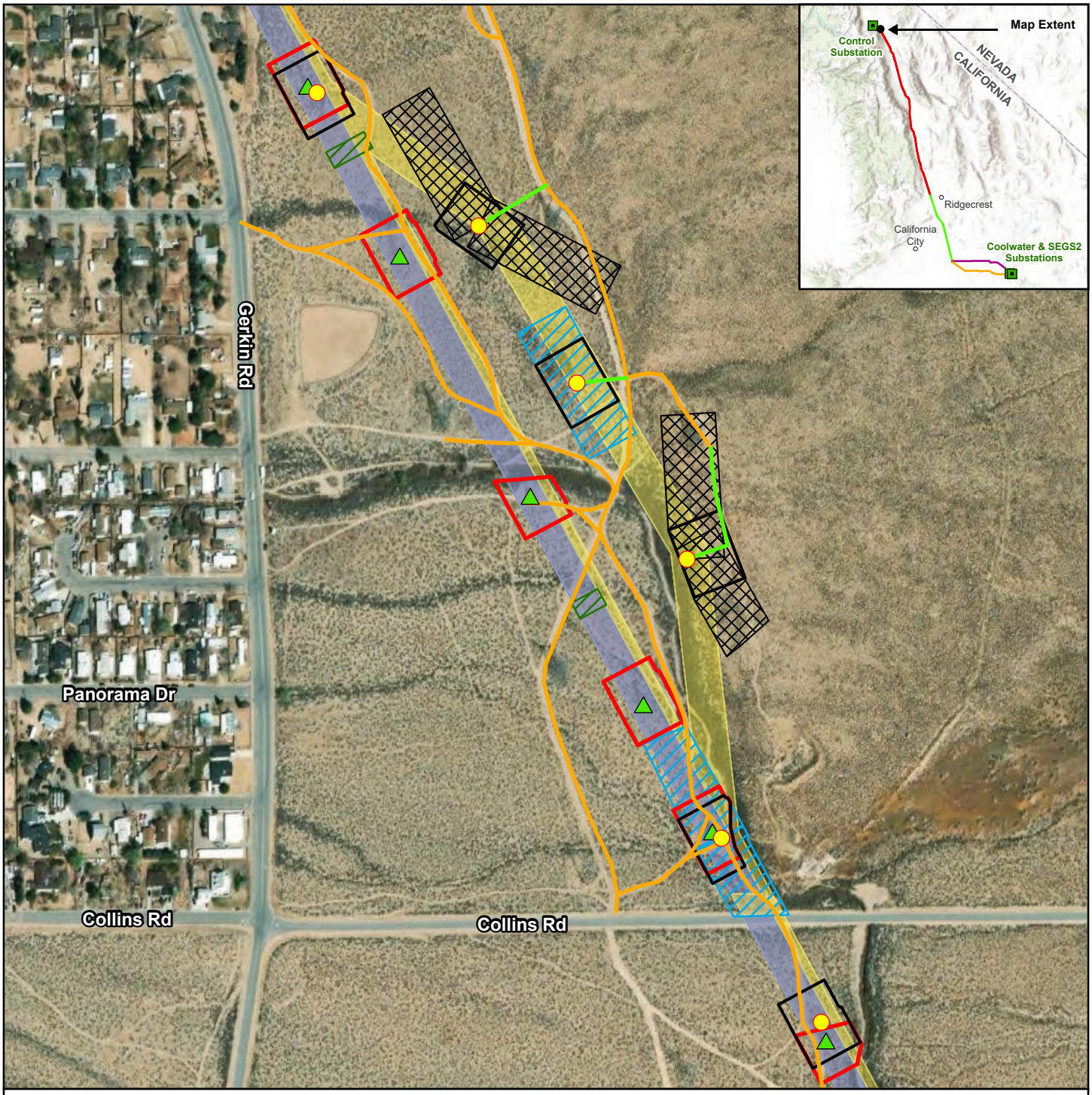
New Independence Telecommunication Tap Line, Underground

N

Figure 2-4

Independence Telecom Tap

Source: SCE.



Source: Aspen, 2024; Esri, 2024; SCE, 2024.

Figure 2-5a

Typical Ground Disturbance Components

Subtransmission Structures
- Proposed New Structure
- Structure to be Removed

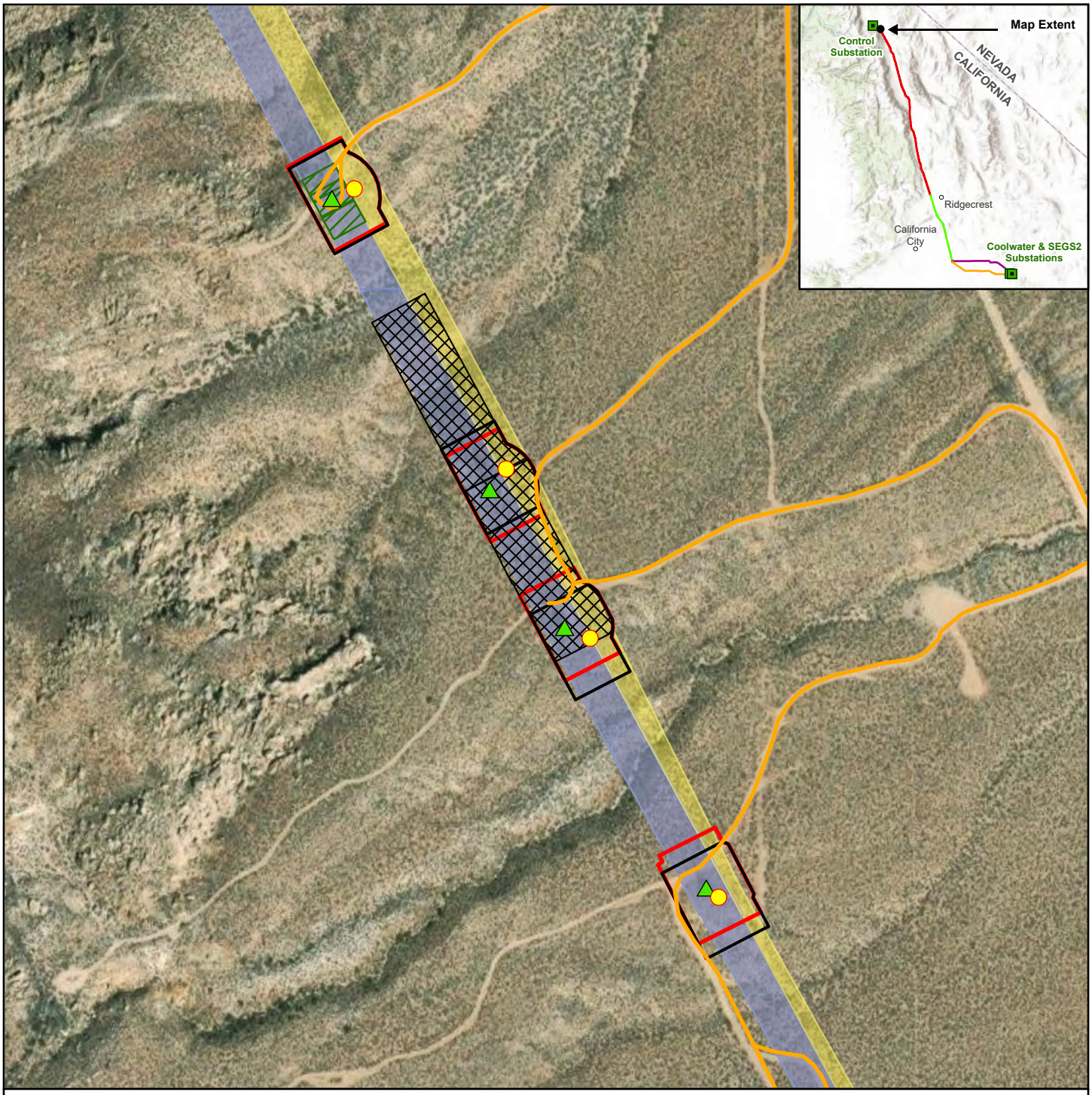
Roads
- Existing Access Road
- New Access Road

- Existing ROW
- Expansion to Existing ROW

Construction Areas
- Demolition Site
- General Disturbance Area
- Pull Site
- Structure Work Area
- Wire Setup

1:4,800

N 0 400 feet



Source: Aspen, 2024; Esri, 2024; SCE, 2024.

Figure 2-5b

Typical Ground Disturbance Components

Subtransmission Structures
- Proposed New Structure
- Structure to be Removed

Roads
- Existing Access Road

- Existing ROW
- Expansion to Existing ROW

Construction Areas
- Demolition Site
- General Disturbance Area
- Pull Site
- Structure Work Area

1:3,600

N 0 300 feet

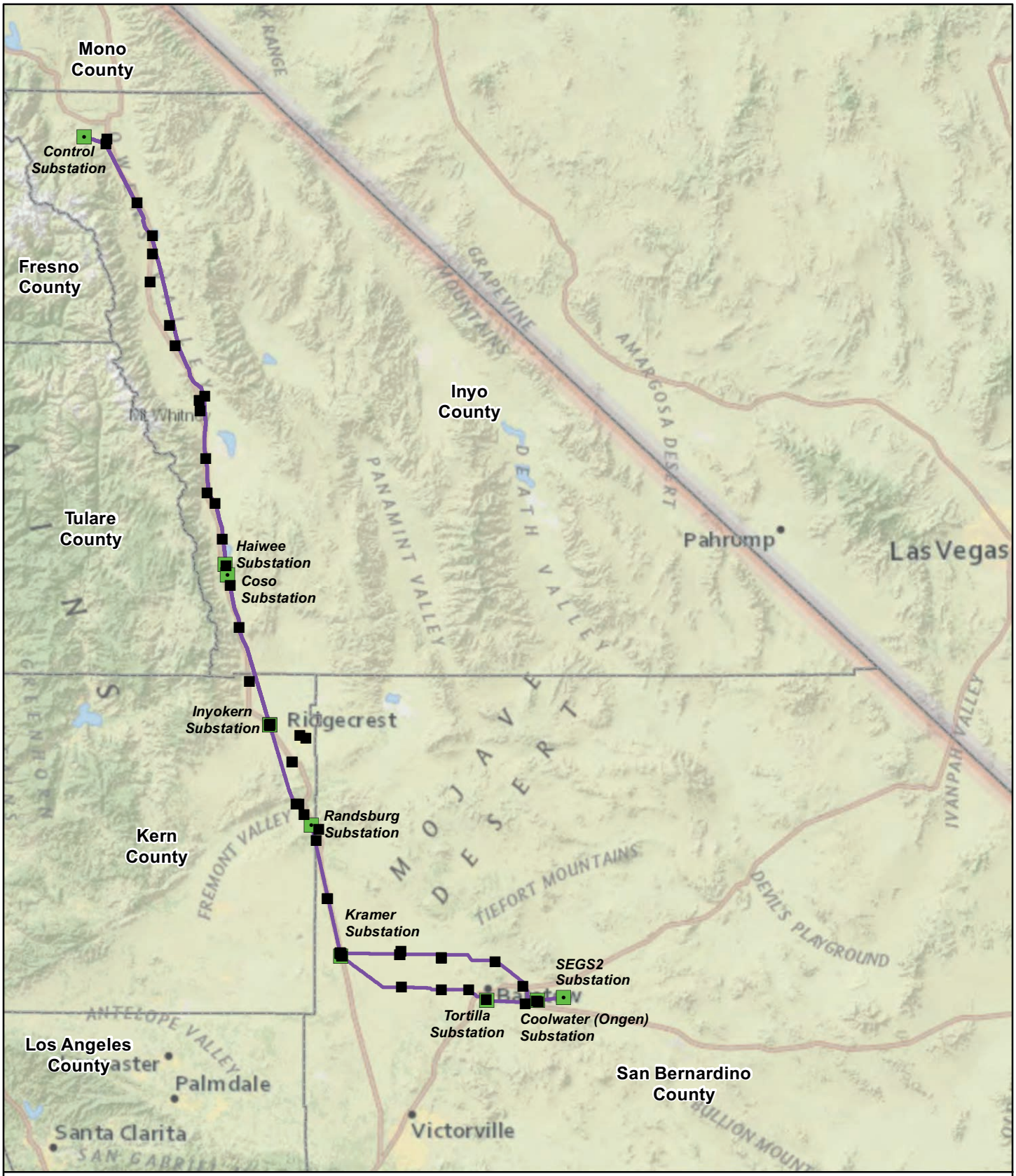


Figure 2-6a

Overview of All Material Yard Locations

Source: SCE, 2018.

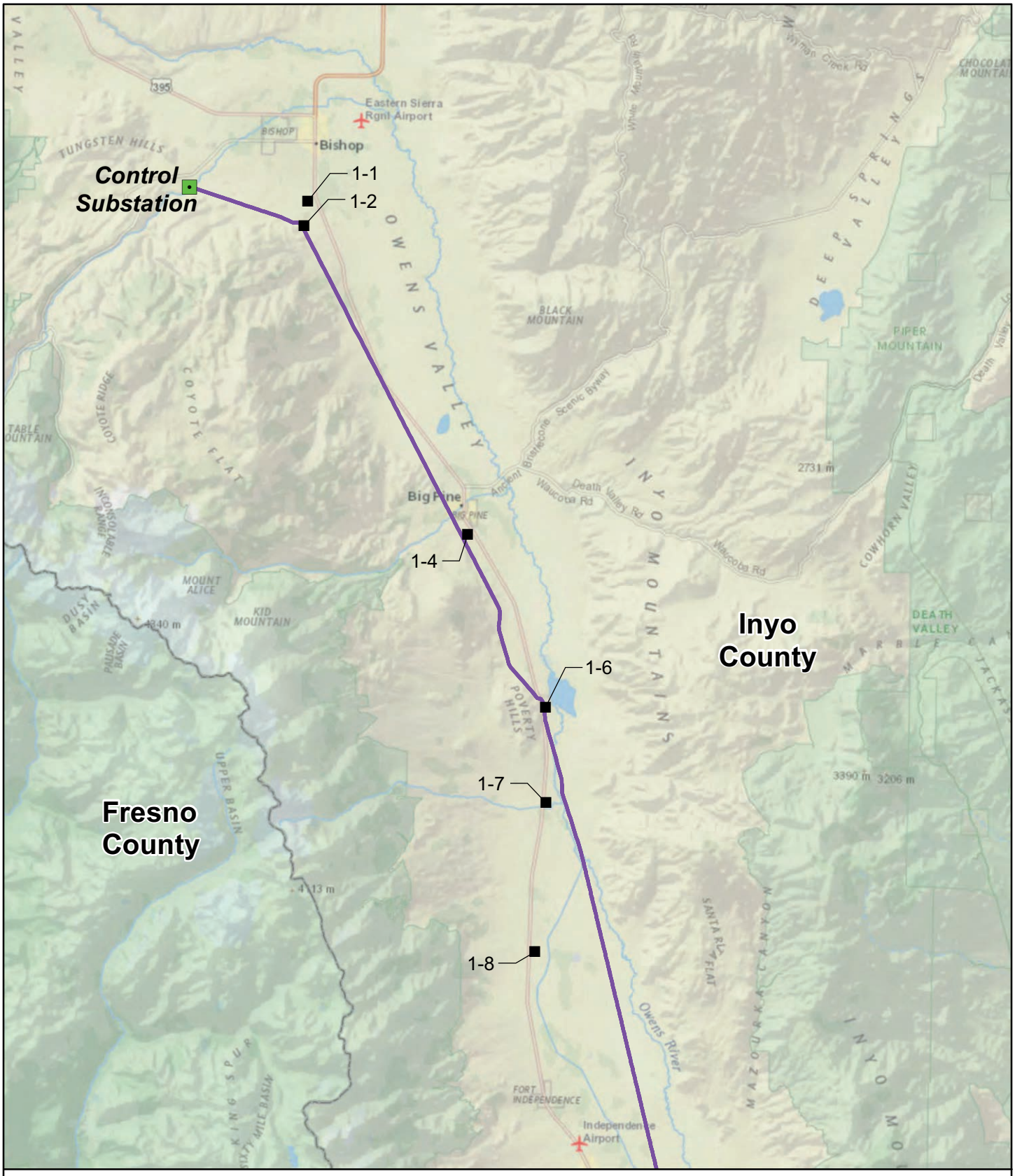


Figure 2-6b

Material Yards
Segment 1 North

Source: SCE, 2018.



Figure 2-6c

Material Yards
Segment 1 Central

Source: SCE, 2018.



Figure 2-6d

Material Yards Segment 1 South

Source: SCE, 2018.



Figure 2-6e

Material Yards Segment 2

Source: SCE, 2018.



Figure 2-6f

Material Yards Segments 3N and 3S

Source: SCE, 2018.



Figure 2-7a

Telecommunications Underground Route: Control Substation

Source: SCE, 2019.



Figure 2-7b

Telecommunications Underground Route: Haiwee Substation

Source: SCE, 2019.



Figure 2-7c

Telecommunications Underground Route: Coso Substation

Source: SCE, 2019.

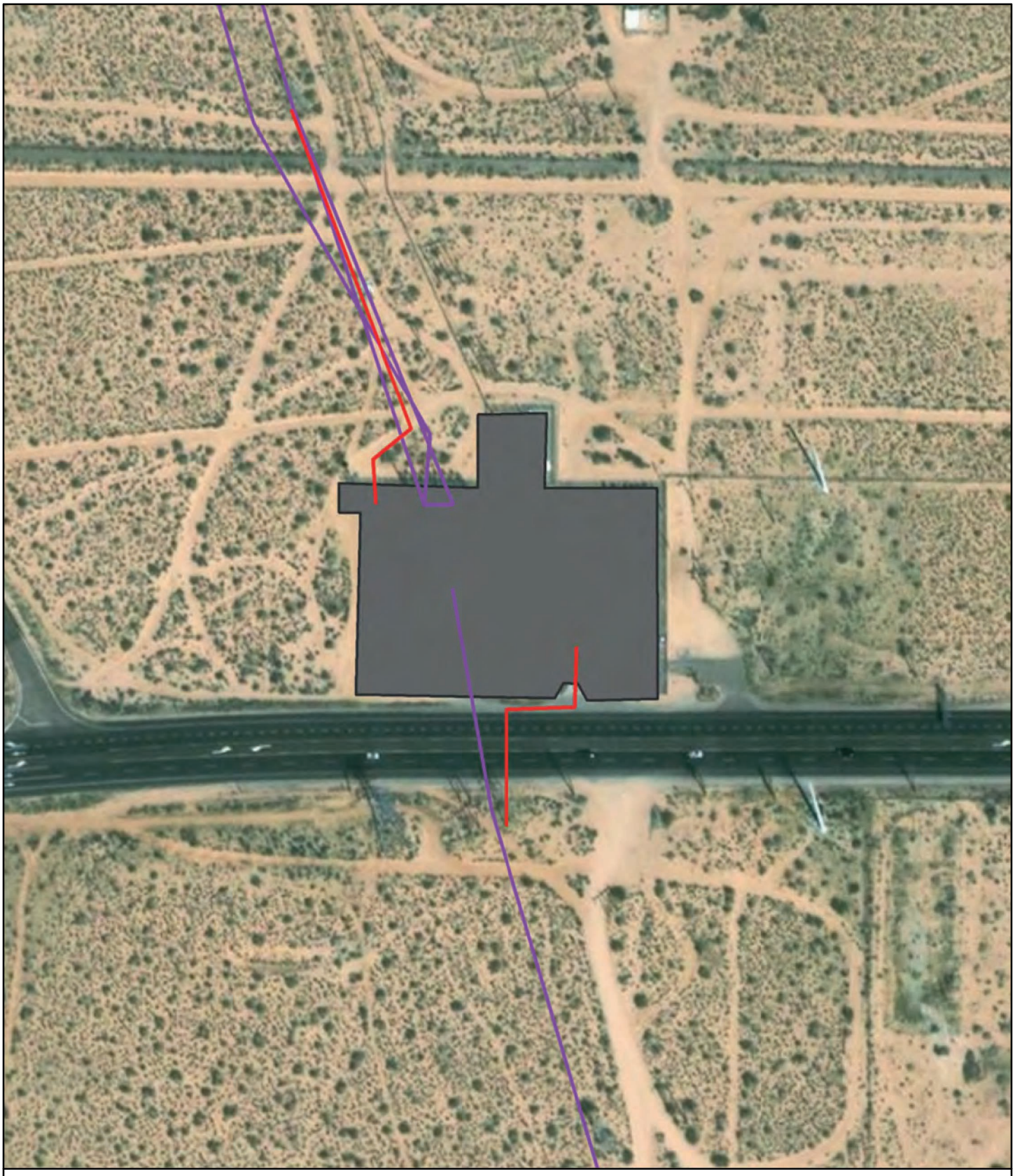


Figure 2-7d

Telecommunications Underground Route: Inyokern Substation

Source: SCE, 2019.



Figure 2-7e

Telecommunications Underground Route: Randsburg Substation

Source: SCE, 2019.



Figure 2-7f

Telecommunications Underground Route: Kramer Substation

Source: SCE, 2019.

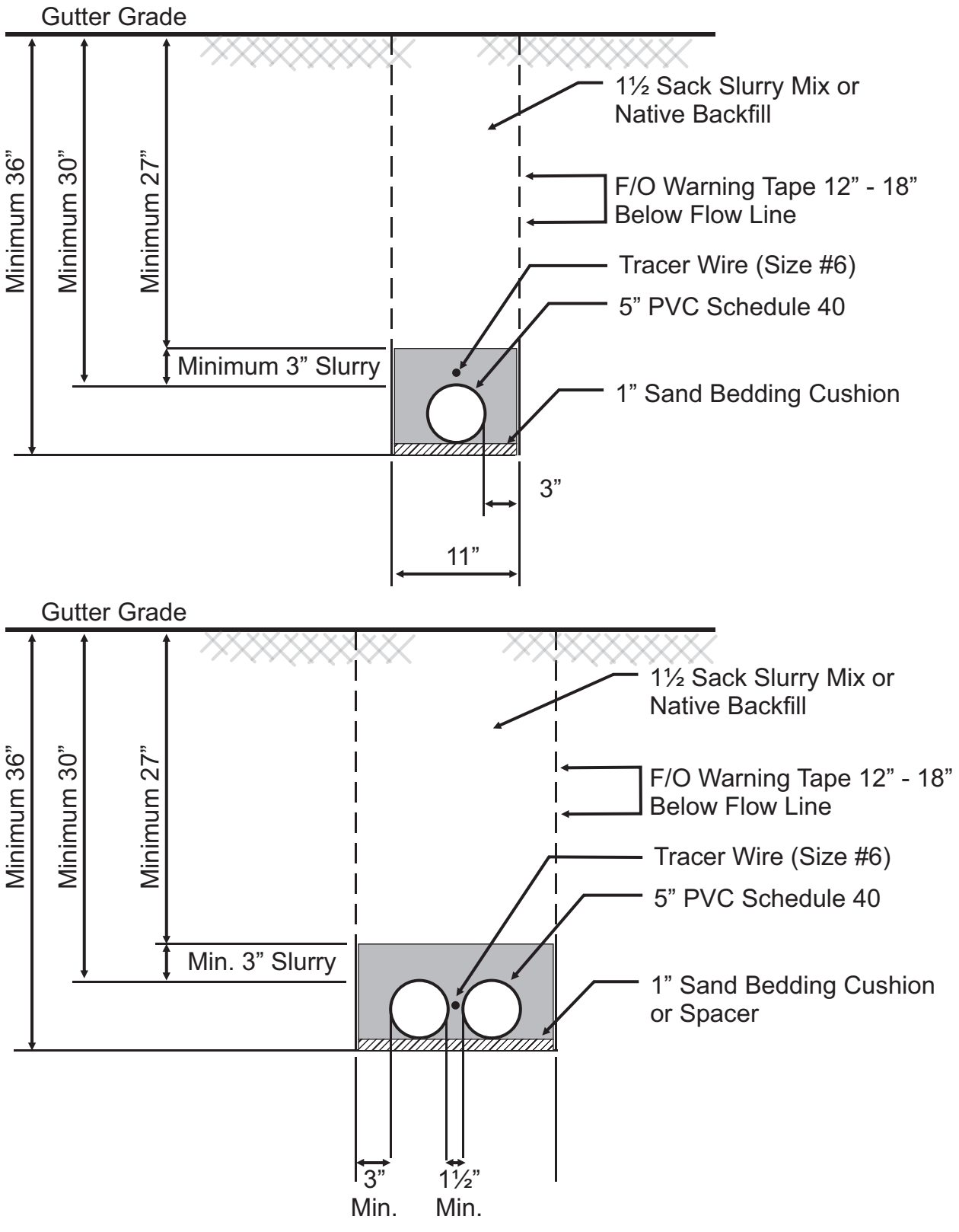


Figure 2-8

SCE Telecommunications Conduit Install Details

Source: SCE.

3. ENVIRONMENTAL ANALYSIS

3.1. Introduction to Environmental Analysis

This section explains the organization and purpose of each part of Chapter 3. Chapter 3 presents the Proposed Project analysis. Alternatives are described and analyzed in Chapter 4, and cumulative effects are described in Chapter 5.

3.1.1. Organization of Each Section

Chapter 3 of this EIR examines the environmental consequences associated with the Proposed Project and the alternatives to it. Chapter 3 includes analyses of the environmental disciplines listed below:

3.2 Aesthetics
3.3 Agriculture and Forestry Resources
3.4 Air Quality
3.5 Biological Resources
3.6 Cultural Resources
3.7 Tribal Cultural Resources
3.8 Energy
3.9 Geology, Soils, and Paleontology
3.10 Greenhouse Gas Emissions
3.11 Hazards and Hazardous Materials
3.12 Hydrology and Water Quality
3.13 Land Use and Planning
3.14 Mineral Resources
3.15 Noise
3.16 Population and Housing
3.17 Public Services
3.18 Recreation
3.19 Transportation
3.20 Utilities and Service Systems
3.21 Wildfire

Within each environmental discipline, discussions are presented in the following order:

- Environmental Setting
- Applicable Regulations, Policies, and Standards
- Impact Significance Criteria
- Environmental Impacts of the Proposed Project
- Mitigation Monitoring, Compliance, and Reporting
- References

The analysis of impacts associated with each environmental discipline provides the regulatory agencies, the lead agency's decision makers, and the general public sufficient information to understand and meaningfully consider the severity of environmental impacts of this Proposed Project and its alternatives, including the No Project Alternative.

3.1.2. CEQA Requirements

CEQA strives to facilitate informed governmental decisions regarding projects and operations that may affect the environment. The regulations implementing CEQA are designed to allow flexibility in consolidating and avoiding duplication among multiple layers of governmental review.

Under CEQA, impacts are evaluated using significance thresholds or standards. These thresholds derive from the CEQA Guidelines Appendix G checklist, which provides sample questions that may be tailored to satisfy individual agency needs and project circumstances. For each resource defined in the checklist, a determination is made as to the significance of each impact.

Significant impacts under CEQA require the public agency that is approving, funding, or carrying out the project to consider mitigation, where feasible, to avoid or reduce the impacts to less than significant levels. CEQA Guidelines Sections 15126.2(a–c), 15358, and 15382 further define and describe significant effects.

For the purpose of this document, and pursuant to CEQA Guidelines (Section 15125(a)), the environmental baseline used for most impact analysis reflects existing conditions in the vicinity of the project at the time of issuance of the Notice of Preparation (August 28, 2020). However, the baseline has been updated for certain resources; for example, the biological resources analysis is based on more recent surveys. Baseline data for other disciplines has been evaluated for its currency and has been updated as noted throughout Chapter 3.

The EIR evaluates the environmental consequences and potential impacts that the Proposed Project, the alternatives, and mitigation measures would create. Under CEQA, the impacts identified are compared with predetermined, specific significance criteria or threshold, and are classified according to significance categories listed in each environmental discipline.

3.1.3. Impact Analysis and Mitigation Measures

The analysis completed for each environmental discipline follows the CEQA requirements defined above. In each section, there may be Applicant Proposed Measures (APMs) developed by SCE and/or mitigation measures recommended in this EIR.

The impact analysis for each resource topic presents an assessment of the identified direct and indirect impacts and discloses the level of significance for each impact. The analysis in each section within Chapter 3 applies to the construction, operations, and maintenance of the Project as a whole unless specifically stated. A significant impact is defined under CEQA as "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project" (State CEQA Guidelines § 15382). The terms "effect" and "impact" used in this document are synonymous and can refer to effects that are either adverse or beneficial.

Direct effects	Effects caused by the proposed Project that occur at the same time and place as the proposed Project
Indirect effects	Effects caused by the proposed Project that occur later in time, or further in distance, but are still reasonably foreseeable
Residual impacts	Impacts that still meet or exceed significance criteria after application of mitigation and, therefore, remain significant
Short-term impacts	Impacts expected to occur during construction or decommissioning that do not have lingering effects for an extended period after the activity is completed
Long-term impacts	Impacts that would persist for an extended period of time
Cumulative impacts	[Evaluated in Chapter 5] Impacts resulting from the proposed Project when combined with similar effects of other past, present, and reasonably foreseeable future projects, regardless of which agency or person undertakes such projects (cumulative impacts could result from individually insignificant but collectively significant actions taking place over time)

The significance of each impact is determined based on an analysis of the impact, compliance with any recommended mitigation measures, and the level of impact remaining compared to the applicable significance criteria. Impacts are classified as one of the five categories listed below.

Significant and Unavoidable	A substantial or potentially substantial adverse change from the environmental baseline that meets or exceeds significance criteria, where either no feasible mitigation can be implemented, or the impact remains significant after implementation of mitigation measures
Less than Significant with Mitigation	A substantial or potentially substantial adverse change from the environmental baseline that can be avoided or reduced to below applicable significance thresholds
Less than Significant	An adverse impact that does not meet or exceed the significance criteria of a particular environmental issue area and, therefore, does not require mitigation
Beneficial	An impact that would result in an improvement to the physical environment relative to baseline conditions
No Impact	A change associated with the project that would not result in an impact to the physical environment relative to baseline conditions

The analysis in this EIR is prepared with the understanding that the Applicant would obtain all required permits and approvals from other agencies and comply with all legally applicable terms and conditions associated with those permits and approvals. Implementation of the Project, which is described in Chapter 2, Description of the Proposed Project, including implementation of APMs and of any mitigation measures identified to reduce or avoid significant adverse impacts, would be monitored in accordance with a Mitigation Monitoring and Reporting Program, presented in EIR Chapter 7 and summarized below.

3.1.3.1. Significance Criteria

Thresholds of significance, also referred to as significance criteria, are used to determine when a project will result in a significant impact on the environment. Thresholds of significance are, "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" (CEQA Guidelines Section 15064.7(a).)

In many instances, this EIR uses the sample questions provided in CEQA Guidelines Appendix G as significance criteria; however, the sample questions have been tailored to address local conditions and project characteristics and have been modified or supplemented by other significance criteria where appropriate. In some instances, the EIR uses environmental standards as thresholds of significance. An environmental standard is a rule of general application that is adopted by a public agency, e.g., a regulatory agency, through a public review process and that meets the criteria set forth in CEQA Guidelines Section 15064.7(d).

3.1.3.2. Applicant Proposed Measures

The Applicant has proposed a substantial number of measures and procedures to avoid or reduce impacts, which are referred to as APMs. The APMs are considered part of the Proposed Project and are provided at the end of Chapter 2. These APMs have been assumed to be part of the Proposed Project in the assessment of impacts and, therefore, are not included as recommended mitigation measures. However, implementation of each APM will be monitored by the CPUC to ensure the APM is effective in reducing the impact as intended. The APMs that are intended to reduce the potential impacts in a particular environmental discipline (such as air quality, biology, etc.) are listed in the section addressing that environmental discipline. In some instances, APMs are superseded by mitigation measures that provide greater specificity and direction, or include actions omitted in the original APM in order to reduce a significant impact.

3.1.3.3. Mitigation Measures

When significant impacts are identified in an EIR, CEQA requires the public agency that is approving, funding, or carrying out the project to consider mitigation, where feasible, to avoid or reduce the impacts to less than significant levels. Mitigation measures are recommended in each section, if required to avoid or minimize impacts that are identified.

The mitigation measures recommended by this study have been identified in the impact assessment sections. See also Chapter 7 for discussion of the Mitigation Monitoring and Reporting Program and the implementation protocol for each measure.

Mitigation measures recommended in this EIR would be applicable to non-federal lands only; mitigation on Bureau of Land Management (BLM) administered public lands would be imposed as defined in the National Environmental Policy Act (NEPA) document prepared by the BLM.

3.1.3.4. Impacts of Decommissioning

SCE has committed to preparation of a removal and restoration plan prior to removal or abandonment of the facilities that would be permitted to be constructed on or over BLM, BIA, the DOD, other government lands, and private lands or within a reasonable time following termination right-of-way or easement. The

removal and restoration plan would address removal of SCE's facilities from the permitted area, and any requirements for habitat restoration and revegetation. The removal and restoration plan would then be approved by the permitting agency before implementation.

The impacts of decommissioning would be similar to those of construction as described in this EIR, especially because Segments 1 and 2 of the Proposed Project also include removal of hundreds of subtransmission structures in the same general footprint of the new subtransmission structures. As a result, while the decommissioning phase is not specifically addressed under each discipline in Chapter 3, the analysis for construction would also apply to decommissioning.

In addition, as noted in EIR Section 2.1.1, most of the existing subtransmission structures being replaced are over 100 years old, having been installed in 1912 or 1913. This illustrates the long life that these structures can have. As a result, it would be speculative to try to evaluate decommissioning impacts at this time. At the time they are proposed for decommissioning, SCE would be required to submit a removal and restoration plan to the CPUC and BLM, and the need for additional environmental review would be considered at that time.

3.1.4. Other CEQA Requirements

Chapter 6 of this EIR presents the analysis required by CEQA for the following topics:

- Growth-inducing effects
- Significant and irreversible and irretrievable changes
- Significant environmental effects that cannot be avoided if the Proposed Project is implemented

3.2. Aesthetics

This section describes existing environmental conditions and anticipated impacts associated with the Proposed Project (or Project) for aesthetics (also referred to as visual resources). Aesthetics or visual resources refer to visual considerations in the physical environment. Aesthetics analysis is a systematic process to logically assess visible change in the physical environment and the anticipated viewer response to that change. Landforms, water, and vegetation patterns are among the natural landscape features that define an area's visual character, whereas buildings, roads, and other structures reflect human modifications to the landscape. These natural and built landscape features are considered visual resources that contribute to the public's experience and appreciation of the environment.

This aesthetics section describes the: existing landscape character and visual quality of the Project study area; existing views of the Project from various on-the-ground vantage points or Key Observation Points (KOPs); the visual characteristics of the Project; and the landscape changes that would be associated with construction and operation of the Project as seen from various vantage points. For the purposes of this analysis, the Project study area is defined as the areas and locations from which the Project (and any alternatives) could be seen.

Impacts evaluated in this section include the Project's potential impacts on scenic vistas and scenic highways. The Project's impact on the existing visual character or quality of public views of the Project and its surroundings is also assessed. The Project's potential to create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area, is also determined.

The environmental setting for aesthetics is presented in Section 3.2.1, and relevant regulations and standards are summarized in Section 3.2.2. Section 3.2.3 describes the impacts on the environment associated with implementation of the Proposed Project. These impact discussions introduce mitigation measures that would reduce or avoid significant adverse environmental impacts. Section 3.2.4 presents the mitigation monitoring, compliance, and reporting information, and Section 3.2.5 lists references cited in this section. Chapter 4 describes the environmental impacts of the alternatives to the Proposed Project. Cumulative impacts for all disciplines are considered in Chapter 5.

Additionally, there were several scoping comments received pertaining to aesthetics. Those comments and the locations where they are addressed in this analysis are as follows:

- A request to use paint or other methods to minimize the visual impacts from the power poles especially in areas with iconic views. Surface treatment is discussed in the impacts and mitigation section (Section 3.2.3.3) under KOP 1-19 and KOP 1-20, and in Mitigation Measure AE-3a.
- In Inyo County, a 20-mile portion of the line falls within a designated US 395 Scenic Highway section near Aberdeen. This potential impact is discussed in Section 3.2.3.3 under Impact AE-2 for Segment 1.
- A concern was expressed regarding the impact of increased structure (pole) height and change in structure design on the existing viewshed of the Sierra Nevada and Inyo mountains. Structure heights and design are discussed in the impacts and mitigation section under all of the KOPs.

3.2.1. Environmental Setting

3.2.1.1. Regional Setting

As noted in the Proponent's Environmental Assessment (PEA), the Proposed Project is in southeastern California, extending an overall length of approximately 262 miles through portions of Inyo, Kern, and San Bernardino counties. Situated at the confluence of the Sierra Nevada, Great Basin Desert, and Mojave Desert, this region is characterized by abrupt changes in topography, with steep, relatively narrow mountain chains separated by flat alluvial basins. Reflecting the arid desert climate, relatively sparse, low-growing scrub vegetation with its characteristic grey-green color is found throughout the region, affording

open views across the landscape. Limited areas of irrigated cropland can be found in the vicinity of the Owens River and Indian Wells valleys in the north of the Project study area, and in the vicinity of Barstow in the Mojave River Valley to the south. Elevations along the Project alignment generally range from approximately 4,800 feet above mean sea level in the northern Owens River Valley to approximately 2,400 feet in Inyokern to 2,200 feet in the Barstow area.

The Project's landscape is generally comprised of diverse natural scenery as well as a variety of built features that include infrastructure associated with regional highway, electrical utility, and railway corridors. Established utility elements include lattice structures, steel poles, and wood poles supporting overhead transmission and distribution power lines; substations; and telecommunication towers. Most of the Project passes through undeveloped open space that is sparsely populated. The Project also passes close to residential areas scattered along the main transportation corridors (US 395, SR 58, and I-15), which the Project generally parallels. As a result, the Proposed Project would typically be visible from roads and residences at a foreground viewing distance of 0.5 mile or less, though more distant views of the Project would also be available across the flat, open landscape.

3.2.1.2. Evaluation Methodology

In the following paragraphs, the Project environmental setting is described by segment and by representative KOPs and is based on a review of existing information (primarily from the PEA) and a thorough field reconnaissance including existing view photographs from each of the KOPs. KOPs were selected within each route segment to represent key viewing populations and viewing circumstances from which more detailed landscape assessments were conducted.

The selection of KOPs was based on extensive consultation with the Bureau of Land Management (BLM). Figures 3.2-1a (Key Observation Point Locations, Segment 1) and 3.2-1b (Key Observation Point Locations, Segments 2 and 3S) provide two KOP maps (Note: All figures are presented at the end of Section 3.2). At each KOP the existing landscape was characterized, per the Visual Sensitivity-Visual Change (VS-VC) System, in terms of visual quality, viewer concern, and viewer exposure to arrive at an overall concluding assessment of the existing landscape's visual sensitivity to change. Each of these factors considered in the evaluation of the existing landscape under the VS VC methodology is described below.

Visual Quality is a measure of the overall impression or appeal of an area as determined by particular landscape characteristics such as landforms, rockforms, water features, and vegetation patterns, as well as associated public values. The attributes of variety, vividness, coherence, uniqueness, harmony, and pattern contribute to visual quality classifications of indistinctive (Low), common (Moderate), and distinctive (High). Visual quality is studied as a point of reference to assess whether a given project would appear compatible with the established features of the setting or would contrast noticeably and unfavorably with them.

Viewer Concern addresses the level of interest or concern of viewers regarding an area's visual resources (rated from Low to High) and is closely associated with viewers' expectations for the area. Viewer concern reflects the importance placed on a given landscape based on the human perceptions of the intrinsic beauty of the existing landforms, rockforms, water features, vegetation patterns, and even cultural features.

Viewer Exposure describes the degree to which viewers are exposed to views of the landscape (rated from Low to High). Viewer exposure considers landscape visibility (the ability to see the landscape), distance zones (proximity of viewers to the subject landscape), number of viewers (Low to High), and the duration of view (Brief to Extended). Landscape visibility can be a function of several interconnected considerations including proximity to viewing point, degree of discernible detail, seasonal variations (snow, fog, and haze can obscure landscapes), time of day, and/or presence or absence of screening features such as landforms, vegetation, and/or built structures. Even though a landscape may have highly scenic qualities, it may be remote, receiving relatively few visitors and, thus, having a lower degree of viewer exposure. Conversely, a subject landscape or project may be situated relatively close to a major road or highway

utilized by a substantial number of motorists and yet still result in relatively low viewer exposure if the rate of travel speed on the roadway is high and viewing times are brief, or if the landscape is partially screened by vegetation or other features. Often, it is the subject area's proximity to viewers, or distance zone, which is of particular importance in determining viewer exposure. Landscapes are generally subdivided into three or four distance zones based on relative visibility from travel routes or observation points. Distance zones typically include Foreground, Middleground, and Background. The actual number of zones and distance assigned to each zone is dependent on the existing terrain characteristics and public policy and is often determined on a project-by-project basis.

Overall Visual Sensitivity is a concluding assessment as to an existing landscape's susceptibility to an adverse visual outcome (rated from Low to High). A landscape with a high degree of visual sensitivity can accommodate only a low degree of adverse visual change without resulting in a significant visual impact. A landscape with a low degree of visual sensitivity can accommodate a higher degree of adverse visual change before exhibiting a significant visual impact. Overall visual sensitivity is derived from a comparison of existing visual quality, viewer concern, and viewer exposure.

As will be discussed later in this section, the VS-VC System compares anticipated changes, which would occur because of a project, to existing landscape and viewer sensitivity (overall visual sensitivity), in order to arrive at an impact significance conclusion.

3.2.1.3. Environmental Setting by Segment

Segment 1: Bishop to Inyokern

Overview

Notable landscape features and scenic resources that are visible from many locations within Segment 1 include the Owens Valley, Eastern Sierra Escarpment, White Mountains, Inyo Mountains, Manzanar National Historic Site, Alabama Hills National Scenic Area, Owens Lake, and the Coso Volcanic Range to the south. From the Project's northern terminus at Control Substation, approximately five miles south-west of Bishop, Segment 1 extends approximately 126 miles south, traversing the length of the Owens Valley and continuing through Rose Valley to Inyokern Substation in Indian Wells Valley to the south. Much of the Owens Valley landscape consists of alluvial plains, punctuated by ancient lava fields and thermal hot springs, and includes riparian areas associated with the Owens River and adjacent thermal springs, as well as dry lakebeds or playas with arid expanses largely devoid of vegetation.

As the Project heads southeasterly from Control Substation, it crosses an open, gently sloping high desert landscape, passing near several isolated residential developments at the base of the eastern Sierra foot-hills. Approximately nine miles south of Bishop, the Project alignment passes within less than 100 feet of the US 395 corridor and then generally parallels this four-lane highway at varying distances from the roadway, crossing it multiple times as it passes through the valley. The Project is close to tribal land and other residential communities as it passes the western and eastern periphery of Big Pine and Lone Pine. The Project then skirts the western edge of the Owens Lake Basin where it crosses US 395 once again, passing to the east of the historic highway towns of Cartago and Olancha as well as the Cartago Wildlife Area.

After crossing SR 190 just east of US 395 at the south end of the Owens Lake Basin, the Project passes west of the Coso Range Wilderness and approximately 700 feet west of Haiwee Reservoir, a series of open water storage facilities. The Project then passes Haiwee Substation and Coso Substation, subsequently entering a largely uninhabited alluvial basin approximately eight miles south of the reservoir. Continuing along the east side of US 395, the Project runs along a series of volcanic escarpments (the Narrows) for approximately 10 miles before crossing into Kern County where it enters the China Lake basin and Indian Wells Valley within the western boundary of the China Lake Naval Air Weapons Station. It terminates at the Inyokern Substation at the northern edge of the Mojave Desert.

Key Observation Points

Views of the Project in Segment 1 would be available from scattered rural residences, rural residential enclaves, and communities (Wilkerson, Independence, Cartago, and Olancha); larger communities (Big Pine, Lone Pine, and Inyokern); Manzanar National Historic Site; US 395, SR 136, and SR 190; and numerous local roads and recreational sites. For Segment 1, 19 KOPs were selected to characterize the landscape setting (KOPs 1-2 through 1-21 [non-sequential numbering]) and are discussed below. The Segment 1 KOPs are mapped in Figure 3.2-1a (Key Observation Point Locations, Segment 1). (Note: All referenced figures are presented at the end of Section 3.2).

KOP 1-2 –Gerkin Road, South of Bishop

Figure 3.2-2a (KOP 1-2 Gerkin Road, Existing View) presents the existing view to the north from Gerkin Road south of Bishop. The view encompasses a portion of Segment 1 within the existing utility corridor that parallels and then crosses Gerkin Road west of US 395.

Visual Quality. Low to Moderate. The foreground to middleground landscape is of a rural electric utility corridor with substantial industrial character, bordered by rounded hill slopes and a flat, valley plain. It is backdropped by the irregular to horizontal forms of distant mountain ranges. Vegetation within, and adjacent to, the corridor is rounded in form and generally non-descript, though seasonal influences can provide vegetative color contrasts of visual interest.

Viewer Concern. High. Although energy transmission infrastructure dominates the foreground views from Gerkin Road and some adjacent residences, viewers would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky, valley plain, or mountain ranges) an adverse visual change.

Viewer Exposure. Moderate to High. The Proposed Project would be highly visible in the foreground views from Gerkin Road (and from other roads that are spanned by the ROW). The number of viewers would be low, but the duration of view would be extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of moderate to high for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 1-2, combining the equally weighted low to moderate visual quality, high viewer concern, and moderate to high viewer exposure results in an overall rating of moderate to high for visual sensitivity of the visual setting and viewing characteristics.

KOP 1-3 – Southbound US 395 South of Big Pine Creek Road Looking South

Figure 3.2-3a (KOP 1-3 Southbound US 395, Existing View) presents the existing view to the south from US 395 just south of the north crossing of Big Canal. The view encompasses a portion of Segment 1 within the existing utility corridor that parallels the west side of US 395.

Visual Quality. Low to Moderate. The foreground to middleground rural landscape encompasses a flat valley plain and electric utility corridor with substantial industrial character, backdropped by rounded hill slopes and irregular horizontal to angular ridgelines. Vegetation within, and adjacent to, the corridor appears somewhat non-descript with rounded forms becoming more indistinct with distance. The yellow to russet color tones are interspersed with areas of olive green, which provide an interesting color contrast with the darker gray mountains in the middleground and adds visual interest.

Viewer Concern. High. Although the existing energy transmission infrastructure features prominently in the foreground views from US 395, viewers would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky, valley plain, or mountain ranges) an adverse visual change.

Viewer Exposure. High. The Proposed Project would be highly visible in the foreground views from US 395. The number of viewers would be high, and the duration of view would be extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of high for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 1-3, combining the equally weighted low to moderate visual quality, high viewer concern, and high viewer exposure results in an overall rating of moderate to high for visual sensitivity of the visual setting and viewing characteristics.

KOP 1-4 – Baker Creek Campground, Big Pine

Figure 3.2-4a (KOP 1-4 Baker Creek Cpgd, Existing View) presents the existing view to the east from within Baker Creek Campground in Big Pine. The view encompasses a portion of Segment 1 within the existing utility corridor that passes immediately adjacent and to the east of the campground.

Visual Quality. Low to Moderate. The foreground landscape is of a rural park setting backdropped by an electric utility corridor characterized by complex structures with substantial industrial character. The horizontal to irregular forms of the more distant mountains that appear light to medium blue in the distance. Vegetation within the foreground consists of a mosaic of trees, shrubs, and grasses with diverse forms and lines ranging in color from light tan to dark brown and sage and olive greens with yellow and gold highlights. The geometric form of some park facilities are also present.

Viewer Concern. High. Although the existing energy transmission infrastructure presents as visually prominent landscape features when viewed from some locations within the park, viewers would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky or mountain ranges) an adverse visual change.

Viewer Exposure. Moderate to High. The Proposed Project would be highly visible in the foreground views from within portions of the park (and from some other roads that are immediately adjacent to the ROW). The number of viewers would be low to moderate, but the duration of view would be extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of moderate to high for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 1-4, combining the equally weighted low to moderate visual quality, high viewer concern, and moderate to high viewer exposure results in an overall rating of moderate to high for visual sensitivity of the visual setting and viewing characteristics.

KOP 1-5 – Big Pine Dump Road/US 395 Near Crater Mountain Looking Southwest

Figure 3.2-5a (KOP 1-5 Big Pine Dump Road, Existing View) presents the existing view to the southwest from Big Pine Dump Road, immediately south of the intersection with US 395 near Crater Mountain. The view encompasses a portion of Segment 1 within the existing utility corridor that parallels the west side of US 395.

Visual Quality. Low to Moderate. The foreground to middleground rural landscape encompasses a flat valley plain and electric utility corridor with substantial industrial character, backdropped by the angular form of Crater Mountain. Vegetation within, and adjacent to, the corridor appears somewhat non-descript with rounded forms becoming more indistinct with distance. Tan to russet color tones predominate the foreground to middleground vegetation.

Viewer Concern. High. Although the existing energy transmission infrastructure features prominently in the foreground views from Pine Dump Road/US 395, viewers would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background slopes and Crater Mountain) an adverse visual change.

Viewer Exposure. High. The Proposed Project would be highly visible in the foreground views from US 395. The number of viewers would be high, and the duration of view would be extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of high for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 1-5, combining the equally weighted low to moderate visual quality, high viewer concern, and high viewer exposure results in an overall rating of moderate to high for visual sensitivity of the visual setting and viewing characteristics.

KOP 1-7 – Manzanar Historic Entry

Figure 3.2-6a (KOP 1-7 Manzanar, Existing View) presents the existing view to the east from the Historic Entry to the Manzanar National Historic Site. The view encompasses the point of entry in the foreground, backdropped by the imposing Inyo Mountains, which help to define the eastern boundary of the Owens River Valley. The existing ROW where the Proposed Project would be located is discernible along the valley floor, just slightly less than one mile to the east of the Historic Entry.

Visual Quality. Moderate to High. The foreground to middleground flat valley floor with its tan- to russet-colored rounded shrubs and low trees provides dramatic contrast to the abruptly rising, steep, angular forms and undulating ridgelines of the Inyo Mountains, whose visual prominence is highly influential in the moderate to high visual quality rating. Beyond the entry signs and road, structural features consisting of a fence line and distant utility structures are visible but not visually prominent.

Viewer Concern. High. Although the existing energy transmission infrastructure in the distant utility corridor is visible from the Historic Entry and other locations within Manzanar and establishes a structural context for any new or additional facilities in the utility corridor, viewers in Manzanar would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background alluvial fans or mountain range) an adverse visual change.

Viewer Exposure. Moderate. Proposed Project visibility would be low to moderate, though not visually prominent, in the middleground views from the Historic Entry and within other areas of Manzanar. The number of viewers would be moderate, but the duration of view would be extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of moderate for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 1-7, combining the equally weighted moderate to high visual quality, high viewer concern, and moderate viewer exposure results in an overall rating of moderate to high for visual sensitivity of the visual setting and viewing characteristics.

KOP 1-10 – US 395 North of Lone Pine Looking Southeast

Figure 3.2-7a (KOP 1-10 US 395 Lone Pine, Existing View) presents the existing view to the southeast from US 395, approximately three miles north of Lone Pine. The view encompasses a portion of Segment 1 within the existing utility corridor that converges on, and then parallels, the east side of US 395.

Visual Quality. Low to Moderate. The foreground to middleground rural landscape encompasses a flat valley plain and electric utility corridor with substantial industrial character, backdropped by rounded hill slopes and irregular horizontal to angular ridgelines. Vegetation within, and adjacent to, the corridor appears somewhat non-descript with rounded forms becoming more indistinct with distance. Yellow to russet color tones predominate the valley floor vegetation, which provides some color contrast with the darker gray to lavender to bluish mountains in the middleground and background.

Viewer Concern. High. Although the existing energy transmission infrastructure features prominently in the foreground views from US 395, viewers would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky, valley plain, or mountain ranges) an adverse visual change.

Viewer Exposure. High. The Proposed Project would be highly visible in the foreground views from US 395. The number of viewers would be high, and the duration of view would be extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of high for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 1-10, combining the equally weighted low to moderate visual quality, high viewer concern, and high viewer exposure results in an overall rating of moderate to high for visual sensitivity of the visual setting and viewing characteristics.

KOP 1-11 – US 395 Near Owens Lake

Figure 3.2-8a (KOP 1-11 US 395 Owens Lake, Existing View) presents the existing view to the north from northbound US 395 near Owens Lake. The view encompasses a portion of Segment 1 within the existing utility corridor that converges on and then spans US 395.

Visual Quality. Low to Moderate. The foreground to middleground rural landscape encompasses a rolling to flat valley plain, border lands, and electric utility corridor with substantial industrial character, backdropped by rounded to angular distant mountains in some view directions. Vegetation within, and adjacent to, the corridor appears somewhat non-descript with low, irregular, and mounded grasses and shrubs becoming more indistinct with distance. Yellow to russet color tones predominate the vegetation, which provides some color contrast with the darker gray to bluish hues of the distant mountains.

Viewer Concern. High. Although the existing energy transmission infrastructure features prominently in the foreground views from US 395, viewers would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky, valley plain, or mountain ranges) an adverse visual change.

Viewer Exposure. High. The Proposed Project would be highly visible in the foreground views from US 395. The number of viewers would be high, and the duration of view would be extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of high for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 1-11, combining the equally weighted low to moderate visual quality, high viewer concern, and high viewer exposure results in an overall rating of moderate to high for visual sensitivity of the visual setting and viewing characteristics.

KOP 1-12a – Southbound US 395 South of Lone Pine Looking South

Figure 3.2-9a (KOP 1-12a US 395 South of Lone Pine, Existing View) presents the existing view to the south from southbound US 395, south of Lone Pine and approximately 0.4 mile north of Cottonwood Road. The view encompasses a portion of Segment 1 within the existing utility corridor that converges on, and then parallels, the west side of US 395.

Visual Quality. Low to Moderate. The foreground to middleground rural landscape encompasses a flat valley plain crossed by a visually prominent electric utility corridor with substantial industrial character, backdropped by mountain foothill slopes in the middleground and more distant mountains with angular to irregular ridgelines. Vegetation within, and adjacent to, the corridor presents as low, irregular tufts of grass and mounded shrubs becoming more continuous and indistinct with distance. Vegetation is predominantly tan to pale yellow with russet, green, and silver-gray highlights.

Viewer Concern. High. Although the existing energy transmission infrastructure features prominently in the foreground views from US 395, viewers would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky, valley plain, or mountain ranges) an adverse visual change.

Viewer Exposure. High. The Proposed Project would be highly visible in the foreground views from US 395. The number of viewers would be high, and the duration of view would be extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of high for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 1-12a, combining the equally weighted low to moderate visual quality, high viewer concern, and high viewer exposure results in an overall rating of moderate to high for visual sensitivity of the visual setting and viewing characteristics.

KOP 1-14 – SR 190 Near Olancha

Figure 3.2-10a (KOP 1-14 SR 190 Near Olancha, Existing View) presents the existing view to the southwest from SR 190, approximately 0.8-mile northeast of Olancha. The view encompasses a portion of Segment 1 within the existing utility corridor that spans SR 190.

Visual Quality. Low to Moderate. The foreground landscape is of a flat valley floor with extensive electric utility infrastructure exhibiting complex structures and considerable industrial character, transitioning to moderately sloping alluvial fans and prominent, rugged mountain massif in the background.

Vegetation within, and adjacent to, the corridor presents as low, irregular tufts of grass and mounded shrubs becoming more continuous and indistinct with distance. It is predominantly tan to pale yellow with russet, green, and silver-gray highlights. Foreground vegetation consists of low, irregular tufts of grasses and rounded shrubs. Foreground vegetative color ranges from yellow to tan to olive green, depending on season. A row of trees in the middleground is predominantly olive green in color.

Viewer Concern. High. Although the existing energy transmission infrastructure presents as visually prominent landscape features when viewed from SR 190, viewers would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky, alluvial fan, or mountains) an adverse visual change.

Viewer Exposure. Moderate to High. The Proposed Project would be highly visible in the foreground views from SR 190 in the vicinity of the span. The number of viewers would be low to moderate, but the duration of view would be extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of moderate to high for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 1-14, combining the equally weighted low to moderate visual quality, high viewer concern, and moderate to high viewer exposure results in an overall rating of moderate to high for visual sensitivity of the visual setting and viewing characteristics.

KOP 1-14.1 – South Haiwee Road at US 395 Looking East

Figure 3.2-11a (KOP 1-14.1 S. Haiwee Road at US 395, Existing View) presents the existing view to the east from the intersection of South Haiwee Road and US 395. The view encompasses a portion of South Haiwee Road (with adjacent wood-pole utility line), the southern end of South Haiwee Reservoir, and the existing electric transmission corridor passing in front (to the west) of the reservoir, backdropped by the rugged, western foothills of the Coso Range. The existing subtransmission line with weathered-gray lattice structures is barely discernible.

Visual Quality. Moderate. The foreground to middleground flat valley floor with its tan to russet and olive-green colored grasses and rounded shrubs is relatively non-descript in contrast to the abruptly rising, rugged ridgelines of the western Coso Mountains, which provide features of visual interest. The rough-hewn appearing wood utility poles along South Haiwee Road do not appear inconsistent in this rural setting.

Viewer Concern. High. Although the existing energy transmission infrastructure in the utility corridor and along South Haiwee Road is visible from KOP 1-14.1 and other locations along South Haiwee Road and establishes a structural context for any new or additional facilities in the utility corridor, viewers in the vicinity of KOP 1-14.1 and along South Haiwee Road would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (South Haiwee Lake or mountains) an adverse visual change.

Viewer Exposure. Moderate. The Proposed Project would be visible, though not visually prominent in the foreground views from KOP 1-14.1. While the number of viewers would be low (along South Haiwee Road), the duration of view would be extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of moderate for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 1-14.1, combining the equally weighted moderate visual quality, high viewer concern, and moderate viewer exposure results in an overall rating of moderate to high for visual sensitivity of the visual setting and viewing characteristics.

KOP 1-16 – Northbound US 395 North of Red Hill Cinder Cone Looking North

Figure 3.2-12a (KOP 1-16 US 395 North of Red Hill, Existing View) presents the existing view to the north from northbound US 395, approximately 1.5 miles north of Red Hill Cinder Cone. The view encompasses a portion of Segment 1 within the existing utility corridor that parallels the east side of US 395.

Visual Quality. Moderate. The foreground to middleground rural landscape encompasses a flat valley plain and barely discernible electric utility corridor, backdropped by the angular to horizontal western foothills of the Coso Range to the east. Also visible to the west (left) of US 395 is a portion of the Sierra Nevada Mountains. Both mountain ranges provide features of visual interest. Vegetation within, and adjacent to, the corridor appears somewhat non-descript with low-growing, rounded forms becoming more indistinct with distance. Tan to russet color tones predominate the foreground to middleground vegetation.

Viewer Concern. High. Although the existing energy transmission infrastructure is visible in the foreground views from US 395, viewers would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background valley floor or mountain slopes) an adverse visual change.

Viewer Exposure. High. The Proposed Project would be moderately to highly visible in the foreground views from US 395. The number of viewers would be high, and the duration of view would be extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of high for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 1-16, combining the equally weighted moderate visual quality, high viewer concern, and high viewer exposure results in an overall rating of moderate to high for visual sensitivity of the visual setting and viewing characteristics.

KOP 1-17 – Fossil Falls Trail

Figure 3.2-13a (KOP 1-17 Fossil Falls Trail, Existing View) presents the existing view to the southwest from Fossil Falls Trail. The view encompasses a portion of Segment 1 within the existing utility corridor that passes approximately 0.3 mile west of Fossil Falls.

Visual Quality. Moderate to High. The foreground is dominated by dark, rounded to jagged, volcanic rock backdropped by a middleground flat plain that transitions to a background of rounded to sloping and angular mountain ridges. The existing electric utility corridor is barely discernible traversing the middleground plain. Vegetation within, and adjacent to, the utility corridor appears somewhat non-descript and indistinct at this viewing distance. Tan to russet color tones predominate in the middleground vegetation.

Viewer Concern. High. Although the existing energy transmission infrastructure is noticeable in the foreground views from the Fossil Falls Trail, viewers would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background plain or slopes) an adverse visual change.

Viewer Exposure. Moderate. The Proposed Project would be moderately visible in the foreground views from Fossil Falls Trail. The number of viewers would be low, but the duration of view would be extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of moderate for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 1-17, combining the equally weighted moderate to high visual quality, high viewer concern, and moderate viewer exposure results in an overall rating of moderate to high for visual sensitivity of the visual setting and viewing characteristics.

KOP 1-17.1 – Red Hill Cinder Cone

Figure 3.2-14a (KOP 1-17.1 US 395 Near Red Hill, Existing View) presents the existing view to the east-southeast from southbound US 395, immediately west of Red Hill Cinder Cone. The view encompasses a portion of Segment 1 within the existing utility corridor that passes between Red Hill Cinder Cone (Red Hill) and US 395.

Visual Quality. Low to Moderate. The foreground to middleground rural landscape encompasses a thin strip of relatively non-descript valley floor where the existing utility corridor passes between US 395 and Red Hill. The rounded form of Red Hill rising abruptly from the flat valley plain is the principal feature of visual interest in the view from KOP 1-17.1. Vegetation within, and adjacent to, the existing corridor presents as low, irregular tufts of grass and mounded shrubs becoming more continuous and indistinct with distance. Vegetation is predominantly tan to gray to pale yellow with russet, green, and silver-gray highlights. As its name suggests, reddish-rust hues characterize the Red Hill cinder cone, which provides an interesting color contrast between the reddish rock and soils of the cinder cone and the surrounding lighter soils and vegetation. The existing lattice-structure subtransmission line imparts an industrial character that compromises the view of Red Hill from US 395 though the “transparent” nature of the lattice design lessens that impact. Vehicles on northbound US 395 also obstruct the view of Red Hill from southbound US 395, and overall visual quality would be low to moderate.

Viewer Concern. High. Although the existing energy transmission infrastructure features prominently in the foreground views from US 395, viewers would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (Red Hill and background sky) an adverse visual change.

Viewer Exposure. High. The Proposed Project would be highly visible in the foreground views from US 395. The number of viewers would be high, and the duration of view would be extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of high for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 1-17.1, combining the equally weighted low to moderate visual quality, high viewer concern, and high viewer exposure results in an overall rating of moderate to high for visual sensitivity of the visual setting and viewing characteristics.

KOP 1-17.2a – Northbound US 395 at Cinder Road Looking North-Northeast

Figure 3.2-15a (KOP 1-17.2a US 395-Cinder Road NNE, Existing View) presents the existing view to the north-northeast from the intersection of Cinder Road and northbound US 395, immediately southeast of Red Hill. The view encompasses a portion of Segment 1 within the existing utility corridor that passes between Red Hill and US 395.

Visual Quality. Low to Moderate. The foreground to middleground rural landscape encompasses a thin strip of relatively non-descript valley floor where the existing utility corridor passes between US 395 and Red Hill. The rounded form of Red Hill rising abruptly from the flat valley plain is the principal feature of visual interest in the view from KOP 1-17.2a. Vegetation within, and adjacent to, the existing corridor presents as low, irregular tufts of grass and mounded shrubs becoming more continuous and indistinct with distance. Vegetation is predominantly tan to gray to pale yellow with russet, green, and silver-gray highlights. As its name suggests, reddish-rust hues characterize the Red Hill landform. The existing lattice-structure subtransmission line imparts an industrial character that compromises the view of Red Hill from US 395 though the "transparent" nature of the lattice design lessens that impact. The overall visual quality would be low to moderate.

Viewer Concern. High. Although the existing energy transmission infrastructure features prominently in the foreground views from US 395 and Cinder Road, viewers would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (Red Hill and background sky) an adverse visual change.

Viewer Exposure. High. The Proposed Project would be highly visible in the foreground views from US 395. The number of viewers would be high, and the duration of view would be extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of high for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 1-17.2a, combining the equally weighted low to moderate visual quality, high viewer concern, and high viewer exposure results in an overall rating of moderate to high for visual sensitivity of the visual setting and viewing characteristics.

KOP 1-17.2b – Cinder Road at US 395 Looking East

Figure 3.2-16a (KOP 1-17.2b US 395-Cinder Road-East, Existing View) presents the existing view to the east from the intersection of Cinder Road and northbound US 395, immediately southeast of Red Hill. The view encompasses a portion of Segment 1 within the existing utility corridor that passes between Red Hill and US 395 and spans Cinder Road.

Visual Quality. Low to Moderate. The foreground to middleground rural landscape encompasses a thin strip of relatively non-descript valley floor punctuated with outcrops of volcanic rock where the existing utility corridor passes between US 395 and Red Hill. The most notable landscape features of visual interest are the outcrops of volcanic rock that protrude from the flat valley plain, backdropped by the more distant Volcano Peak and western foothills of the Coso Range. As shown in the view from KOP 1-17.2b, vegetation within, and adjacent to, the existing corridor presents as low, irregular tufts of grass and mounded shrubs becoming more continuous and indistinct with distance. The distant hills are predominantly light tan in color from vegetation coverage except for the darker areas of historic lava flows from Volcano Peak. The existing lattice-structure subtransmission line imparts an industrial character that somewhat compromises the view of the landscape from US 395 though the "transparent" nature of the lattice design minimizes that impact. The overall visual quality would be low to moderate.

Viewer Concern. High. Although the existing energy transmission infrastructure features prominently in the foreground views from US 395 and Cinder Road, viewers would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky, valley plain, Volcano Peak, or hills) an adverse visual change.

Viewer Exposure. High. The Proposed Project would be highly visible in the foreground views from US 395. The number of viewers would be high, and the duration of view would be moderate. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of high for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 1-17.2b, combining the equally weighted low to moderate visual quality, high viewer concern, and high viewer exposure results in an overall rating of moderate to high for visual sensitivity of the visual setting and viewing characteristics.

KOP 1-18 – Northbound US 395 at Little Lake Looking Northeast

Figure 3.2-17a (KOP 1-18 US 395 at Little Lake, Existing View) presents the existing view to the northeast from northbound US 395 at Little Lake. The view encompasses a portion of Segment 1 within the existing utility corridor that spans the southern end of Little Lake and passes adjacent to US 395.

Visual Quality. Moderate. The foreground to middleground rural landscape primarily encompasses a flat valley plain, lake, and electric utility corridor with substantial industrial character, all backdropped by a dark, linear, basalt escarpment and more distant, irregular to rounded, lighter-colored mountains. Vegetation appears somewhat non-descript with some rounded to irregular forms bordering the lake that become more indistinct with distance. Pale yellow to tan and pale olive color with some gray highlights predominate in the landscape. The blue color of the lake, which is an uncommon feature in the greater Owens Valley, provides a pleasing color contrast with the darker rock outcrops and basalt escarpment and lighter grasses and pale mountains. This visually interesting (and valued) color palette enhances overall visual quality but is somewhat offset by the presence of US 395, the adjacent barbed wire fence, and the visually prominent utility corridor. The resulting overall visual quality is moderate.

Viewer Concern. High. Although the existing energy transmission infrastructure features prominently in the foreground views from US 395, viewers would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky, valley plain, lake, escarpment, or mountain ranges) an adverse visual change.

Viewer Exposure. High. The Proposed Project would be highly visible in the foreground views from US 395. The number of viewers would be high, and the duration of view would be extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of high for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 1-18, combining the equally weighted moderate visual quality, high viewer concern, and high viewer exposure results in an overall rating of moderate to high for visual sensitivity of the visual setting and viewing characteristics.

KOP 1-19 – Northbound US 395 at The Narrows Looking North

Figure 3.2-18a (KOP 1-19 US 395 at The Narrows, Existing View) presents the existing view to the north from northbound US 395 at The Narrows, approximately three miles south of Little Lake. The view encompasses a portion of Segment 1 within the existing utility corridor that parallels the east side of US 395 through The Narrows.

Visual Quality. Moderate. The foreground to middleground rural landscape encompasses a narrow portion of a flat valley plain containing an existing, lattice-structure, electric transmission line, backdropped by a darker, linear, basalt escarpment. The somewhat “transparent” nature of the lattice structures helps to blend them with the background escarpment. However, it is the reflective characteristics of the light-gray steel that causes them to appear lighter in color and stand out somewhat from the darker background, depending on time of day and season. Vegetation appears somewhat non-descript with some rounded to irregular forms, becoming more indistinct and continuous with distance. Pale yellow to tan grasses and tan to russet-colored shrubs predominate in the landscape. The lighter color tones of the vegetation and some soils provide a degree of contrast with the darker volcanic rock of the background escarpment, contributing visual interest to an otherwise fairly limited-chromatic landscape. The resulting overall visual quality is rated moderate.

Viewer Concern. High. Although the existing energy transmission infrastructure is visible in the foreground views from US 395, viewers would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background escarpment, valley plain, or sky) an adverse visual change.

Viewer Exposure. High. The Proposed Project would be highly visible in the foreground views from US 395. The number of viewers would be high, and the duration of view would be extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of high for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 1-19, combining the equally weighted moderate visual quality, high viewer concern, and high viewer exposure results in an overall rating of moderate to high for visual sensitivity of the visual setting and viewing characteristics.

KOP 1-20 – Northbound US 395 at The Narrows South Looking North

Figure 3.2-19a presents the existing view to the north from northbound US 395, near the southern end of The Narrows. The view encompasses a portion of Segment 1 within the existing utility corridor that parallels the east side of US 395 through The Narrows.

Visual Quality. Moderate. The foreground to middleground rural landscape encompasses a narrow portion of a flat valley plain containing an existing, lattice-structure, electric transmission line, backdropped by a darker, linear, basalt escarpment. The somewhat "transparent" nature of the lattice structures helps to blend them with the background escarpment. However, it is the reflective characteristics of the light-gray steel that causes them to appear lighter in color and stand out somewhat from the darker background, depending on time of day and season. Vegetation appears somewhat non-descript with some rounded to irregular forms, becoming more indistinct and continuous with distance. Pale yellow to tan grasses and tan to russet-colored shrubs predominate in the landscape. The lighter color tones of the vegetation and soils and background mountains provide a degree of contrast with the darker volcanic rock escarpment, which contributes visual interest to an otherwise fairly limited-chromatic landscape. The resulting overall visual quality is rated moderate.

Viewer Concern. High. Although the existing energy transmission infrastructure is visible in the foreground views from US 395, viewers would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky, valley plain, escarpment, or mountains) an adverse visual change.

Viewer Exposure. High. The Proposed Project would be highly visible in the foreground views from US 395. The number of viewers would be high, and the duration of view would be extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of high for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 1-20, combining the equally weighted moderate visual quality, high viewer concern, and high viewer exposure results in an overall rating of moderate to high for visual sensitivity of the visual setting and viewing characteristics.

KOP 1-21 – Patrice Avenue in Inyokern Looking Southeast

Figure 3.2-20a (KOP 1-21 Patrice Ave. Inyokern, Existing View) presents the existing view to the southeast from Patrice Avenue in Inyokern near the southern end of Segment 1. The view encompasses a portion of a rural residential area adjacent to the existing utility corridor where the Project would be located.

Visual Quality. Low to Moderate. The foreground to middleground landscape is of a rural residential area and electric utility corridor that presents substantial industrial character due to the numerous utility structures with various designs. Vegetation within, and adjacent to, the corridor is for the most part substantially screened by the residential buildings and ornamental plantings or cleared for residential

purposes. Some natural vegetation appears as scattered clumps of grasses and shrubs with tan to muted green coloration with some russet highlights. Overall visual quality is low to moderate.

Viewer Concern. High. Although energy transmission infrastructure features prominently in the foreground views from Patrice Avenue and some adjacent residences, viewers would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky, valley plain, or mountain ranges) an adverse visual change.

Viewer Exposure. Moderate to High. The Proposed Project would be highly visible in the foreground views from Patrice Avenue and adjacent residences. While the number of viewers would be low, the duration of view would be extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of moderate to high for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 1-21, combining the equally weighted low to moderate visual quality, high viewer concern, and moderate to high viewer exposure results in an overall rating of moderate to high for visual sensitivity of the visual setting and viewing characteristics.

Segment 2: Inyokern to Kramer Junction

Overview

Notable landscape features and aesthetics resources that are visible from locations within Segment 2 include the El Paso Mountains, Rand Mountains, and the Rand Mining District State Historical Landmark. Segment 2 extends approximately 48 miles south from Inyokern Substation to Kramer Substation, which is located at the junction of US 395 and SR 58. From Inyokern Substation, the Project traverses the southern portion of Indian Wells Valley, crossing US 395 approximately 0.75 mile from the substation, and passes an area of widely dispersed residences around the unincorporated community of Inyokern. The Project then traverses the El Paso Mountains where it reaches an elevation of approximately 4,500 feet above mean sea level. After descending into a comparatively narrow desert basin and crossing Garlock Road, a local roadway connecting US 395 to SR 14 on the west, the Project enters the Rand Mountains where it skirts the historic mining community of Randsburg. South of Randsburg, the Project descends into the generally flat expanse of the western Mojave Desert and closely parallels US 395 for approximately 18 miles before entering Kramer Substation.

Key Observation Points

Views of the Project in Segment 2 would be available from rural residences in the vicinity of Inyokern; US 395; local roads including Brown Road, Garlock Road, Randsburg-Mojave Road, and Twenty Mule Team Parkway; BLM access roads; and the community of Randsburg. Four KOPs were selected to characterize the Segment 2 landscape setting (KOPs 2-1 through 2-4) and are discussed below (Note: All referenced figures are presented at the end of Section 3.2).

KOP 2-1 – Sydnor Avenue at Mercury Street in Inyokern

Figure 3.2-21a (KOP 2-1 Syndor Ave. Inyokern, Existing View) presents the existing view to the southeast from Sydnor Avenue at Mercury Street in Inyokern. The view encompasses a portion of a rural residential area adjacent to the existing utility corridor where the Project would be located.

Visual Quality. Low to Moderate. The foreground to middleground landscape is of a rural residential area and electric utility corridor that presents substantial industrial character due to the numerous utility structures with various designs. Vegetation within, and adjacent to, the corridor is for the most part substantially screened by the residential buildings and ornamental plantings for residential purposes.

Some natural vegetation appears as scattered clumps of grasses and shrubs with tan to muted green coloration with some russet highlights. Overall visual quality is low to moderate.

Viewer Concern. High. Although energy transmission infrastructure features prominently in the foreground views from Sydnor Avenue, Mercury Street, and the adjacent residences, viewers would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky, valley plain, or mountain ranges) an adverse visual change.

Viewer Exposure. Moderate to High. The Proposed Project would be highly visible in the foreground views from Sydnor Avenue, Mercury Street, and the adjacent residence. While the number of viewers would be low, the duration of view would be extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of moderate to high for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 2-1, combining the equally weighted low to moderate visual quality, high viewer concern, and moderate to high viewer exposure results in an overall rating of moderate to high for visual sensitivity of the visual setting and viewing characteristics.

KOP 2-2 – Powerline Road – North

Figure 3.2-22a (KOP 2-2 Powerline Road – North, Existing View) presents the existing view to the southeast from Powerline Road, approximately 2.3 miles south of Brown Road. The view is down the existing utility corridor where the Project would be located as it crosses an open plain and then the eastern portion of the El Paso Mountains.

Visual Quality. Low to Moderate. The foreground to middleground landscape is of a gently inclined plain extending to moderately rounded slopes with irregular and undulating ridgelines with a color palette ranging from tan to russet to brown with blue-grays at distance. Vegetation within, and adjacent to, the corridor for the most part consists of randomly distributed low-growing shrubs and grasses that transition to a more uniform appearance with distance. Vegetation colors range from yellow-green to yellow-brown with some muted, dark greens. Central to the view (from this inline viewing location) is an electric utility corridor that presents substantial industrial character due to the numerous utility structures with complex structural designs. Overall visual quality is low to moderate and is substantially influenced by the central presence of the utility corridor.

Viewer Concern. High. Although energy transmission infrastructure features prominently in the foreground to middleground views from Powerline Road, recreational travelers would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky, valley plain, or mountain ranges) an adverse visual change.

Viewer Exposure. Moderate to High. The Proposed Project would be highly visible in the foreground views from Powerline Road. While the number of viewers would be low, the duration of view would be extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of moderate to high for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 2-2, combining the equally weighted low to moderate visual quality, high viewer concern, and moderate to high viewer exposure results in an overall rating of moderate to high for visual sensitivity of the visual setting and viewing characteristics.

KOP 2-3 – Powerline Road – EP21

Figure 3.2-23a (KOP 2-3 Powerline Road - EP21, Existing View) presents the existing view to the southeast from Powerline Road/BLM Road EP21, approximately 3.9 miles south of Brown Road. The view is down

the existing utility corridor where the Project would be located as it crosses an open plain and then the eastern portion of the El Paso Mountains.

Visual Quality. Low to Moderate. The foreground to middleground landscape is of a gently inclined plain extending to moderately rounded slopes with irregular and undulating ridgelines with a color palette ranging from tan to russet to brown with blue-grays at distance. Vegetation within, and adjacent to, the corridor for the most part consists of randomly distributed low-growing shrubs and grasses that transition to a more uniform appearance with distance. Vegetation colors range from yellow-green to yellow-brown with some muted, dark greens. Central to the view (from this inline viewing location) is an electric utility corridor that presents substantial industrial character due to the numerous utility structures with complex structural designs. Overall visual quality is low to moderate and is substantially influenced by the central presence of the utility corridor.

Viewer Concern. High. Although energy transmission infrastructure features prominently in the foreground to middleground views from Powerline Road, recreational travelers would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky, valley plain, or mountain ranges) an adverse visual change.

Viewer Exposure. Moderate to High. The Proposed Project would be highly visible in the foreground views from Powerline Road. While the number of viewers would be low, the duration of view would be extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of moderate to high for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 2-3, combining the equally weighted low to moderate visual quality, high viewer concern, and moderate to high viewer exposure results in an overall rating of moderate to high for visual sensitivity of the visual setting and viewing characteristics.

KOP 2-4 – Lexington Avenue in Randsburg

Figure 3.2-24a (KOP 2-4 Lexington Ave. Randsburg, Existing View) presents the existing view to the north from KOP 2-4 on Lexington Avenue in the historic mining town of Randsburg. This view captures a portion of the residential landscape along Lexington Avenue backdropped by a portion of Segment 2 as it descends an adjacent ridge and passes close to the historic mining town.

Visual Quality. Low to Moderate. The foreground landscape consists of simple, rural residences backdropped by an angular to rolling ridge that is sparsely vegetated by grasses and shrubs of muted tan and green colors. Across the ridge, is the visually prominent utility corridor with multiple power lines consisting of structurally complex lattice towers and horizontal to curvilinear conductors. The existing utility structures with their notable industrial appearance detract from the integrity of the historic landscape character.

Viewer Concern. High. Although energy transmission facilities feature prominently in the landscape visible from the residences and commercial buildings of Randsburg, residents would consider any noticeable increase in industrial character, structure prominence, or view blockage of higher value landscape features (ridgeline or background sky) an adverse visual change.

Viewer Exposure. Moderate to High. The Project would be highly visible in the foreground views of local residents in Randsburg. While the number of residential viewers would be low, the duration of view would be extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of moderate to high for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For residential viewers in the vicinity of KOP 2-4, combining the equally weighted low to moderate visual quality, high viewer concern, and moderate to high viewer exposure results in an overall rating of moderate to high for visual sensitivity of the visual setting and viewing characteristics.

Segment 3N: Kramer Junction to Daggett

Overview

At Kramer Junction, the Project turns in an easterly direction and divides into two separate alignments that extend north and south of SR 58 for approximately 44 miles before merging at Coolwater Substation located approximately 9.5 miles southeast of the City of Barstow. From Kramer Substation the northern extension (Segment 3N) parallels US 395 for approximately 0.5 mile before turning east and paralleling SR 58 approximately 0.4 mile north of the highway for approximately 2.8 miles, at which point the roadway veers to the southeast and the Project continues in an easterly direction, passing close to a large solar photovoltaic facility and skirting the south edge of Harper Dry Lake, a mostly arid playa with a seasonal wetland that includes a wildlife viewing area. At the eastern edge of Harper Dry Lake, the Project passes within a few hundred feet of several isolated, rural residences north of the town of Hinkley, as it traverses an otherwise unpopulated desert basin. Crossing land under BLM administration approximately 8 miles east of Harper Dry Lake, the Project turns to the southeast, traversing and subsequently paralleling the northern edge of a series of granitic outcrops that extend north and east of Barstow. Entering the Mojave River Valley, the Project veers south crossing I-15 where it passes close to a school and RV park west of the community of Yermo, before reaching Coolwater Substation, within a somewhat populated and developed area approximately 8 miles east of central Barstow.

Key Observation Points

Segment 3N is the most isolated of the Project segments, located primarily away from regional transportation corridors. Throughout Segment 3N, the Project closely parallels one or more existing transmission alignments. Few close-range public views of the Project would be available and, overall, the Project would not be particularly discernible given the isolated nature of structures to be replaced, the similar form and scale of the replacement structures compared to the existing structures, and the similar diameters of the existing and replacement conductors. Therefore, in consultation with the BLM, no KOPs were selected for analysis along this segment.

Segment 3S: Kramer Junction to Barstow to Daggett

Overview

At Kramer Junction, Segment 3S extends southeast for approximately 10 miles, then east for approximately 9 miles as it passes the uninhabited southern edge of the Harper Dry Lake basin south of SR 58. Approximately 7 miles west of Barstow, the Project enters Hinkley Valley, where it crosses an area of widely scattered rural residences and agricultural land located within the Mojave River floodplain. The Project parallels and subsequently crosses the Mojave River as it approaches Barstow's western outskirts, where it then veers to the southeast and within less than 1 mile, the Project crosses SR 58, the National Trails Highway (historic route 66), and I-15 before turning east once again. Skirting Barstow's southern perimeter, the Project traverses a residential subdivision then crosses open desert, where it passes within 0.3 mile of a public park and recreation area. It crosses SR 247 at the northern edge of a BLM-administered OHV area. For the next approximately 8.5 miles, the Project traverses a largely uninhabited expanse of gently sloping terrain along the southern edge of the Mojave River Valley, crossing I-40 and the National Trails Highway less than 1 mile from Coolwater Substation, which is the eastern terminus of this segment.

Key Observation Points

Views of the Project in Segment 3S occur primarily at road crossings in the vicinity, and east of, Barstow. Views would be available from the rural residential community of Grandview west of Barstow, several rural residences, a residential subdivision in southern Barstow, and numerous highways and roads including I-15, I-40, SR 58, SR 247 (Barstow Road), National Trails Highway (Route 66), Riverview Road, Valley Wells Road, Old Hinkley Road, Hinkley Road, Mountain View Road, Lenwood Road, Agate Road, and

Camp Rock Road. In consultation with the BLM, one KOP (KOP 3-1) was selected to characterize the Segment 3S landscape setting and is discussed below (Note: All referenced figures are presented at the end of Section 3.2).

KOP 3S-1 – Eastbound Interstate 40 Near Daggett

Figure 3.2-25a (KOP 3S-1 I-40 Near Daggett, Existing View) presents the existing view to the east from eastbound I-40 near Daggett, approximately 0.26 mile west of the Project's span of I-40. The view encompasses a portion of Segment 3S within the existing utility corridor that converges on, and then spans, I-40 just east of Daggett.

Visual Quality. Low to Moderate. The foreground to background rural landscape presents a panoramic view of a flat valley plain; a prominent foreground linear freeway crossing the plain; and a foreground, prominently visible electric utility corridor all backdropped by the distant angular to horizontal form of the Newberry Mountains to the southeast. Vegetation within, and adjacent to, the corridor appears somewhat non-descript with low-growing, rounded forms becoming more indistinct with distance. Tan- to russet-color tones with some subdued olive greens characterize the foreground to middleground vegetation.

Viewer Concern. High. Although the existing energy transmission infrastructure is visible in the foreground views from I-40, travelers would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background valley floor, mountain ranges, or sky) an adverse visual change.

Viewer Exposure. High. The Proposed Project would be highly visible in the foreground views from I-40. The number of viewers would be high, and the duration of view would be extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of high for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 3S-1, combining the equally weighted low to moderate visual quality, high viewer concern, and high viewer exposure results in an overall rating of moderate to high for visual sensitivity of the visual setting and viewing characteristics.

3.2.2. Applicable Regulations, Policies, and Standards

3.2.2.1. Federal Regulations, Policies and Standards

California Desert Conservation Area Plan

The CDCA Plan (BLM, 1980, amended 1999) covers approximately 25 million acres of which more than 12 million acres are public lands administered by the BLM. The Federal Land Policy and Management Act of 1976 (FLPMA; 90 Stat. 2743; 43 U.S. Code 1601, et seq.) directed BLM to inventory CDCA resources and to prepare a comprehensive land-use management plan for the area to provide for the use of the public lands "in a manner which enhances wherever possible—and which does not diminish, on balance—the environmental, cultural, and aesthetic values of the Desert and its productivity."

Desert Renewable Energy Conservation Plan (DRECP) Land Use Planning Amendment (LUPA) Record of Decision

The DRECP is a landscape-scale plan that covers 22.5 million acres in seven California counties—Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego. DRECP goals are to 1) provide a streamlined process for development of utility-scale renewable energy generation and transmission consistent with federal and state renewable energy targets and policies and 2) provide long-term conservation and management of special-status species and desert vegetation, as well as physical, cultural, scenic, and social resources within the DRECP Plan Area.

The BLM prepared a Record of Decision (2016) approving its Land Use Plan Amendment (LUPA) to the CDCA Plan as well as the Bishop Resource Management Plan. The BLM LUPA Decision Area includes BLM-managed lands within the DRECP Plan area plus additional BLM lands covered by the CDCA Plan outside the DRECP Plan Area. The LUPA identifies areas appropriate for renewable energy development and those important for "biological, environmental, cultural, recreation, social, and scenic conservation, consistent with the FLPMA multiple-use and sustained yield requirements."

California Historic Route 66 Corridor Management Plan: Needles to Barstow (CMP)

The California Historic Route 66 Corridor Management Plan: Needles to Barstow (BLM, 2015) was prepared for the routes to be considered for nomination as National Scenic Byway from the California border east of Needles, California, generally following Interstate Route 40, U.S. Route 95, Goffs Road and National Trails Highway to Barstow, California.

The CMP was prepared to help preserve the history of Route 66 through the Mojave Desert. It provides strategies for educating visitors about its significant cultural and natural landscape features and looks for ways to increase economic activity through enhanced recreation and heritage tourism opportunities.

The CMP also identifies the Visual Resource Inventory Classes (Figure 56), and the recommended Visual Resource Management Objectives (Figure 77) for BLM-administered lands that are visible from Historic Route 66.

3.2.2.2. State Regulations, Policies and Standards

California Scenic Highway Program

The California Scenic Highway Program—a provision of Sections 260 through 263 of the Streets and Highways Code—was established by the Legislature in 1963 to preserve and enhance the natural beauty of California (Caltrans, 2021). The State Scenic Highway System includes highways that are either eligible for designation as scenic highways or have been designated as such. The status of a State Scenic Highway changes from "eligible" to "officially designated" when the local jurisdiction adopts a scenic corridor protection program, applies to the California Department of Transportation (Caltrans) for scenic highway approval, and receives the designation from Caltrans. A city or county may propose adding routes with outstanding scenic elements to the list of eligible highways. However, State legislation is required.

Eligible scenic highways in the Proposed Project study area include State Routes 58, 127, 168, 190, and 247; portions of US 395; and I-15 and I-40. The only designated scenic highway in the Proposed Project study area is a 20-mile segment of US 395 extending from the Fort Independence Reservation on the north to just east of Crater Mountain on the south (see Figure 3.2-25b; Designated Scenic Highway Segment of US 395).

California Landmarks and Points of Historic Interest

The California State Parks Office of Historic Preservation (2024) is responsible for administering federally and state mandated historic preservation programs to further the identification, evaluation, registration, and protection of California's historic resources including California Historic Landmarks and Points of Historic Interest. These resources are buildings, sites, features, or events that are of Statewide significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other historical value.

The Proposed Project study area includes two Historic Landmarks: Manzanar and the Rand Mining District. Listed on the National Registry of Historic Places and located nine miles north of Lone Pine, Manzanar commemorates the approximately 800-acre site where Japanese American citizens and resident Japanese aliens were incarcerated during World War II, when in 1942, the United States government detained more than 110,000 men, women, and children in remote, military-style camps. The Proposed Project alignment passes within approximately one mile of Manzanar. Situated near US 395 in Kern County, the Rand Mining

District commemorates discovery of the Rand Mine in 1895, along with the town of Randsburg and several other nearby sites that developed in conjunction with mining activity in the late 1800s and early 1900s. The Proposed Project alignment crosses the Rand Mining District near US 395 and Randsburg.

3.2.2.3. Local Regulations, Policies and Standards

Pursuant to General Order 131-E, the Project is not subject to local authority because the CPUC has exclusive jurisdiction over the siting, design and construction of electric power line projects, distribution lines, substations, and electric facilities constructed by public utilities subject to CPUC jurisdiction. However, local ordinance policies and requirements are summarized below for informational purposes.

Inyo County

General Plan Circulation Element (Inyo County, 2001)

Goal SH-1. Maintain a system of scenic routes that will preserve and enhance the quality of life for present and future generations.

- Policy SH-1.1. Protect the natural qualities of designated scenic routes.

General Plan Conservation/Open Space Element

Goal VIS-1. Preserve and protect resources throughout the County that contribute to a unique visual experience for visitors and quality of life for County residents.

- Policy VIS-1.3. Man-made slopes should be treated to reflect natural hillside conditions in the surrounding area.
- Policy VIS-1.4. Within communities, building equipment shall be screened from public view.
- Policy VIS-1.6. The County shall require that all outdoor light fixtures including street lighting, externally illuminated signs, advertising displays, and billboards use low-energy, shielded light fixtures which direct light downward (i.e., lighting shall not emit higher than a horizontal level) and which are fully shielded. Where public safety would not be compromised, the County shall encourage the use of low-pressure sodium lighting for all outdoor light fixtures.

Kern County

General Plan Circulation Element (Kern County, 2009)

Section 2.3.9, Scenic Route Corridors, of the Circulation Element recognizes several Caltrans-designated Eligible State Scenic Highways within the County including portions of US 395 and SR 58 (refer to California Scenic Highway Program in Section 3.2.2.2 of this document). Caltrans has the responsibility for coordinating the Scenic Highway Program.

General Plan Land Use, Open Space, and Conservation Element

Goal—General Provisions. Ensure that the County can accommodate anticipated future growth and development while maintaining a safe and healthful environment and a prosperous economy by preserving valuable natural resources, guiding development away from hazardous areas, and assuring the provision of adequate public services.

- Policy 1.10.7 Light and Glare
  - 47. Ensure that light and glare from discretionary new development projects are minimized in rural as well as urban areas.
  - 48. Encourage the use of low-glare lighting to minimize nighttime glare effects on neighboring properties.

- Policy 1.10.10 Oak Tree Conservation
  - 65. Oak woodlands and large oak trees shall be protected where possible and incorporated into project developments.
  - 66. Promote the conservation of oak tree woodlands for their environmental value and scenic beauty.

San Bernardino County

San Bernardino Countywide Plan, Policy Plan, Natural Resources Element, Scenic Resources (San Bernardino County, 2020)

Goal NR-4. Scenic resources that highlight the natural environment and reinforce the identity of local communities and the county.

- 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.

3.2.3. Environmental Impacts of the Proposed Project

This section discusses adverse aesthetics effects that would occur with implementation of the Proposed Project including the direct and indirect effects of construction and the long-term presence of the Proposed Project (including operations and maintenance activities). This section also presents mitigation measures to avoid or reduce significant aesthetics effects resulting from the Proposed Project.

3.2.3.1. Impact Analysis Approach

An adverse visual/aesthetics effect typically occurs within public view when: (1) an action perceptibly changes existing features of the physical environment so that they no longer appear to be characteristic of the subject locality or region; (2) an action introduces new features to the physical environment that are perceptibly uncharacteristic of the region and/or locale; or (3) visually prominent natural or cultural features of the landscape become less visible (e.g., partially or totally blocked from view) or are removed. Changes that seem uncharacteristic are those that appear out of place, discordant, or distracting. The degree of the visual effect depends upon how noticeable the adverse change may be. The noticeability of a visual effect is a function of project features, context, and viewing conditions (angle of view, distance, primary viewing directions, and duration of view).

The factors considered in determining adverse effects on aesthetics or visual resources include: (1) scenic quality of the Proposed Project landscape; (2) available visual access and visibility, frequency, and duration that the landscape is viewed; (3) viewing conditions (distance, angle of observation, relative size or scale, spatial relationships, motion, light conditions, seasonable variability, and atmospheric conditions) and the degree to which the Proposed Project components would dominate the view of the observer; (4) resulting contrast (form, line, color, and texture) of the Proposed Project facilities or activities with existing landscape characteristics and expected vegetation recovery time; (5) the extent to which Project features or activities would block views of higher value landscape features; and (6) the level of public interest in the existing landscape characteristics and concern over potential changes. Digital techniques were used to produce simulations of the Proposed Project as it would appear with implementation as seen from representative KOPs. The Project simulations assisted in the assessment of the contrast of the Proposed Project

with existing built and natural landscape elements. Effects on visual resources within the Proposed Project area could result from various activities including facility construction, Proposed Project operations and maintenance, and Project decommissioning (with impacts similar to construction).

The effects on visual resources can be either direct or indirect. The impact discussions presented later in this section primarily address the direct effects on visual resources since visual resources effects tend to almost always be direct.

The analysis used the Visual Sensitivity–Visual Change (VS VC) System approach to assess the aesthetics effects of the Project on existing landscapes. Under the VS-VC System, overall visual change is determined at each KOP based on an assessment and equal weighting of Project-induced visual contrast, Project dominance, and view blockage (or view impairment) as well as an evaluation of a visual simulation of the Project. Project-induced visual change could result from aboveground facilities; vegetation removal; land-form modification; component size, scale, or design relative to existing landscape characteristics; and the placement of Project components relative to developed features. The experience of visual change can also be affected by the degree of available screening by vegetation, landforms, and/or structures; distance from observers; atmospheric conditions; and angle of view. Each of the key factors contributing to visual change is discussed below.

Visual Contrast describes the degree to which a project's visual characteristics or elements (consisting of form, line, color, and texture) differ from the same visual elements established in the existing landscape. The degree of contrast can range from Low to High. The presence of forms, lines, colors, and textures in the landscape like those of a project's indicates a landscape more capable of accepting those project characteristics than a landscape where those elements are absent. This ability to accept alteration is often referred to as visual absorption capability and typically is inversely proportional to visual contrast.

Project Dominance is a measure of a feature's apparent size relative to other visible landscape features and the total field of view. A feature's dominance is affected by its relative location in the field of view and the distance between the viewer and the feature. The level of dominance can range from Subordinate to Dominant and, in effect, is a measure of the degree to which a feature or project demands the attention of the casual observer.

View Blockage or Impairment describes the extent to which any previously visible landscape features are either blocked from view, or the view is impaired because of a project's scale and/or position. View impairment of higher-quality landscape features by lower-quality project features causes adverse visual impacts. The degree of view impairment/blockage can range from None to High.

Overall Visual Change is a concluding assessment as to the degree of change that would be caused by a project. Overall visual change is derived by combining the three equally weighted factors of visual con-trast, project dominance, and view blockage and can range from Low to High. In some cases, however, where view blockage is reduced by a project, overall visual change may be Improved.

Overall visual change is then considered within the context of the determined overall visual sensitivity of the existing landscape and viewing dynamics, and an impact significance conclusion is made per CEQA requirements. Actual parameter determinations (e.g., visual contrast, project dominance, and view blockage) are based on analyst experience and site-specific circumstances.

Lower visual sensitivity ratings paired with lower visual change ratings will generally correlate well with lower degrees of impact significance when viewed in the field. Conversely, higher visual sensitivity ratings paired with higher visual change ratings will tend to result in higher degrees of visual impact.

Implicit in this rating methodology is the acknowledgment that for a visual impact to be considered significant, two conditions generally exist: (1) the existing landscape is of reasonably high-quality and is relatively valued by viewers, and (2) the perceived incompatibility of one or more project elements or characteristics tends toward the high extreme, leading to a substantial reduction in visual quality.

Applicant Proposed Measures (APMs)

The Applicant proposes to implement one measure pertaining to aesthetics to ensure the Proposed Project would occur with minimal environmental impacts in a manner consistent with applicable rules and regulations. The Applicant proposes to implement this measure during the design, construction, and operation of the Proposed Project to avoid or minimize potential environmental impacts. Implementation of this APM is considered part of the Proposed Project for purposes of the evaluation of environmental impacts. The APM proposed for Aesthetics pertains to night lighting and is presented in Table 3.2-1.

Table 3.2-1. Applicant Proposed Measure – Aesthetics

APM	Description
Aesthetics	
APM AES-8	If associated with a significant aesthetic impact, night lighting for construction activities, staging areas and other areas used for construction, as well as nighttime facility operations, shall be the minimum necessary to ensure safety and security for nighttime activities and operations. All night lighting used for construction or operations and maintenance shall orient lights downward and be shielded to eliminate off-site light spill at times when the lighting is in use. Lighting at construction locations and Project facilities shall consist of light-emitting diode lights in all areas where nighttime operations or maintenance activities will occur and be either motion-activated or use timers to ensure safety and security and reduce the impact of additional light pollution.

3.2.3.2. Impact Significance Criteria

The criteria listed below were used to determine if the Proposed Project would result in significant impacts on aesthetic/visual resources and were derived from the CEQA Environmental Checklist Form in Appendix G of the State CEQA Guidelines.

- **Impact AE-1 (Not Evaluated)**: Would the Proposed Project have a substantial adverse effect on a scenic vista?

  A scenic vista is generally considered a specific viewpoint or viewing location (often an elevated overlook) that provides expansive views of a highly valued landscape for the benefit of the general public. Scenic vistas are frequently officially designated by public agencies and are often signed and accessible to the public for the express purposes of viewing and sightseeing. Although there are expansive views of the surrounding landscape throughout the US 395 corridor, and there are slightly elevated perspectives providing slightly superior (elevated) views of the Proposed Project because of terrain variation, there are no officially designated or community recognized scenic vistas in the Proposed Project study area. Therefore, this factor is not evaluated in this EIR; there are no impact conclusions to make for this criterion.

- **Impact AE-2**: Would the Proposed Project substantially damage scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?

  A 20-mile segment of US 395 between approximately Fish Springs Road in the north and Fort Independence in the south is an Officially Designated Scenic Highway. Therefore, this criterion will be utilized to determine aesthetic impact conclusions under Segment 1.

- **Impact AE-3**: In non-urbanized areas, would the Proposed Project substantially degrade the existing visual character or quality of public views of the site and its surroundings?

  Most of the Proposed Project impacts associated with construction or long-term presence of Project components fall into the category of degradation of visual character or quality of public views of the site and its surroundings. Substantial degradation results from higher levels of visual contrast, project dominance, and view blockage. Visual contrast relates to spatial characteristics, visual scale, texture,

form, line, and color. Therefore, this criterion is utilized for making impact conclusions regarding the Proposed Project's effects on existing landscapes and views.

- **Impact AE-4 (Not Evaluated)**: In urbanized areas, would the Proposed Project conflict with applicable zoning and/or other regulations governing scenic quality?

  While the Proposed Project passes near several communities including Wilkerson, Big Pine, Lone Pine, Cartago, Inyokern, Randsburg, and Baker, it does not pass through any areas that would be considered urbanized. A 1-mile stretch of Segment 3S does pass through a residential area (in an existing transmission line corridor) in the south of Barstow. However, there are no specific policies or strategies identified in the City of Barstow General Plan that would pertain to the Proposed Project (City of Barstow, 2014). Therefore, there are no impact conclusions to make for this criterion.

- **Impact AE-5**: Would the Proposed Project create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?

  The Proposed Project construction, operations, and maintenance may require a limited amount of night lighting. Therefore, this criterion will be utilized to determine aesthetic impact conclusions with respect to night lighting impacts.

Sections 3.2.3.3 through 3.2.3.6 describe the Proposed Project's impacts by segment, impact heading, and timeframe. As discussed above under Impact Significance Criteria, Impact AE-1 (scenic vistas) and Impact AE-4 (local zoning/policy) would not apply to the Proposed Project and will not be addressed in this section. Impact AE-2 (scenic highways) only applies to a short segment of US 395 in Segment 1 and will only be addressed there. Impact AE-3 is subdivided by representative KOPs. However, the analysis of Impacts AE-3 (site and surroundings) and AE-5 (night lighting) apply to all segments. The impact discussions conclude with overall assessments of the significance of the Proposed Project's aesthetics impacts and, where appropriate, mitigation measures are provided.

3.2.3.3. Segment 1: Bishop to Inyokern

In Segment 1, SCE would remove all existing subtransmission towers, poles, and conductors and would replace them with tubular steel poles (TSPs), lightweight steel (LWS) poles, LOS pole H-frames, tubular steel multi-poles, and LWS pole structures and new conductors. SCE would also install overhead groundwire or optical groundwire for system protection.

Impact AE-2: Substantially damage scenic resources within a State scenic highway.

Construction

General Construction Impacts. *LESS THAN SIGNIFICANT.* Construction of the Proposed Project would cause temporary visual effects due to the presence of equipment, vehicles, materials, and workforce. These effects would occur throughout the Proposed Project area. Construction would involve the use of cranes, heavy construction equipment, temporary storage and office facilities, and temporary laydown/staging areas.

Construction activities would include site clearing and grading, erection of the structures, conductor stringing and pulling, and site cleanup and restoration. Construction activities would be visible from scattered rural residences; rural residential enclaves, and communities (Wilkerson, Independence, Cartago, and Olancha); larger communities (Big Pine, Lone Pine, and Inyokern); Manzanar National Historic Site; US 395, SR 136, and SR 190; and numerous local roads and recreational sites. Throughout the construction period, the industrial character of the activities would cause substantial visual contrast and visual change and constitute adverse visual effects when viewed from the immediate Project vicinity, roads in the Project area, and all of the KOPs.

Since construction activities and equipment brought into the Proposed Project area and onto the Proposed Project sites would be temporary, they would result in less than significant aesthetics impacts.

Construction and/or Material Yards. *SIGNIFICANT AND UNAVOIDABLE.* Three construction/contractor yards are proposed to be located within the foreground of views from the Officially Designated Scenic Highway segment of US 395. These yards are defined as numbers 1-4, 1-6, and 1-7 (see Table 2-3, Chapter 2) and mapped on Figure 2-6b through Figure 2-6d (Material Yards Segment 1) in Chapter 2.

Section 2.4.9.1 describes the construction process for Segment 1 of the Proposed Project. Due to the construction phasing requirement that the Segment 1 Project components first be fully constructed, and subsequently the existing Project structures would be removed, followed by a cleanup phase. SCE states that that the yards in Segment 1 would be occupied for approximately 39 months (SCE Response to Data Request 18-4), given the project schedule. As described in Chapter 2, the new line would be fully constructed and energized before SCE decommissions and removes the existing line. In response to Data Request 18-4, SCE stated that Material Yards 1-4 and 1-5 could be removed with minimal impact to construction. However, SCE will require the use Material Yard 1-7, an approximately 5-acre site located about 400 feet east of US 395 on the north side of Aberdeen Station Road (about 13 miles south of the community of Big Pine). SCE further stated that there are no suitable replacement yards for this segment of the Project.

Given the 39-month proposed use of Material Yard 1-7, the introduced visual contrast and industrial character would create a significant impact on views from the scenic highway.

Operations and Maintenance

SIGNIFICANT AND UNAVOIDABLE. Within the northern portion of Segment 1, the Project parallels and crosses (once) a 20.1-mile segment of US 395 that is an Officially Designated Scenic Highway, between Fort Independence in the south to approximately Fish Springs Road in the north. This area of the Project is 8 to 9 miles south of the community of Big Pine, between Project Mileposts 24 and 26 (see Figure 3.2-25c, Scenic Highway Segment Crossed by Proposed Project).

Along this designated segment of scenic highway, the separation between the Project and the scenic highway ranges from 0 mile (at the line crossing of the highway) to approximately 3.6 miles (at the southern end of the designated scenic highway segment).

The Project crossing of the scenic highway occurs approximately 0.4 mile north of the intersection with East Elna Road, just west of the Tinemaha Reservoir. Approaching this location from the north (where the Project is on the west side of the highway) to the point where the right-of-way (ROW) diverges from the highway to the east, the existing line to be replaced consists of 11 monopoles, which would be replaced as follows:

- The first (northernmost) of the 3 monopole structures on the west side of the highway would be replaced with a multi-pole (two pole) structure,
- The first 6 of the monopoles on the east side of the highway (after the crossing) would be replaced with multi-poles.
- The next five existing monopole structures on the east side of the highway would be replaced with multi-pole structures (2 poles each location).
- The sixth and seventh structures heading south of the highway crossing would remain monopoles but the eighth structure (at the angle point where the alignment would begin to diverge to the east away from the highway) would again be a multi-pole.

In total, the Proposed Project would replace 11 existing monopoles with 18 slightly larger and more visually prominent poles over a linear distance of approximately 1 mile.

Refer to Figures 3.2-26a (KOP 1-22 Southbound US 395, Existing View) and 3.2-26b (KOP 1-22 Southbound US 395, Proposed Project Sim.), which provide views and simulations within the scenic highway segment. These figures illustrate the change that would occur along the southern portion of this stretch of the Project. The field of view presented in the existing view image (Figure 3.2-26a; KOP 1-22 Southbound US 395, Existing View) captures five monopoles along the east side of the highway (south of the highway crossing). For comparison, the simulation presented in Figure 3.2-26b (KOP 1-22 Southbound US 395 Proposed Project Sim.) shows the proposed 8 replacement poles – 3 multi-poles and 2 monopoles.

Along this stretch consisting of 11 existing monopoles, the Proposed Project's TSPs would be consistent in design, appearance, and color with the existing structures that would be replaced within the established utility corridor, but they would appear more visually prominent due their substantially greater number (because monopoles would be replaced by multi-pole structures) and slightly greater height (from 3 to 20 percent taller) and width.

Although the existing subtransmission line adversely impacts the views from this scenic highway, this view is part of the baseline environmental setting under CEQA. The Proposed Project would introduce additional structures into the roadside landscape with their associated industrial character and adverse visual contrast. The additional structures would further impair public views of the background scenic resources (valley landscape and Inyo Mountains) from the State scenic highway. The resulting aesthetics impact would be significant and unmitigable under this criterion.

Note that the Crater Mountain Realignment Alternative (evaluated in Chapter 4) would move this segment of the Proposed Project approximately 2 miles west of this location. As described in that analysis the alternative would avoid the Proposed Project's new impact on the scenic highway segment, and the relocation of the existing line (to the Crater Mountain Realignment Alternative route) would cause a beneficial improvement to the quality of the views from the scenic highway.

Impact AE-3: In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings.

Most of the Project's impacts to aesthetics fall into the category of degradation of visual character or quality. Substantial degradation results from higher levels of visual contrast, project dominance, and view blockage. Visual contrast relates to spatial characteristics, visual scale, texture, form, line, and color. Therefore, these criteria will be utilized for making impact conclusions regarding the Proposed Project's effects on existing landscapes and views.

Construction

LESS THAN SIGNIFICANT. Construction of the Proposed Project would cause temporary visual effects due to the presence of equipment, vehicles, materials, and workforce. These effects would occur throughout the Proposed Project area. Construction would involve the use of cranes, heavy construction equipment, temporary storage and office facilities, and temporary laydown/staging areas.

Construction activities would include site clearing and grading, erection of the structures, conductor stringing and pulling, and site cleanup and restoration. Construction activities would be visible from scattered rural residences; rural residential enclaves, and communities (Wilkerson, Independence, Cartago, and Olancha); larger communities (Big Pine, Lone Pine, and Inyokern); Manzanar National Historic Site; US 395, SR 136, and SR 190; and numerous local roads and recreational sites.

Throughout the construction period, the industrial character of the activities would cause substantial visual contrast and visual change and constitute adverse visual effects when viewed from the general project vicinity, roads in the Proposed Project vicinity, and all the KOPs. However, since construction activities and equipment brought into the Proposed Project area and onto the Proposed Project sites would be temporary, they would result in less than significant aesthetics impacts and no mitigation is required.

Operations and Maintenance

Impact AE-3 considers the permanent impacts of the Proposed Project. These are the operational and maintenance effects resulting from the presence of the rebuilt subtransmission line (Proposed Project), as compared with the presence of the existing subtransmission line. The analysis of operational effects was conducted with respect to the visual change perceived from representative KOPs at sensitive public viewing locations. As previously stated, aesthetics effects associated with project operation are typically direct effects. Therefore, the operational effects addressed in this section should be considered direct effects unless otherwise noted.

The following paragraphs present the aesthetics analysis for each of the 19 representative KOPs selected within Segment 1 (see descriptions of each KOP in Section 3.2.1.3). Project effects relative to each KOP are illustrated in photo-simulations provided at the end of Section 3.2.

KOP 1-2 – Gerkin Road, South of Bishop

LESS THAN SIGNIFICANT. Figure 3.2-2a (KOP 1-2 Gerkin Road, Existing View) presents the existing view to the north from Gerkin Road south of Bishop. The view encompasses a portion of Segment 1 within the existing utility corridor that parallels and then crosses Gerkin Road west of US 395. Figure 3.2-2b (KOP 1-2 Gerkin Road, Visual Simulation) presents a visual simulation that illustrates the replacement of an existing lattice-structure subtransmission line with the proposed TSP transmission line. Proposed structure number 53 is prominent in the center of the simulation; it would be 95 feet tall compared with the existing structure at that location, which is 69 feet tall.

Although the new TSP-style Project structures would be noticeably taller than the existing lattice structures they would replace, their height would not substantially alter the overall visibility of the Project in relation to the landscape backdrop. Given the unobstructed sightlines, travelers on Gerkin Road and adjacent residents would be afforded extended viewing durations of the structures, which would generally be consistent with the form and line of the existing, though much smaller, wood pole line. The new steel monopoles would somewhat reduce the structural complexity and industrial character associated with the utility corridor, particularly at the road crossing illustrated in Figure 3.2-2a (KOP 1-2 Gerkin Road, Existing View). While the replacement poles would be lighter in color, and those in the foreground would appear somewhat more reflective than the existing lattice structures during certain times of the day and seasonal variation in sunlight intensity, over time the dulled galvanized finish typically weathers to a darker gray that would more closely match the existing transmission structures.

The new, taller structures would appear more visually prominent and would exhibit a low to moderate structural form contrast, a moderate degree of structural line and texture contrast, and a low degree of color contrast. However, the extent of structural skylining would be similar to that of the existing structures. In the context of the existing towers and lines, the new foreground structural landscape would exhibit low to moderate visual contrast and would appear co-dominant relative to the scale of the existing landscape features. The new structures would not attract the attention of the casual observer given the established structural context, and there would be minimal (low) change in the extent of view blockage of higher value landscape features (background sky or ridgelines).

Impact Conclusion. The overall level of visual change at this location would be low to moderate. In the context of the existing landscape's moderate to high visual sensitivity, the resulting visual effect would be less than significant, and no mitigation is required.

KOP 1-3 – Southbound US 395 South of Big Pine Creek Road Looking South

LESS THAN SIGNIFICANT. Figure 3.2-3a (KOP 1-3 Southbound US 395, Existing View) presents the existing view to the south from US 395, south of the northern crossing of Big Pine Canal. The view encompasses a portion of Segment 1 within the existing utility corridor that parallels the west side of US 395. Figure 3.2-3b (KOP 1-3 Southbound US 395, Visual Simulation) presents a visual simulation that illustrates the replace-

ment of an existing lattice-structure subtransmission line with a new TSP transmission line. Proposed structures numbered 69 through 72 are shown and would be from 90 to 100 feet tall (compared with existing structures about 70 feet tall).

Although the Proposed Project structures would be noticeably taller (by approximately 30 to 40 percent) than the existing lattice structures they would replace, their height would not substantially alter the overall visibility of the Project in relation to the landscape backdrop. Also, the new steel monopoles would somewhat reduce the structural complexity and industrial character associated with the existing lattice structures but would exhibit stronger vertical forms and lines. The resulting form and line contrast would be moderate.

While initially lighter in color and somewhat more reflective than the lattice structures, the replacement poles in the immediate foreground could introduce a weak to moderate level of contrast when viewed against the darker backdrop terrain, depending on time of day and seasonal variation in sunlight intensity. This would be a temporary condition that, with the effect of time, would weather to a dull gray, thereby lessening contrast with the backdrop. As a result, color and texture contrast would be moderate.

The replacement structures would appear co-dominant relative to the scale of the existing landscape features, but they would not attract the attention of the casual observer given the established structural context. Also, there would be minimal (low) change in the extent of view blockage of higher value landscape features (background sky or ridgelines).

Impact Conclusion. The overall level of visual change would be low to moderate. In the context of the existing landscape's moderate to high visual sensitivity, the resulting visual effect would be less than significant, and no mitigation is required.

KOP 1-4 – Baker Creek Campground, Big Pine

LESS THAN SIGNIFICANT. Figure 3.2-4a (KOP 1-4 Baker Creek Cpgd, Existing View) presents the existing view to the east from within Baker Creek Campground in Big Pine. The view encompasses a portion of Segment 1 within the existing utility corridor that passes immediately adjacent and to the east of the campground. Figure 3.2-4b (KOP 1-4 Baker Creek Cpgd, Visual Simulation) presents a visual simulation that illustrates the replacement of the existing lattice subtransmission line structures with new TSPs. The replacement monopole visible in Figure 3.2-4b (KOP 1-4 Baker Creek Cpgd, Visual Simulation) would be more than 40 percent taller than the existing lattice structure that has been removed in the simulation. Due to the increased height of the replacement monopole, the next existing lattice structure (not visible in this view but located to the left of this frame of view) would be removed and not replaced.

As viewed in the simulation, the new monopole appears slightly more reflective than the existing lattice structure, and the reflectivity would vary depending on time of day and season. When viewed against the light-colored mountain and sky backdrop, the new TSP would not introduce a significant increase in level of contrast compared to the existing lattice structure, and because of its narrower profile, the replacement pole would not increase the overall visibility of the Project in the landscape. The Project thus represents an incremental effect that would not significantly alter the existing landscape character at this location.

The new, taller structures would appear more visually prominent and would exhibit moderate structural form, line, and texture contrast, as well as a low degree of color contrast. The extent of structural skylining would be like that of the existing structures, and in the context of the existing lattice structures and lines, the new foreground structural landscape would exhibit low to moderate visual contrast, appearing co-dominant relative to the scale of the existing landscape features. The new TSPs would not attract the attention of the casual observer given the established structural context and there would be minimal (low) change in the extent of view blockage of higher value landscape features (background sky or mountains).

Impact Conclusion. The overall level of visual change would be low to moderate. In the context of the existing landscape's moderate to high visual sensitivity, the resulting visual effect would be less than significant, and no mitigation is required.

KOP 1-5 – Big Pine Dump Road/US 395 Near Crater Mountain, Looking Southwest

LESS THAN SIGNIFICANT. Figure 3.2-5a (KOP 1-5 Big Pine Dump Road, Existing View) presents the existing view to the southwest from Big Pine Dump Road/US 395 near Crater Mountain. The view encompasses a portion of Segment 1 within the existing utility corridor that parallels the west side of US 395. Figure 3.2-5b (KOP 1-5 Big Pine Dump Road, Visual Simulation) presents a visual simulation that illustrates the replacement of an existing lattice-structure subtransmission line with a new TSP transmission line.

Although the new poles would be substantially taller than the existing lattice structures (nearly twice as tall), due to distance from the KOP and backdrop conditions, the height difference would not substantially alter the overall visibility of the Project in the landscape. Also, the narrow profile of the replacement poles would be similar in form and line to the existing wood utility poles visible in the foreground.

Structure Finish. As shown in Figure 3.2-5b (KOP 1-5 Big Pine Dump Road, Visual Simulation), the galvanized steel replacement poles visible farther from the KOP would exhibit minimal contrast with the backdrop and would be barely perceptible beyond approximately 0.75 mile. However, the BLM requested that SCE prepare a simulation using the Corten finish[1] on BLM lands, as illustrated in Figure 3.2-5c (KOP 1-5 Big Pine Dump Road, Corten Steel Simulation) presents a simulation using the Corten finish on BLM lands. As shown in Figure 3.2-5c (KOP 1-5 Big Pine Dump Road, Corten Steel Simulation), the replacement of existing lattice structures with new Corten steel monopoles would introduce a moderate level of visual contrast in relation to the landscape backdrop. When seen in the context of existing wood utility poles, the Corten steel monopoles would not substantially alter the existing landscape character at this location. A comparison of the simulations in Figures 3.2-5b (KOP 1-5 Big Pine Dump Road, Visual Simulation) and 3.2-5c (KOP 1-5 Big Pine Dump Road, Corten Steel Simulation) shows that employing a dull, gray, galvanized surface would result in an incremental reduction in visual contrast of the Project where it is seen against the lighter mountain or sky backdrop. Therefore, the galvanized steel (as proposed by the Applicant) is recommended over the Corten steel. Mitigation to require Corten steel is not recommended.

Impact Conclusion. Using either structure finish (i.e., galvanized or Corten steel), the resulting visual contrast would be low, and the new poles would appear co-dominant relative to the scale of the other structural features in the existing landscape. View blockage of higher value landscape features (background slopes) would also be low. The overall level of visual change would be low to moderate. In the context of the existing landscape's moderate to high visual sensitivity, the resulting visual effect would be less than significant, and no mitigation is required.

KOP 1-7 – Manzanar Historic Entry

LESS THAN SIGNIFICANT. Figure 3.2-6a (KOP 1-7 Manzanar, Existing View) presents the existing view to the east from the Manzanar Historic Entry. The view encompasses the point of entry in the foreground, back-dropped by the imposing Inyo Mountains, which help to define the eastern boundary of the Owens River Valley. The existing utility corridor (with its vertical structures) where the Proposed Project would be located is faintly discernible along the valley floor, slightly less than 1 mile to the east of the Historic Entry.

Figure 3.2-6b (KOP 1-7 Manzanar, Galvanized Simulation) presents a visual simulation that illustrates the replacement of the existing lattice subtransmission line structures, with new TSPs. In the area directly east of the Manzanar Historic Entry, the Applicant proposes removal of 9 existing structures, replacing them with only 5 structures. As a result, the replacement monopoles would be visibly taller than the existing lattice structures, and the spacing between the replacement poles would be greater than the spacing

[1] Corten finish allows steel to oxidize, resulting in a dark brown color similar to wood.

between the existing lattice structures. The height of the new poles would not substantially change the overall visibility of the Project in relation to the landscape backdrop.

Although the replacement poles would appear lighter in color and would be somewhat more reflective when compared with the lattice structures (depending on time of day and season), over time the new galvanized finish would weather resulting in less contrast with the backdrop and a closer match to the existing transmission structures in the landscape. Due to the distance from the Historic Entry (approximately 0.9 mile), and when viewed against the mottled landscape backdrop, the introduction of the new TSPs would result in a low (color and texture) to moderate (form and line) increase in the level of visual contrast within the landscape and would not substantially alter the existing landscape character at this location.

The new structures would appear co-dominant relative to the scale of the existing landscape features and structures. Also, the new structures would not attract the attention of the casual observer given the established structural context, and there would be minimal (low) change in the extent of view blockage of higher value landscape features (alluvial fans or mountains).

Structure Finish. Figure 3.2-6c presents a visual simulation of the use of Corten steel poles, prepared in response to a request from the BLM. As shown in Figure 3.2-6c (KOP 1-7 Manzanar, Corten Steel Simulation), the darker color of the Corten steel poles would contrast more strongly with the lighter background terrain, thereby increasing overall visibility and visual contrast. Although the Corten steel monopoles would not substantially alter the existing landscape character at this location, it is clear by comparing the simulations in Figures 3.2-6b (KOP 1-7 Manzanar, Galvanized Simulation) and 3.2-6C (KOP 1-7 Manzanar, Corten Steel Simulation) that the proposed dull, gray, galvanized monopoles would be less visually prominent than the Corten steel structures. Therefore, Corten steel monopoles are not recommended at this location.

Reduced Structure Height. Figure 3.2-6d (KOP 1-7 Manzanar, Shorter Poles Simulation) presents a visual simulation of the use of shorter, gray, galvanized monopoles. However, any visual benefit achieved by reducing structure height is lessened by the slightly greater visual prominence resulting from the visibility of more numerous shorter poles. Therefore, the shorter poles are not recommended. Similarly, Figure 3.2-6e (KOP 1-7 Manzanar, Shorter Corten Poles Visual Simulation) presents a visual simulation of the use of shorter, Corten steel monopoles. Again, the visual benefit achieved by reducing structure height is lessened by the greater visual prominence resulting from more numerous shorter poles, which is further exacerbated by the greater visibility and visual contrast resulting from the darker, Corten structures viewed against the lighter color of the background alluvial fans. For these reasons, the use of shorter, Corten steel monopoles is not recommended.

Impact Conclusion. The overall level of visual change would be low to moderate. In the context of the existing landscape's moderate to high visual sensitivity, the resulting visual effect of the Proposed Project would be less than significant, and no mitigation (including Corten finish or short poles) is required.

KOP 1-10 – US 395 North of Lone Pine Looking Southeast

LESS THAN SIGNIFICANT. Figure 3.2-7a (KOP 1-10 US 395 Lone Pine, Existing View) presents the existing view to the southeast from US 395, approximately 3 miles north of Lone Pine. The view encompasses a portion of Segment 1 within the existing utility corridor that converges on, and then parallels, the east side of US 395. Figure 3.2-7b (KOP 1-10 US 395 Lone Pine, Visual Simulation) presents a visual simulation that illustrates the replacement of an existing lattice-structure subtransmission line with a new TSP transmission line.

The Proposed Project replacement poles would range from 30 to 50 percent taller than the existing lattice structures along this portion of the route. However, their height would not substantially alter the overall visibility of the Project in relation to the landscape backdrop seen from this location. The introduction of three new, multi-pole, dead-end structures in the vicinity of the Project's span of the highway in the

foreground would introduce a moderate degree of structural complexity like the existing array of lattice towers seen by motorists from this location. The resulting form and line contrasts would be moderate.

While lighter in color and somewhat more reflective than the existing lattice structures to be replaced, this would be a temporary condition that, with the effect of weathering over time, would cause the poles to weather to a dull gray, thereby lessening contrast with the backdrop. As a result, the color and texture contrasts introduced with the replacement poles would be moderate when viewed against the darker and more textured backdrop terrain, depending on time of day and seasonal variation in sunlight intensity.

The replacement structures would appear co-dominant relative to the scale of the existing utility structures and landscape features, and they would not attract the attention of the casual observer given the established structural context. Also, there would be minimal (low) changes in the extent of view blockage of higher value landscape features (background sky, valley floor, or mountains).

Impact Conclusion. The overall level of visual change would be low to moderate and would not substantially alter the existing landscape character at this location. In the context of the existing landscape's moderate to high visual sensitivity, the resulting visual effect would be less than significant, and no mitigation is required.

KOP 1-11 – US 395 Near Owens Lake

LESS THAN SIGNIFICANT. Figure 3.2-8a (KOP 1-11 US 395 Owens Lake, Existing View) presents the existing view to the north from northbound US 395 near Owens Lake. The view encompasses a portion of Segment 1 within the existing larger utility corridor that converges on, and then spans, US 395. Figure 3.2-8b (KOP 1-11 US 395 Owens Lake, Visual Simulation) presents a visual simulation of the proposed transmission line changes that illustrates the replacement of the existing lattice-structures with TSPs.

The new Project replacement poles would range from approximately 30 to 60 percent taller than the existing lattice structures along this portion of the route. However, the height difference would not be particularly noticeable to travelers on the highway. Also, the taller replacement structures would allow for an increase in the span distances of the conductors resulting in the permanent removal of several existing lattice structures in this area. The replacement poles would be similar in form, line, color, and texture to the existing poles supporting the adjacent power line. Thus, the resulting form and line contrast would be low to moderate.

While lighter in color and somewhat more reflective than the existing lattice structures to be replaced, this would be a temporary condition that, with the effect of weathering over time, would cause the poles to weather to a dull gray, thereby lessening contrast with the backdrop. As a result, the color and texture contrasts introduced with the replacement poles would be low when compared to the existing monopoles of the adjacent transmission line and moderate when viewed against the light tans and blues of the background terrain and sky, respectively.

The replacement structures would appear co-dominant relative to the scale of the existing utility structures and landscape features, but they would not attract the attention of the casual observer given the established structural context. Also, there would be minimal (low) changes in the extent of view blockage of higher value landscape features (background sky and landforms/vegetation).

Impact Conclusion. The overall level of visual change would be low to moderate and would not substantially alter the existing landscape character at this location. In the context of the existing landscape's moderate to high visual sensitivity, the resulting visual effect would be less than significant, and no mitigation is required.

KOP 1-12a – Southbound US 395 South of Lone Pine Looking South

LESS THAN SIGNIFICANT. Figure 3.2-9a (KOP 1-12a US 395 South of Lone Pine, Existing View) presents the existing view to the south from southbound US 395, south of Lone Pine and approximately 0.4 mile north

of Cottonwood Road. The view encompasses a portion of Segment 1 within the existing utility corridor that converges on, and then parallels, the west side of US 395. Figure 3.2-9b (KOP 1-12a US 395 South of Lone Pine, Galvanized Simulation) presents a visual simulation of the proposed transmission line changes that illustrate the replacement of the existing lattice structures with TSPs.

The Proposed Project replacement poles would range from approximately 20 to 70 percent taller than the existing lattice structures along this portion of the route. However, their height would not substantially alter the overall visibility of the Project in relation to the landscape backdrop seen from this location. The increased height of the TSPs would also result in a reduction in the number of visible structures (due to increased span distances), including permanent removal of existing wood interset poles. Also, the new TSPs would somewhat reduce the structural complexity and industrial character associated with the existing lattice structures but would exhibit stronger vertical forms and lines. The resulting form and line contrast would be moderate.

While lighter in color and somewhat more reflective than the lattice structures, the replacement poles in the immediate foreground could introduce a weak to moderate level of contrast when viewed against the darker backdrop terrain, depending on time of day and seasonal variation in sunlight intensity. This would be a temporary condition, however, because the poles would weather over time to a dull gray, thereby lessening contrast with the backdrop. As a result, color and texture contrast would be moderate.

Structure Finish. Figure 3.2-9c (KOP 1-12a US 395 South of Lone Pine, Corten Simulation) presents a visual simulation of the use of Corten steel poles, requested by the BLM. As shown in Figure 3.2-9c (KOP 1-12a US 395 South of Lone Pine, Corten Simulation), the darker color of the Corten steel poles would contrast more with the lighter background terrain, thereby increasing overall Project visibility and visual contrast. Although the Corten steel monopoles would not substantially alter the existing landscape character at this location, it is clear by comparing the simulations in Figures 3.2-9b (KOP 1-12a US 395 South of Lone Pine, Galvanized Simulation) and 3.2-9C (KOP 1-12a US 395 South of Lone Pine, Corten Simulation) that the proposed dull, gray, galvanized monopoles would be less visually prominent than the Corten steel structures. Therefore, the Corten steel monopoles are not recommended.

Impact Conclusion. The replacement structures would appear co-dominant relative to the scale of the existing utility structures and landscape features, but they would not attract the attention of the casual observer given the established structural context. Also, there would be minimal (low) change in the extent of view blockage of higher value landscape features (background landforms, vegetation, and sky). The overall level of visual change would be low to moderate and would not substantially alter the existing landscape character at this location. In the context of the existing landscape's moderate to high visual sensitivity, the resulting visual effect would be less than significant, and no mitigation is required.

KOP 1-14 – SR 190 Near Olancha

LESS THAN SIGNIFICANT. Figure 3.2-10a (KOP 1-14 SR 190 Near Olancha, Existing View) presents the existing view to the southwest from SR 190, approximately 0.8-mile northeast of Olancha. The view encompasses a portion of Segment 1 within the existing utility corridor that spans SR 190. Figure 3.2-10b (KOP 1-14 SR 190 Near Olancha, Galvanized Simulation) presents a visual simulation that illustrates the replacement of the existing lattice subtransmission line structures with new TSPs.

The replacement monopole visible in Figure 3.2-10b (KOP 1-14 SR 190 Near Olancha, Galvanized Simulation) would be about 35 percent taller than the existing lattice structure that has been removed in the simulation. Due to the increased height of the replacement monopole, the next existing lattice structure (not visible in this view but located to the right of this frame of view) would be removed and not replaced. As viewed in the simulation, the new structure appears slightly more reflective than the existing lattice structure, and the reflectivity would vary depending on time of day and season.

When viewed against the light-colored mountain and sky backdrop, the new structure would not introduce a significant increase in level of contrast compared to the existing lattice structure, and because of its narrower profile, the replacement pole would not increase the overall visibility of the Project in the landscape. The Project thus represents an incremental effect that would not significantly alter the existing landscape character at this location.

The new, taller structures would appear more visually prominent and would exhibit moderate structural form, line, and texture contrast, which would be somewhat offset by the structural consistency with the adjacent wood-pole utility line and the slight reduction in industrial character compared to the more structurally complex lattice towers. Color contrast would be low relative to the lattice structure being replaced. The extent of structural skylining would be slightly greater compared to that of the existing structures. In the context of the existing towers and lines, the new foreground structural landscape would exhibit low to moderate visual contrast, appearing co-dominant relative to the scale of the existing utility structures and landscape features. The new structures would not attract the attention of the casual observer given the established structural context, and there would be minimal (low) change in the extent of view blockage of higher value landscape features (background sky, mountains, or alluvial fans).

Impact Conclusion. The overall level of visual change would be low to moderate. In the context of the existing landscape's moderate to high visual sensitivity, the resulting visual effect would be less than significant, and no mitigation is required.

KOP 1-14.1 – South Haiwee Road at US 395 Looking East

LESS THAN SIGNIFICANT. Figure 3.2-11a (KOP 1-14.1 S. Haiwee Road at US 395, Existing View) presents the existing view to the east from the intersection of South Haiwee Road and US 395. The view encompasses a portion of South Haiwee Road (with adjacent wood-pole utility line), the southern end of South Haiwee Reservoir, and the existing electric transmission corridor passing in front (to the west) of the reservoir, backdropped by the rugged, western foothills of the Coso Range. The existing subtransmission line with weathered-gray lattice structures is barely discernible.

Figure 3.2-11b (KOP 1-14.1 S. Haiwee Road at US 395, Galvanized Simulation) presents a visual simulation that illustrates the replacement of the existing lattice subtransmission line structures with new TSPs. While the replacement monopoles would be visibly taller than the existing lattice structures, the height of the new poles would not substantially change the overall visibility of the Project in relation to the landscape backdrop. However, the solid poles of the TSPs would be slightly more visible due to the absence of the more "transparent" character typical of lattice structures when viewed at distance.

Although the replacement poles would appear lighter in color and would be somewhat more reflective when compared with the lattice structures (depending on time of day and season), over time the new galvanized finish would weather, resulting in less contrast with the backdrop and a closer match to the existing transmission structures in the landscape. Also, the monopole design of the Proposed Project would be consistent with the wood monopoles of the nearby utility line along South Haiwee Road. Due to the distance from KOP 1-14.1 (approximately 0.8 mile), and when viewed against the mottled landscape backdrop, the introduction of the new Project TSPs would result in low form, line, color, and texture contrasts, which would not substantially alter the existing landscape character at this location.

The new structures would appear subordinate relative to the scale of the existing landscape features and foreground wood utility poles. Also, the new structures would not attract the attention of the casual observer given the established structural context, viewing distance, and low visibility. Also, there would be minimal (low) change in the extent of view blockage of higher value landscape features (lake or background slopes).

Impact Conclusion. The overall level of visual change would be low and in the context of the existing landscape's moderate to high visual sensitivity, the resulting visual effect would be less than significant, and no mitigation is required.

KOP 1-16 – Northbound US 395 North of Red Hill Cinder Cone Looking North

LESS THAN SIGNIFICANT. Figure 3.2-12a (KOP 1-16 US 395 North of Red Hill, Existing View) presents the existing view to the north from northbound US 395, approximately 1.5 miles north of Red Hill Cinder Cone. The view encompasses a portion of Segment 1 within the existing utility corridor that parallels the east side of US 395, north of Red Hill Cinder Cone. Figure 3.2-12b (KOP 1-16 US 395 North of Red Hill, Galvanized Simulation) presents a visual simulation that illustrates the replacement of an existing lattice-structure subtransmission line with a new TSP transmission line.

Although the new poles would be taller than the existing lattice structures, due to distance from the viewpoint and backdrop conditions, the height difference would not substantially alter the overall visibility of the Project in the landscape. And while the narrow profile of the replacement poles may obstruct less of the background landscape than the existing lattice structures, the solid structure of the steel monopoles and increased reflectivity during certain times of the day and season causes them to be more visually prominent compared to the more "transparent" design of the existing lattice structures. However, as the steel poles weather over time, the dull galvanized finish would more closely match the color of the existing transmission structures in the landscape. Also, as shown in Figure 3.2-12b (KOP 1-16 US 395 North of Red Hill, Galvanized Simulation), the galvanized steel replacement poles visible farther from the KOP would exhibit minimal contrast with the backdrop and would become barely perceptible with increasing distance.

Structure Finish. A Corten-type finish is shown in the simulation presented as Figure 3.2-12c (KOP 1-16 US 395 North of Red Hill, Corten Simulation). As shown in the simulation, the Corten steel monopoles would be darker in color and more highly visible against the lighter color of the background vegetation and landforms. As can be seen when comparing the simulations in Figures 3.2-12b (KOP 1-16 US 395 North of Red Hill, Galvanized Simulation) and 3.2-12C (KOP 1-16 US 395 North of Red Hill, Corten Simulation), the use of a dull, gray, galvanized surface would result in an incremental reduction in visual contrast and visibility of the Project where it is seen against the lighter backdrop. Therefore, the galvanized steel is recommended over the Corten steel monopoles.

Impact Conclusion. Using either finish approach, the resulting visual contrast would be low to moderate, and the new poles would appear subordinate to co-dominant relative to the scale of the other structural features in the existing landscape. View blockage of higher value landscape features (valley floor and background slopes) would also be low to moderate. The overall level of visual change would be low to moderate. In the context of the existing landscape's moderate to high visual sensitivity, the resulting visual effect would be less than significant, and no mitigation is required.

KOP 1-17 – Fossil Falls Trail

LESS THAN SIGNIFICANT. Figure 3.2-13a (KOP 1-17 Fossil Falls Trail, Existing View) presents the existing view to the southwest from Fossil Falls Trail. The view encompasses a portion of Segment 1 within the existing utility corridor that passes approximately 0.3 mile west of Fossil Falls. Figure 3.2-13b (KOP 1-17 Fossil Falls Trail, Visual Simulation) presents a visual simulation that illustrates the replacement of an existing lattice-structure subtransmission line with a new TSP transmission line.

Although the new poles would be from 20 to 30 percent taller than the existing lattice structures, due to distance of the poles from the KOP and backdrop conditions, the height difference would not substantially alter the overall visibility of the Project in the landscape.

The new steel monopoles would somewhat reduce the structural complexity and industrial character associated with the existing lattice structures but would exhibit stronger vertical forms and lines. The

resulting form and line contrast would be moderate. While initially lighter in color and somewhat more reflective than the lattice structures, the replacement poles in the foreground could introduce a weak to moderate level of contrast when viewed against the darker backdrop terrain, depending on time of day and seasonal variation in sunlight intensity. This would be a temporary condition, however, because the poles would weather over time to a dull gray, thereby lessening contrast with the backdrop. As a result, color and texture contrast would be low to moderate.

The replacement poles would appear subordinate to co-dominant relative to the scale of the existing utility structures and landscape features such as the foreground rock formations and background mountains. Also, there would be minimal (low) change in the extent of view blockage of higher value landscape features (background valley floor, alluvial fans, and mountains).

Impact Conclusion. The overall level of visual change would be low to moderate. In the context of the existing landscape's moderate to high visual sensitivity, the resulting visual effect would be less than significant, and no mitigation is required.

KOP 1-17.1 – Red Hill Cinder Cone

LESS THAN SIGNIFICANT. Figure 3.2-14a (KOP 1-17.1 US 395 Near Red Hill, Existing View) presents the existing view to the east from southbound US 395, immediately west of Red Hill. The view encompasses a portion of Segment 1 within the existing utility corridor that passes between Red Hill and US 395. Figure 3.2-14b (KOP 1-17.1 US 395 Near Red Hill, Visual Simulation) presents a visual simulation of the proposed transmission line changes that illustrates the replacement of the existing lattice-structures with TSPs.

The Proposed Project replacement poles would range from 10 percent to nearly 80 percent taller than the existing lattice structures along this portion of the route. The increased structural height, stronger vertical form and line contrast, and absence of the structural "transparency" that is often associated with lattice structures under certain viewing conditions, would result in a moderate increase in structural contrast.

While lighter in color and somewhat more reflective than the lattice structures, the replacement poles in the immediate foreground could introduce a moderate level of color and texture contrast when viewed against the darker backdrop of Red Hill, depending on time of day and seasonal variation in sunlight intensity. This would be a temporary condition, however, because the poles would weather over time to a dull gray, thereby lessening contrast with the backdrop. As a result, visual contrast would be moderate in the short term and low to moderate in the long term.

The replacement structures would appear co-dominant relative to the scale of the existing utility structures and landscape features, but they would not attract the attention of the casual observer given the established structural context of the existing utility corridor. Also, the Project would cause a low degree of view blockage of higher value landscape features (Red Hill, vegetation, and sky from some vantage points).

Structure Finish. Figure 3.2-14c (KOP 1-17.1 US 395 Near Red Hill, Corten Simulation) presents a visual simulation of the use of a Corten steel pole compared to a galvanized steel (gray) pole. As shown in the simulation, the initial brightness of the galvanized poles would contrast more with the darker reddish-rust hue of the background landform than would the darker rust-colored Corten steel poles. Therefore, in specific instances where the poles are backdropped by dark, reddish-rust colored terrain (as shown in Figure 3.2-14c, KOP 1-17.1 US 395 Near Red Hill, Corten Simulation), Corten steel poles could result in less (low) color contrast compared to galvanized (gray) poles. In most other instances with lighter backdrops (valley plain and mountain slope vegetation and soils or sky), the darker color of the Corten steel would result in greater color contrast and visual prominence and would be less preferable to the galvanized steel poles, especially once the galvanized poles have weathered to a dull gray.

It should be noted that in the vicinity of Red Hill Cinder Cone, three proposed structure locations would benefit from a Corten finish: structure numbers 882(a multi-pole dead end structure) and numbers 883

and 884 (both monopoles). The visual benefit results because they would be substantially backdropped by Red Hill on approach from the south (via northbound US 395). Also, travelling south on US 395, two proposed structure locations would benefit from a Corten-type finish: structure numbers 876 and 878, both monopoles. These structures would also be substantially backdropped by Red Hill on approach from the north (southbound US 395). However, all these structures would lack the dark background afforded by Red Hill when viewed from the opposing direction of travel. Further, the remaining structure locations (not referenced above) in the immediate vicinity of Red Hill (structures from #876 to #886) would generally be backdropped by lighter backgrounds consisting of sky, vegetation, and terrain, such that a darker Corten finish would cause increased color contrast and overall visual prominence. This conclusion also applies to KOPs 1-17.2a and 1-17.2b as well.

Another visual issue that is highlighted in Figure 3.2-14c (KOP 1-17.1 US 395 Near Red Hill, Corten Simulation) is the discordant visual effect that occurs with the transition from galvanized gray poles to rust-colored Corten poles. This is an example of insufficient visual benefit derived from a very short "mitigation" segment of a Corten finish to offset the increased color contrast and visual prominence that occurs with these transitions. Therefore, a Corten finish is not recommended in the vicinity of Red Hill due to the limited benefit, and such substitutions (e.g., Corten finish for galvanized gray) would be more appropriately limited to longer ROW stretches where the darker rust-colored Corten steel poles (or other color options) would effectively blend with a dark or rust-colored terrain background (see the discussions for KOPs 1-19 and 1-20). This conclusion also applies to KOPs 1-17.2a and 1-17.2b as well.

Impact Conclusion. The resulting overall level of visual change would be low to moderate and would not substantially alter the existing landscape character at this location. In the context of the existing landscape's moderate to high visual sensitivity, the resulting visual effect would be less than significant, and no mitigation (including structure finish options evaluated) is required.

KOP 1-17.2a – Northbound US 395 at Cinder Road Looking North-Northeast

LESS THAN SIGNIFICANT. Figure 3.2-15a (KOP 1-17.2a US 395-Cinder Road NNE, Existing View) presents the existing view to the north-northeast from the intersection of Cinder Road and northbound US 395, immediately southeast of Red Hill. The view encompasses a portion of Segment 1 within the existing utility corridor that passes between Red Hill and US 395. Figure 3.2-15b (KOP 1-17.2a US 395-Cinder Road NNE, Visual Simulation) presents a visual simulation of the proposed transmission line changes that illustrates the replacement of the existing lattice structures with TSPs.

The Proposed Project replacement poles would be noticeably taller (10 to 30 percent taller) than the existing lattice structures along this portion of the route. The increased structural height and stronger vertical form and line contrast would result in a moderate increase in structural contrast.

The replacement poles would be lighter in color and somewhat more reflective than the lattice structures being replaced and would result in the introduction of a moderate level of color and texture contrast when viewed against the darker backdrop of Red Hill (depending on time-of-day and seasonal variation in sunlight intensity). This would be a temporary condition, however, because the poles would weather over time to a dull gray, thereby lessening color, form, and line contrast with the backdrop. As a result, visual contrast would be moderate in the short term and low to moderate in the long term.

The replacement structures would appear co-dominant relative to the scale of the existing utility structures and landscape features, but they would not attract the attention of the casual observer given the established structural context of the existing utility corridor. Also, the Project would cause a low degree of view blockage of higher value landscape features (Red Hill, vegetation, and sky from some vantage points).

Structure Finish. Figure 3.2-15c (KOP 1-17.2a US 395-Cinder Road NNE, Corten Simulation) presents a visual simulation of the use of Corten steel poles. As shown in the simulation, the darker, rust-colored

Corten steel poles would contrast less with the reddish colors of the Red Hill terrain compared to the proposed galvanized (gray) treatment but would contrast more with the lighter background sky where the structures extend above the horizon. Therefore, in the specific instance where the poles are backdropped by dark, reddish-rust colored terrain (as shown in Figure 3.2-15c, KOP 1-17.2a US 395-Cinder Road NNE, Corten Simulation), Corten steel poles could result in less (low) color contrast compared to the gray galvanized gray poles. However, this preference only applies when there is a suitable dark, rust-colored backdrop. In most other instances with lighter backdrops (valley plain and mountain slope vegetation and soils, or sky), the darker color of the Corten steel would result in greater color contrast and visual prominence and would be less preferable to the galvanized gray poles, especially once the galvanized poles weather to a dulled medium gray.

Impact Conclusion. The resulting overall level of visual change would be low to moderate and would not substantially alter the existing landscape character at this location. In the context of the existing landscape's moderate to high visual sensitivity, the resulting visual effect would be less than significant, and no mitigation (including structure finish options) is required.

KOP 1-17.2b – Cinder Road at US 395 Looking East

LESS THAN SIGNIFICANT. Figure 3.2-16a (KOP 1-17.2b US 395-Cinder Road-East, Existing View) presents the existing view to the east from the intersection of Cinder Road and northbound US 395, immediately southeast of Red Hill. The view encompasses a portion of Segment 1 within the existing utility corridor that passes between Red Hill and US 395 and spans Cinder Road. Figure 3.2-16b (KOP 1-17.2b US 395-Cinder Road-East, Visual Simulation) presents a visual simulation of the proposed transmission line changes that illustrates the replacement of the existing lattice structures with TSPs.

The Proposed Project replacement poles would appear taller than the existing lattice structures along this portion of the route; they are 15 to 20 percent taller. The increased structural height and stronger vertical form and line contrast would result in a moderate increase in structural contrast. However, in the frame of view presented in Figures 3.2-16a (KOP 1-17.2b US 395-Cinder Road-East, Existing View) and 3.2-16b (KOP 1-17.2b US 395-Cinder Road-East, Visual Simulation), the single lattice structure adjacent to Cinder Road exhibits greater structural complexity and industrial character than the replacement monopole. Therefore, the monopole's stronger form and line contrast is partially offset by its lesser industrial character. In this case, the resulting structural contrast would be reduced from moderate to low to moderate.

The replacement poles would initially be lighter in color and somewhat more reflective than the lattice structures being replaced and would result in the introduction of a low to moderate level of color and texture contrast when viewed against the lighter backdrop of distant hills and sky, depending on time of day and seasonal variation in sunlight intensity. Over time, the steel poles would weather to a dull gray, thereby lessening color, form, and line contrast with the surrounding and backdrop terrain. As a result, visual contrast would be low to moderate.

The replacement structures would appear co-dominant relative to the scale of the existing utility structures and landscape features, but they would not attract the attention of the casual observer given the established structural context of the existing utility corridor. Also, the Project would cause a low degree of view blockage of higher value landscape features (Volcano Peak, foothills, vegetation, and sky from some vantage points).

Structure Finish. Figure 3.2-16c (KOP 1-17.2b US 395-Cinder Road-East, Corten Simulation) presents a visual simulation of the use of Corten steel poles. As shown in the simulation, the darker, rust-colored Corten steel poles would contrast more with the lighter background hill terrain and sky (where the structures extend above the horizon) compared to the proposed galvanized gray treatment. Therefore, in the specific instance where the poles are backdropped by light-colored vegetation, hills, and sky (as shown in Figure 3.2-16c, KOP 1-17.2b US 395-Cinder Road-East, Corten Simulation), Corten steel poles would

likely result in greater color contrast and would be less preferable to the galvanized gray poles, especially once the galvanized poles weather to a dulled medium gray.

Impact Conclusion. The resulting overall level of visual change would be low to moderate and would not substantially alter the existing landscape character at this location. In the context of the existing landscape's moderate to high visual sensitivity, the resulting visual effect would be less than significant, and no mitigation (including structure finish options) is required.

KOP 1-18 – Northbound US 395 at Little Lake Looking Northeast

LESS THAN SIGNIFICANT. Figure 3.2-17a (KOP 1-18 US 395 at Little Lake, Existing View) presents the existing view to the northeast from northbound US 395 at Little Lake. The view encompasses a portion of Segment 1 within the existing utility corridor that spans the southern end of Little Lake and passes adjacent to US 395. Figure 3.2-17b (KOP 1-18 US 395 at Little Lake, Visual Simulation) presents a visual simulation that illustrates the replacement of the existing lattice-structure subtransmission line with the proposed TSP transmission line.

The Proposed Project replacement poles would range from 30 to 80 percent taller than the existing lattice structures along this portion of the route and the poles are shifted somewhat to the north and east. The displacement and increased height of the new foreground structures results in an incremental increase in visibility of the Project. The light-gray galvanized finish and smooth texture of the replacement poles would also introduce a moderate increase in color contrast with the surrounding landscape and would exacerbate the structural vertical form and line contrast. The resulting visual contrast would be moderate.

The new galvanized gray poles would be lighter in color and somewhat more visually contrasting and reflective compared to the existing lattice structures to be replaced. However, this would be a temporary condition because the poles would weather over time to a dull gray, thereby lessening color and form and line contrast with the backdrop, primarily the darker escarpment. As a result, the color and texture contrasts introduced with the replacement poles would be moderate when viewed against the darker escarpment and low to moderate when viewed against the lighter sky, valley plain, and distant mountains.

The replacement structures would appear co-dominant relative to the scale of the existing utility structures and landscape features, but they are not expected to attract the attention of the casual observer given the established structural context of the existing utility corridor. Also, there would be a moderate increase in the extent of view blockage of higher value landscape features (background sky, valley plain, escarpment, and mountains) due to the increased height of the structures and the solid mass of the steel poles, which do not exhibit the "transparent" character of lattice structures at distance.

Structure Finish. Figure 3.2-17c (KOP 1-18 US 395 at Little Lake, Corten Simulation) presents a visual simulation of the use of Corten steel poles. As shown in the simulation, compared to the proposed galvanized gray treatment, the darker, rust-colored Corten steel poles would appear less visually contrasting with the darker escarpment but more visually contrasting with the lighter background mountains and sky (where the structures extend above the horizon). As a result, the Corten steel poles would be more visually prominent in the landscape and would be less preferable to the galvanized gray poles, especially once the gray galvanized poles weather to a dulled medium gray.

Figure 3.2-17d (KOP 1-18 US 395 at Little Lake, Dark Gray Simulation) presents a visual simulation of the use of steel poles that have received a very dark gray galvanizing treatment as requested by the BLM. As shown in the simulation, compared to the proposed light gray galvanized treatment, the dark gray steel poles would appear less visually contrasting with the darker escarpment but more visually contrasting with the lighter background mountains and sky (where the structures extend above the horizon). As a result, the dark gray steel poles would be more visually prominent in the landscape and would be less preferable to the light gray galvanized poles, especially once the light gray galvanized poles weather to a dulled gray.

Impact Conclusion. The overall level of visual change would be moderate but would not substantially alter the existing landscape character at this location given the structural context established by the existing utility corridor. In the context of the existing landscape's moderate to high visual sensitivity, the resulting visual effect would be less than significant, and no mitigation (including structure finish options) is required.

KOP 1-19 – Northbound US 395 at The Narrows Looking North

LESS THAN SIGNIFICANT WITH MITIGATION. Figure 3.2-18a (KOP 1-19 US 395 at The Narrows, Existing View) presents the existing view to the north from northbound US 395, approximately 3 miles south of Little Lake. The view encompasses a portion of Segment 1 within the existing utility corridor that parallels the east side of US 395 through The Narrows. Figure 3.2-18b (KOP 1-19 US 395 at The Narrows, Visual Simulation) presents a visual simulation that illustrates the replacement of the existing lattice-structure subtransmission line with a new TSP transmission line. The new Project replacement poles would be noticeably taller than the existing lattice structures along this portion of the route, and the lighter-gray galvanizing treatment would render the poles somewhat luminous in the foreground, which becomes increasingly subtle with distance from the viewpoint. The increased height and lighter color of the new structures would cause an increase in form, line, color, and texture contrast, all of which would contribute to an increase in visibility of the Project. The resulting visual contrast would be moderate to high. While the new galvanized gray poles would be lighter in color and more visually contrasting and reflective compared to the existing lattice structures to be replaced, this would be a temporary condition because the poles would weather over time to a dull gray, thereby somewhat lessening color and form and line contrast with the backdrop, primarily the darker escarpment.

The replacement structures would appear co-dominant relative to the scale of the existing utility structures and landscape features and may attract the attention of the casual observer despite the established structural context of the existing utility corridor. Also, there would be a moderate increase in the extent of view blockage of higher value landscape features (background lava escarpment) due to the increased height of the new steel poles and their solid mass, which does not exhibit the "transparent" character of lattice structures at distance. The overall level of visual change caused by the Proposed Project within the Narrows would be moderate and would substantially alter the existing landscape character at this location despite the structural context established by the existing utility corridor. This is primarily due to the confined nature of the sightlines and viewing focus on the lava escarpment and, unavoidably, on the Project within The Narrows.

Structure Finish. Figure 3.2-18c (KOP 1-19 US 395 at The Narrows, Corten Simulation) presents a visual simulation of the use of Corten steel poles. As shown in the simulation, compared to the proposed light gray galvanizing treatment, the darker, rust-colored Corten steel poles would appear less visually contrasting and would blend better with the darker escarpment and surrounding vegetation. As a result, the Corten steel poles would be less visually prominent in the landscape compared to the proposed galvanized gray poles.

Similarly, Figure 3.2-18d (KOP 1-19 US 395 at The Narrows, Dark Gray Simulation) presents a visual simulation of the use of steel poles that have received a very dark gray galvanizing treatment. As shown in the simulation, compared to the proposed lighter gray galvanizing treatment, the dark gray steel poles would also appear less visually contrasting with the darker escarpment. As a result, the dark gray steel poles would be less visually prominent in the landscape compared to the standard galvanized gray poles (Figure 3.2-18b, KOP 1-19 US 395 at The Narrows, Visual Simulation). However, the reddish-rust hue of the Corten finish illustrated in Figure 3.2-18c (KOP 1-19 US 395 at The Narrows, Corten Simulation) appears to be a better match for the established color palette of the existing landscape. Therefore, in this case, as defined in Mitigation Measure AE-3a (Apply Corten finish to select tubular steel poles; full text presented at the end of the discussion of Impact AE-3), the Corten finish is recommended over the dark-gray galvanizing treatment, and it is required for structure numbers 915 through 954 in The Narrows.

Corten finish treatment for structure numbers 955 through 968 would also be effective in reducing color contrast when viewed from northbound US 395, because the background would be dark from that travel/viewing direction. However, color contrast would be increased when viewed from southbound US 395 because the background would be light from that travel/viewing direction. Therefore, structure numbers 955 through 968 are not recommended for surface treatment under Mitigation Measure AE-3a.

Impact Conclusion. In the context of the existing landscape's moderate to high visual sensitivity, the resulting visual effect of the Proposed Project within the Narrows would be significant. Therefore, Mitigation Measure AE-3a (Apply Corten finish to select tubular steel poles) is recommended to ensure that the visual effect of new structure numbers 915 through 954 would be less than significant.

KOP 1-20 – Northbound US 395 at The Narrows (South End) Looking North

LESS THAN SIGNIFICANT WITH MITIGATION. Figure 3.2-19a (KOP 1-20 US 395-The Narrows South, Existing View) presents the existing view to the north from northbound US 395 near the southern end of The Narrows. The view encompasses a portion of Segment 1 within the existing utility corridor that parallels the east side of US 395 through The Narrows. Figure 3.2-19b (KOP 1-20 US 395-The Narrows South, Visual Simulation) presents a visual simulation that illustrates the replacement of the existing lattice-structure subtransmission line with a new TSP transmission line.

The Proposed Project replacement poles would be 20 to 30 percent taller than the existing lattice structures along this portion of the route. In addition, the lighter-gray galvanizing treatment would render the poles somewhat luminous in the foreground, which becomes increasingly subtle with distance from the viewpoint. The increased height and lighter color of the new structures would cause an increase in form, line, color, and texture contrast, all of which would contribute to an increase in visibility of the Project. The resulting visual contrast would be moderate to high. While the new galvanized gray poles would be lighter in color and more visually contrasting and reflective compared to the existing lattice structures to be replaced, this would be a temporary condition because the poles would weather over time to a dull gray, thereby somewhat lessening color and form and line contrast with the backdrop, primarily the darker escarpment.

The replacement structures would appear co-dominant relative to the scale of the existing utility structures and landscape features and may attract the attention of the casual observer despite the established structural context of the existing utility corridor. Also, there would be a moderate increase in the extent of view blockage of higher value landscape features (background lava escarpment) due to the increased height of the structures and the solid mass of the steel poles, which do not exhibit the "transparent" character of lattice structures at distance. The overall level of visual change would be moderate and would substantially alter the existing landscape character at this location despite the structural context established by the existing utility corridor. This is primarily due to the confined nature of the sightlines and viewing focus on the lava escarpment on the Project within The Narrows.

Structure Finish. In order to evaluate the potential benefit of different structure finishes, Figure 3.2-19c (KOP 1-20 US 395-The Narrows South, Corten Simulation) presents a visual simulation of the use of Corten steel poles. As shown in the simulation, compared to the proposed gray galvanizing treatment, the darker, rust-colored Corten steel poles would appear less visually contrasting and would blend better with the darker, escarpment and surrounding vegetation. As a result, the Corten steel poles would be less visually prominent in the landscape compared to the proposed galvanized gray poles.

Another finish option is presented in Figure 3.2-19d (KOP 1-20 US 395-The Narrows South, Dark Grey Simulation), which presents a visual simulation of the use of steel poles that have received a very dark gray galvanizing treatment. As shown in the simulation, compared to the proposed galvanized gray treatment (Figure 3.2-19b; KOP 1-20 US 395-The Narrows South, Visual Simulation), the dark gray steel poles would also appear less visually contrasting with the darker escarpment. As a result, the dark gray steel poles would be less visually prominent in the landscape compared to the galvanized gray poles.

Comparing the finish options, the reddish-rust hue of the Corten finish illustrated in Figure 3.2-19c (KOP 1-20 US 395-The Narrows South, Corten Simulation) appears to be a better match for the established color palette of the existing landscape. Therefore, the Corten finish is recommended in Mitigation Measure AE-3a (Apply Corten finish to select tubular steel poles) for structure numbers 915 through 954 in The Narrows.

Corten treatment for structure numbers 955 through 968 would also be effective in reducing color contrast when viewed from northbound US 395 because the background would be dark from that travel/viewing direction. However, the color contrast would be increased when viewed from southbound US 395 because the background would be light from that travel/viewing direction. Therefore, structure numbers 955 through 968 are not recommended for surface treatment under Mitigation Measure AE-3a (Apply Corten finish to select tubular steel poles).

Impact Conclusion. In the context of the existing landscape's moderate to high visual sensitivity, the resulting visual effect of the Proposed Project within the Narrows would be significant. Mitigation Measure AE-3a (Apply Corten finish to select tubular steel poles) is recommended for structure numbers 915 through 954 in order for the impact to be less than significant.

KOP 1-21 – Patrice Avenue in Inyokern Looking Southeast

LESS THAN SIGNIFICANT. Figure 3.2-20a (KOP 1-21 Patrice Ave. Inyokern, Existing View) presents the existing view to the southeast from Patrice Avenue in Inyokern. The view encompasses a portion of a rural residential area adjacent to the existing utility corridor where the Project would be located. Figure 3.2-20b (KOP 1-21 Patrice Ave. Inyokern, Visual Simulation) presents a visual simulation that illustrates the replacement of an existing lattice-structure subtransmission line with a new TSP transmission line.

Although the new Project structures would be 20 to 35 percent taller than the existing lattice structures they would replace, their height would not substantially alter the overall visibility of the Project in relation to the landscape backdrop. Given the unobstructed sightlines, viewers on Patrice Avenue and at the adjacent residences would be afforded extended viewing durations of the structures, which would generally be consistent with the form and line of the existing, though smaller, wood-pole utility structures and wood-pole, H-frame transmission structures. The proposed steel monopoles would exhibit less structural complexity and industrial character compared to the more structurally complex lattice structures when viewed from nearby. However, the addition of conductor marker balls would cause additional view obstruction.

The proposed replacement poles are lighter in color than the existing structures, and those in the foreground would appear somewhat more reflective than the existing lattice structures depending on time of day and seasonal variation in sunlight intensity. However, over time, the galvanized finish is expected to weather to a dull gray that would more closely match the existing transmission structures.

The new, taller structures would appear more visually prominent and would exhibit low to moderate structural form contrast, a moderate degree of structural line and texture contrast, and a low degree of color contrast. In the context of the existing utility facilities and residential structures, the new foreground structural landscape would exhibit low to moderate visual contrast and would appear co-dominant relative to the scale of the existing utility structures and landscape features. The extent of structural skylining would be like that of the existing structures. The new structures would not attract the attention of the casual observer given the established structural context, and there would be a relatively small (low) increase in the extent of view blockage of higher value landscape features (primarily background sky due to the addition of conductor marker balls).

Impact Conclusion. The overall level of visual change would be low to moderate, and in the context of the existing landscape's moderate to high visual sensitivity, the resulting visual effect would be less than significant, and no mitigation is required.

Mitigation Measure for Impact AE-3

AE-3a **Apply Corten finish to select tubular steel poles.** A Corten (or similar rust-colored) finish shall be applied to Proposed Project structure numbers 915 through 954 (north to south) in The Narrows. At least 60 days prior to the start of construction, SCE shall prepare a Surface Treatment Plan for the identified structures and submit it to the CPUC for review and approval.

Impact AE-5: Create a new source of substantial light or glare that would adversely affect day or nighttime views.

Because Project construction, operations, and maintenance may require a limited amount of night lighting, the Applicant proposes to implement APM AES-8 as described above in Table 3.2-1 (Applicant Proposed Measure – Aesthetics). This APM is considered to be part of the Proposed Project and has been considered in the analysis of Impact AE-5, as discussed in the following paragraphs. Failure to implement APM AES-8 would have the potential to cause significant night lighting impacts, which would necessitate additional mitigation in the form of a required Night Lighting Management Plan.

Construction

LESS THAN SIGNIFICANT. Most construction activities would take place during daylight hours. However, at limited times, some construction activities would require lighting for safety. According to SCE, any required lighting would be limited to an individual work area and would be temporary in nature. While material yards may be lit for staging and security, this lighting would be directed on site and away from potentially sensitive receptors. Further, as stipulated in APM AES-8, *"All night lighting used for construction …shall orient lights downward and be shielded to eliminate off-site light spill at times when the lighting is in use."* Therefore, the Project would not create a new source of substantial light during construction, and the resulting impact would be less than significant under this criterion, and no mitigation is required. However, failure to implement APM AES-8 would have the potential to cause significant night lighting impacts, which would necessitate additional mitigation in the form of a required Night Lighting Management Plan.

Operations and Maintenance

LESS THAN SIGNIFICANT. No new permanent lighting is proposed for the Project. Operations and maintenance activities required for the rebuilt power lines would not change from those currently required for the existing system. Therefore, no operations- or maintenance-related night-lighting impacts would occur.

With respect to the potential for glare impacts to occur from the Proposed Project, SCE has committed to the use of non-specular conductors and galvanized steel poles with a dulled finish to replace the existing components, thus reducing the potential for glare. Additionally, the galvanized poles will weather over time, further reducing the potential for reflectance and glare. Therefore, the long-term glare impacts are expected to be less than significant under this criterion, and no mitigation is required.

3.2.3.4. Segment 2: Inyokern to Kramer Junction

In Segment 2, SCE would remove all of the existing subtransmission structures and conductors and replace them with TSPs, LWS poles, LOS pole H-frames, tubular steel multi-poles, and LWS pole structures and new conductors. SCE would also install overhead groundwire or optical groundwire for system protection.

Impact AE-3: In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings.

Cal City Options

*LESS THAN SIGNIFICANT. T*he Cal City Options are described in Section 2.2.1. It would result in the addition of a second circuit of conductors to an approximately 18.5-mile portion of Segment 2 extending north from the Kramer Substation.

This scenario would appear similar to the existing double-circuit subtransmission line that would be replaced. The southernmost 20 structures in this segment of the Cal City Option (covering approximately 2 miles) would also have an electric distribution underbuild, which would result in an approximately 30-foot increase in structure height for the 20 structures. That would increase the typical structure height range of 77 to 97 feet for the Proposed Project to approximately 107 to 127 feet for the structures with the underbuilt distribution lines.

The existing structural context within which the Cal City Option may be implemented includes multiple wood-pole utility lines close to US-395 for the first 2.5 miles north of Kramer Substation. The existing structural context also includes the existing double-circuit, lattice/TSP sub-transmission line that closely parallels US 395 for the southernmost four miles of the 18.5-mile distance and is to be replaced by the Proposed Project. The remaining 14.5 miles would include a continuation of the double-circuit sub-transmission line to be replaced as well as a noticeably taller lattice structure, a 220 kV double-circuit transmission line that would remain close to and parallel with the Proposed Project and US 395 for about 15 miles, from 20 Mule Team Parkway to the point that it diverges from the US 395 corridor to the east.

Given the visual prominence and industrial character of the existing utility facilities adjacent to US 395, the existing landscape's overall visual sensitivity (based on existing visual quality, viewer exposure, and anticipated viewer concern) would be moderate. The addition of the Cal City Option conductors along the Cal City Option, the Sequoia Option, or the Southern Alignment Adjustment would not be noticeable to the casual observer on US 395 because the double-circuit conductor scenario would be similar to what already exists, which is what is being replaced.

The additional 30-foot height increase associated with the 2-mile long underbuild segment would be noticeable but occurs over a relatively short distance and would appear consistent with the taller transmission line that would also parallel the majority (14.5 miles) of the 18.5-mile segment. Therefore, when considered within the existing structural context, the Cal City Options changes, primarily associated with the implications of the distribution underbuild (increased pole height and structural complexity), would contribute moderate visual contrast and view blockage and would appear co-dominant in views from US-395. The resulting overall visual change would be moderate, and in the context of the existing landscape's moderate visual sensitivity, the resulting visual effect would be less than significant, and no mitigation is required.

Proposed Project – Segment 2

Most of the Project impacts associated with construction or long-term presence of Project components fall into the category of degradation of visual character or quality. Substantial degradation results from higher levels of visual contrast, project dominance, and view blockage. Visual contrast relates to spatial characteristics, visual scale, texture, form, line, and color. Therefore, this criterion will be utilized for making impact conclusions regarding the Proposed Project's effects on existing landscapes and views.

Construction

LESS THAN SIGNIFICANT. Construction of the Proposed Project would cause temporary visual effects due to the presence of equipment, vehicles, materials, and workforce. These effects would occur throughout the

Proposed Project area. Construction would involve the use of cranes, heavy construction equipment, temporary storage and office facilities, and temporary laydown/staging areas.

Construction activities would include site clearing and grading, erection of the structures, conductor stringing and pulling, and site cleanup and restoration. Construction activities would be visible from rural residences in the vicinity of Inyokern; US 395; local roads including Brown Road, Garlock Road, Randsburg-Mojave Road, and Twenty Mule Team Parkway; BLM access roads; and the community of Randsburg. Throughout the construction period, the industrial character of the activities would cause substantial visual contrast and visual change and constitute adverse visual effects when viewed from the general project vicinity, roads in the Proposed Project vicinity, and all the KOPs. However, since construction activities and equipment brought into the Proposed Project area and onto the Proposed Project sites would be temporary, they would result in less than significant aesthetics impacts and no mitigation is required.

Operations and Maintenance

Impact AE-3 considers the permanent impacts associated with the long-term presence of the Proposed Project in the environment. The analysis of operational effects was conducted with respect to the visual change from the existing setting, which includes the existing subtransmission line, as perceived from representative KOPs at sensitive public viewing locations. As previously stated, aesthetics effects associated with Project operation are typically direct effects unless otherwise noted. The following paragraphs present the aesthetics analysis for each of the four representative KOPs selected for Segment 2. Project effects relative to each KOP are illustrated in visual simulations provided at the end of Section 3.2.

KOP 2-1 – Sydnor Avenue at Mercury Street in Inyokern

LESS THAN SIGNIFICANT. Figure 3.2-21a (KOP 2-1 Syndor Ave. Inyokern, Existing View) presents the existing view to the southeast from Sydnor Avenue at Mercury Street in Inyokern. The view encompasses a portion of a rural residential area adjacent to the existing utility corridor where the Project would be located. Figure 3.2-21b (KOP 2-1 Syndor Ave. Inyokern, Visual Simulation) presents a visual simulation that illustrates the replacement of an existing lattice-structure subtransmission line with a new TSP transmission line.

Although the new Project structures would be noticeably taller (ranging from 5 to 30 percent) than the existing lattice structures they would replace, their height would not substantially alter the overall visibility of the Project in relation to the landscape backdrop. While the slim, vertical design of the replacement poles would visually contrast with the complex lattice design of the adjacent structures that would be unaffected by the Proposed Project, the replacement poles would be like the form of the existing vertical forms visible in the landscape including the wood-pole utility line, H-frame transmission line, and foreground fence posts. As a result, the new steel monopoles would somewhat reduce the structural complexity and industrial character associated with the utility corridor.

While the replacement poles are lighter in color, and those in the foreground would appear somewhat more reflective than the existing lattice structures depending on time of day and season, over time, the dulled galvanized finish is expected to weather to a darker gray that would more closely match the existing transmission structures.

The Proposed Project would exhibit moderate structural form and line contrast, and a low degree of color and texture contrast. In the context of the existing utility facilities and residential structures, the new foreground structural landscape would exhibit low to moderate visual contrast and would appear co-dominant relative to the scale of the existing utility structures and landscape features. The extent of structural skylining would be like that of the existing structures. The proposed structures would not attract the attention of the casual observer given the established structural context, and view blockage of higher value landscape features (primarily background sky) would be like the existing condition.

Impact Conclusion. The overall level of visual change would be low to moderate and in the context of the existing landscape's moderate to high visual sensitivity. The resulting visual effect would be less than significant, and no mitigation is required.

KOP 2-2 – Powerline Road – North

LESS THAN SIGNIFICANT. Figure 3.2-22a (KOP 2-2 Powerline Road - North, Existing View) presents the existing view to the southeast from Powerline Road, approximately 2.3 miles south of Brown Road. The view is down the existing utility corridor where the Project would be located as it crosses an open plain and then the eastern portion of the El Paso Mountains. Figure 3.2-22b (KOP 2-2 Powerline Road - North, Visual Simulation) presents a visual simulation that illustrates the replacement of an existing lattice-structure subtransmission line with the proposed TSP transmission line.

Although the Proposed Project structures would be from 30 to 50 percent taller than the existing lattice structures they would replace, their height would not substantially alter the overall visibility of the Project in relation to the landscape backdrop. The prominent, linear form and vertical line of the replacement poles would moderately contrast with the more complex lattice design of the adjacent structures. As a result, the proposed steel monopoles would somewhat reduce industrial character associated with the utility corridor, while at the same time increasing the overall complexity of the corridor resulting from inconsistent structural forms. While the replacement poles are lighter in color and those in the foreground would appear somewhat more reflective than the existing lattice structures depending on time of the day and season, over time, the dulled galvanized finish is expected to weather to a darker gray that would more closely match the existing transmission structures.

Therefore, the Proposed Project would exhibit moderate visual contrast with respect to form, line, color, and texture, and in the context of the existing utility facilities, the new structural landscape would appear co-dominant relative to the scale of the existing utility structures and landscape features. The extent of structural skylining would be like that of the existing structures. The new structures would not attract the attention of the casual observer given the established structural context, and view blockage of higher value landscape features (primarily valley plain, mountain slopes, and sky) would be like the existing condition (low).

Impact Conclusion. The overall level of visual change would be low to moderate and in the context of the existing landscape's moderate to high visual sensitivity, the resulting visual effect would be less than significant, and no mitigation is required.

KOP 2-3 – Powerline Road (EP21)

LESS THAN SIGNIFICANT. Figure 3.2-23a (KOP 2-3 Powerline Road - EP21, Existing View) presents the existing view to the southeast from Powerline Road (EP21), approximately 3.9 miles south of Brown Road. The view is down the existing utility corridor where the Project would be located as it crosses an open plain and then the eastern portion of the El Paso Mountains. Figure 3.2-23b (KOP 2-3 Powerline Road - EP21, Visual Simulation) presents a visual simulation that illustrates the replacement of an existing lattice-structure subtransmission line with a new TSP transmission line.

Although the Proposed Project structures would be more than 40 percent taller than the lattice structures they would replace, they would be shorter than the height of the adjacent structures of the paralleling transmission line and would not substantially alter the overall visibility of the Project in relation to the landscape backdrop. Additionally, because the replacement structures are taller, span distances could be greater in some locations, enabling the elimination of some of the structure locations, resulting in a slight reduction of the structural clutter within the utility corridor as shown in the Figure 3.2-23b (KOP 2-3 Powerline Road - EP21, Visual Simulation) simulation.

The prominent, linear form and vertical line of the replacement poles would moderately contrast with the more complex lattice design of the adjacent structures. As a result, the new steel monopoles would some-

what reduce industrial character associated with the utility corridor while at the same time increasing the overall complexity of the corridor resulting from inconsistent structural forms. While the replacement poles are lighter in color and those in the foreground would appear somewhat more reflective than the existing lattice structures depending on time of the day and season, over time, the dulled galvanized finish is expected to weather to a darker gray that would more closely match the existing transmission structures.

Therefore, the Proposed Project would exhibit moderate visual contrast with respect to form, line, color, and texture, and in the context of the existing utility facilities, the new structural landscape would appear co-dominant relative to the scale of the existing utility structures and landscape features. The extent of structural skylining would be like that of the existing structures. The new structures would not attract the attention of the casual observer given the established structural context, and view blockage of higher value landscape features (primarily valley plain, mountain slopes, and sky) would be like the existing condition (low).

Structure Finish. At the request of the BLM, three structure finish options to the Proposed Project's galvanized steel finish are illustrated in visual simulations.

Figure 3.2-23c (KOP 2-3 Powerline Road - EP21, Corten Simulation) presents a visual simulation of the use of Corten steel poles. As shown in the simulation, compared to the proposed gray galvanized treatment, the darker, rust-colored Corten steel poles would appear less visually contrasting with the darker vegetation and hillsides but more visually contrasting with the lighter background sky (where the structures extend above the horizon). As a result, the Corten steel poles would be similarly prominent in the landscape compared to the proposed gray galvanized poles, especially once the gray galvanized poles weather to a dulled gray. Therefore, the Corten steel poles are not recommended over the proposed standard gray galvanized poles.

Figure 3.2-23d (KOP 2-3 Powerline Road - EP21, Covert Green Sim.) presents a visual simulation of the use of steel poles that have received a darker Covert Green treatment. As shown in the simulation (and similar to the Corten steel poles), compared to the proposed light gray galvanized treatment, the dark Covert Green steel poles would appear less visually contrasting with the darker vegetation and hillsides, but more visually contrasting with the lighter background sky (where the structures extend above the horizon). As a result, the Covert Green steel poles would be similarly prominent in the landscape compared to the proposed gray galvanized poles, especially once the gray galvanized poles weather to a dulled darker gray. Therefore, the Covert Green poles are not recommended over the proposed standard gray galvanized poles.

Figure 3.2-23e (KOP 2-3 Powerline Road - EP21, Shadow Grey Sim.) presents a visual simulation of the use of steel poles that have received a darker Shadow Gray treatment. As shown in the simulation (and like the Corten and Covert Green treatments), compared to the proposed light gray galvanized treatment, the dark Shadow Gray steel poles would appear less visually contrasting with the darker vegetation and hillsides but more visually contrasting with the lighter background sky (where the structures extend above the horizon). As a result, the Shadow Gray steel poles would be similarly prominent in the landscape compared to the proposed gray galvanized poles, especially once the gray galvanized poles weather to a dulled darker gray. Therefore, the Shadow Gray poles are not recommended over the proposed standard gray galvanized poles.

Impact Conclusion. The overall level of visual change would be low to moderate, and in the context of the existing landscape's moderate to high visual sensitivity, the resulting visual effect would be less than significant, and no mitigation is required.

KOP 2-4 – Lexington Avenue in Randsburg

LESS THAN SIGNIFICANT. Figure 3.2-24a (KOP 2-4 Lexington Ave. Randsburg, Existing View) presents the existing view to the north from Lexington Avenue in Randsburg. The view encompasses a portion of a rural

residential area in the community of Randsburg adjacent to the existing utility corridor where the Project would be located. Figure 3.2-24b (KOP 2-4 Lexington Ave. Randsburg, Visual Simulation) presents a visual simulation that illustrates the replacement of existing lattice-structure subtransmission line with a new TSP transmission line.

Although the Proposed Project structures would be 15 to 30 percent taller than the existing lattice structures they would replace, their height would not substantially alter the overall visibility of the Project in relation to the landscape backdrop. While the slim, vertical design of the replacement poles would visually contrast with the complex lattice design of the adjacent transmission line structures, the replacement poles would be like the form of an adjacent wood- pole utility line. As a result, the proposed steel monopoles would somewhat reduce the structural complexity and industrial character associated with the utility corridor. While the replacement poles are lighter in color, and those in the foreground would appear somewhat more reflective than the existing lattice structures depending on time of day and season, over time, the dulled galvanized finish is expected to weather to a darker gray that would more closely match the existing transmission structures.

Therefore, the Proposed Project would exhibit a low to moderate degree of visual contrast with respect to form, line, color, and texture. In the context of the existing utility facilities and residential structures, the replacement poles would appear co-dominant relative to the scale of the existing utility structures and landscape features. The extent of structural skylining would be like that of the existing structures. The new structures would not attract the attention of the casual observer given the established structural context, and view blockage of higher value landscape features (background slopes and sky) would be similar to the existing condition (low).

Structure Finish. Figure 3.2-24c (KOP 2-4 Lexington Ave. Randsburg, Corten Simulation) presents a visual simulation of the use of Corten steel poles. As shown in the simulation, compared to the proposed gray galvanized treatment, the darker, rust-colored Corten steel poles would appear less visually contrasting with the darker vegetation and hillsides but more visually contrasting with the lighter background sky (where the structures extend above the horizon). As a result, the Corten steel poles would be similarly prominent in the landscape compared to the proposed gray galvanized poles, especially once the gray galvanized poles weather to a darker gray. Therefore, the Corten steel poles are not recommended over the proposed standard gray galvanized poles.

Underground Option. Section 4.3.1 addresses a potential underground segment through the Randsburg community.

Impact Conclusion. The overall level of visual change would be low to moderate and in the context of the existing landscape's moderate to high visual sensitivity, the resulting visual effect would be less than significant. The Corten finish is not recommended.

Impact AE-5: Create a new source of substantial light or glare that would adversely affect day or nighttime views.

LESS THAN SIGNIFICANT. Night lighting and glare impacts within Segment 2 would be less than significant, the same as for Segment 1. Please see the discussion of Impact AE-5 under Segment 1.

3.2.3.5. Segment 3N: Kramer Junction to Daggett

In Segment 3N, SCE would remove 45 existing subtransmission towers and poles and replace them with the following structure types: tubular steel multi-pole structures constructed from TSPs; wood multi-pole structures; and steel and wood H-frames constructed from LWS and wood poles. SCE would remove existing conductors and install new conductors on replacement and existing structures. Additionally, two interset structures would be installed in Segment 3N.

Impact AE-3: In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings.

Most of the Project impacts associated with construction or long-term presence of project components fall into the category of degradation of visual character or quality. Substantial degradation results from higher levels of visual contrast, project dominance, and view blockage. Visual contrast relates to spatial characteristics, visual scale, texture, form, line, and color. Therefore, this criterion will be utilized for making impact conclusions regarding the Proposed Project's effects on existing landscapes and views.

Construction

LESS THAN SIGNIFICANT. Construction of the Proposed Project would cause temporary visual effects due to the presence of equipment, vehicles, materials, and workforce. These effects would occur throughout the Proposed Project area. Construction would involve the use of cranes, heavy construction equipment, temporary storage and office facilities, and temporary laydown/staging areas.

Construction activities would include site clearing and grading, erection of the structures, conductor stringing and pulling, and site cleanup and restoration. As previously noted, Segment 3N is the most isolated of the Project segments, and there would be less construction activity compared to some of the other segments. However, construction activities could be visible from local roads including Harper Lake Road, Irwin Road, Fort Irwin Road, and Daggett-Yermo Road; a few scattered rural residences at the eastern edge of Harper Dry Lake, north of Hinkley; the crossing of I-15; and several rural residences, a school, and an RV park west of the community of Yermo. Throughout the construction period, the industrial character of the activities would cause substantial visual contrast and visual change and constitute adverse visual effects when viewed from the immediate project vicinity and roads in the Project area. However, since construction activities and equipment brought into the Proposed Project area and onto the Proposed Project sites would be temporary, they would result in less than significant aesthetics impacts and no mitigation is required.

Operations and Maintenance

LESS THAN SIGNIFICANT. Impact AE-3 considers the permanent impacts (i.e., operational and maintenance effects) of the Proposed Project. As previously stated, aesthetics effects associated with project operation are typically direct effects unless otherwise noted.

Because of the remoteness of Segment 3N and the limited public viewing opportunities, no KOPs were assigned to this segment (in consultation with the BLM), and no simulations were prepared. The aesthetic impacts along this segment would be similar to the impacts previously described for Segment 2 above and Segment 3S (below). The overall level of visual change would be low to moderate.

Impact Conclusion. In the context of the existing landscape's moderate visual sensitivity, the resulting visual effects would be less than significant, and no mitigation is required.

Impact AE-5: Create a new source of substantial light or glare that would adversely affect day or nighttime views.

LESS THAN SIGNIFICANT. Night lighting and glare impacts within Segment 3N would be less than significant, the same as for Segment 1. Please refer to the discussion of Impact AE-5 under Segment 1.

3.2.3.6. Segment 3S: Kramer Junction to Daggett

In Segment 3S, SCE would remove some existing subtransmission towers and poles and replace them with tubular steel multi-pole structures constructed from TSPs; wood multi-pole structures; and steel and

wood H-frames constructed from LWS and wood poles. SCE would remove existing conductors and install new conductors on replacement and existing structures.

Impact AE-3: In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings.

Most of the Project impacts associated with construction or long-term presence of project components fall into the category of degradation of visual character or quality. Substantial degradation results from higher levels of visual contrast, project dominance, and view blockage. Visual contrast relates to spatial characteristics, visual scale, texture, form, line, and color. Therefore, this criterion will be utilized for making impact conclusions regarding the Proposed Project's effects on existing landscapes and views.

Construction

LESS THAN SIGNIFICANT. Construction of the Proposed Project would cause temporary visual effects due to the presence of equipment, vehicles, materials, and workforce. These effects would occur throughout the Proposed Project area. Construction would involve the use of cranes, heavy construction equipment, temporary storage and office facilities, and temporary laydown/staging areas. Construction activities would include site clearing and grading, erection of the structures, conductor stringing and pulling, and site cleanup and restoration.

Construction activities would be visible from the rural residential community of Grandview west of Barstow, several rural residences, a residential subdivision in southern Barstow, and numerous highways and roads including I-15, I-40, SR 58, SR 247 (Barstow Road), National Trails Highway (Route 66), Riverview Road, Valley Wells Road, Old Hinkley Road, Hinkley Road, Mountain View Road, Lenwood Road, Agate Road, and Camp Rock Road. Throughout the construction period, the industrial character of the activities would cause substantial visual contrast and visual change and constitute adverse visual effects when viewed from the immediate Project vicinity, roads in the Proposed Project area, and all KOPs.

Because construction activities and equipment brought into the Proposed Project area and onto the Proposed Project sites would be temporary, they would result in less than significant aesthetics impacts, and no mitigation is required.

Operations and Maintenance

Impact AE-3 considers the permanent impacts (i.e., operational and maintenance effects) of the Proposed Project. The analysis of operational effects was conducted with respect to the visual change perceived from one representative KOP. As previously stated, aesthetics effects associated with project operation are typically direct effects unless otherwise noted. The following paragraphs present the aesthetics analysis for the representative KOP selected for Segment 3S (in consultation with the BLM). Project effects are illustrated in the visual simulation provided at the end of Section 3.2.

KOP 3S-1 – Eastbound I-40 Near Daggett

LESS THAN SIGNIFICANT. Figure 3.2-25a (KOP 3S-1 I-40 Near Daggett, Existing View) presents the existing view to the east from eastbound I-40 near Daggett, approximately 0.26 mile west of the Project's span of I-40. The view encompasses a portion of Segment 3S within the existing utility corridor that converges on, and then spans, I-40 just east of Daggett. Figure 3.2-25d (KOP 3S-1 I-40 Near Daggett, Visual Simulation) presents a visual simulation that illustrates the replacement of the existing wood poles at the span of I-40 with standard gray galvanized steel poles. The replacement poles are slightly shorter than the existing wood poles but larger in diameter. The form and line of the replacement structures are nearly the same as the removed three-pole wood structures. The standard light-gray galvanized finish of the proposed replacement poles may result in slightly increased reflectivity depending on time of day and season. However, this is offset by the lighter color which blends better with the lighter background sky when

compared to the darker, existing wood poles that exhibit greater color contrast when viewed against a lighter background (sky and distant mountains).

The resulting visual contrast would be low, and the new poles would appear subordinate to co-dominant relative to the scale of the other structural features in the existing landscape. View blockage of higher value landscape features (desert plain, distant mountains, and sky) would be low relative to the existing condition.

Impact Conclusion. The overall level of visual change would be low, and in the context of the existing landscape's moderate to high visual sensitivity, the resulting visual effect would be less than significant, and no mitigation is required.

Impact AE-5: Create a new source of substantial light or glare that would adversely affect day or nighttime views.

LESS THAN SIGNIFICANT. Night lighting and glare impacts within Segment 3S would be less than significant, the same as for Segment 1. Please refer to the discussion of Impact AE-5 under Segment 1.

3.2.4. Mitigation Monitoring, Compliance, and Reporting

Table 3.2-2 presents the mitigation monitoring, compliance, and reporting information for aesthetics. The full text of the mitigation measure is presented in Section 3.2.3.3.

Table 3.2-2. Mitigation Monitoring Program – Aesthetics

Mitigation Component	Text or Description
Mitigation Measure AE-3a	**Apply Corten finish to select tubular steel poles.**
Location	Project structures 915 through 954 only
Monitoring / Reporting Action	Surface Treatment Plan to be submitted to CPUC
Effectiveness Criteria	Treatment Plan is implemented as approved
Responsible Agency	CPUC
Timing	60 days prior to start of construction

3.2.5. References

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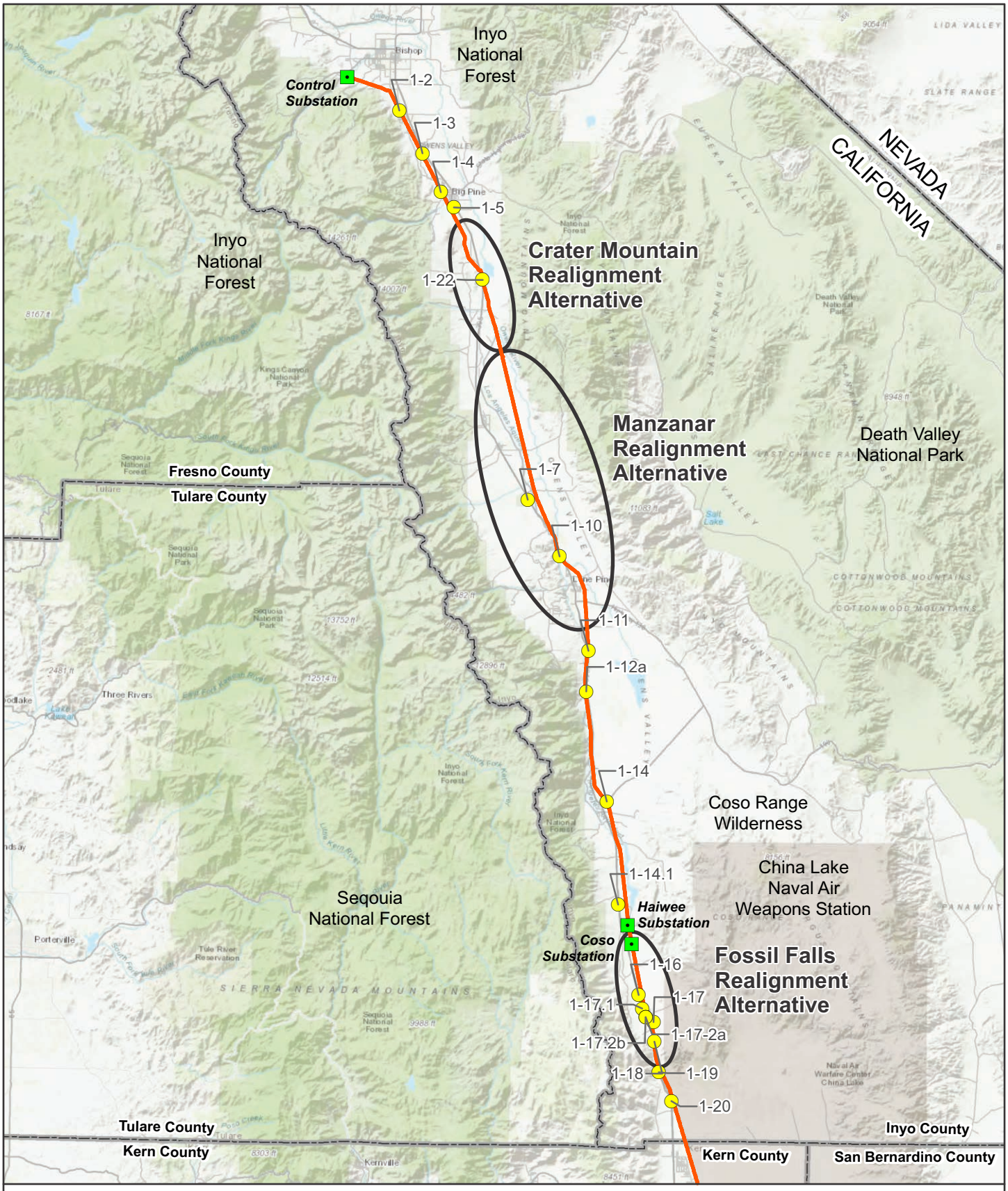
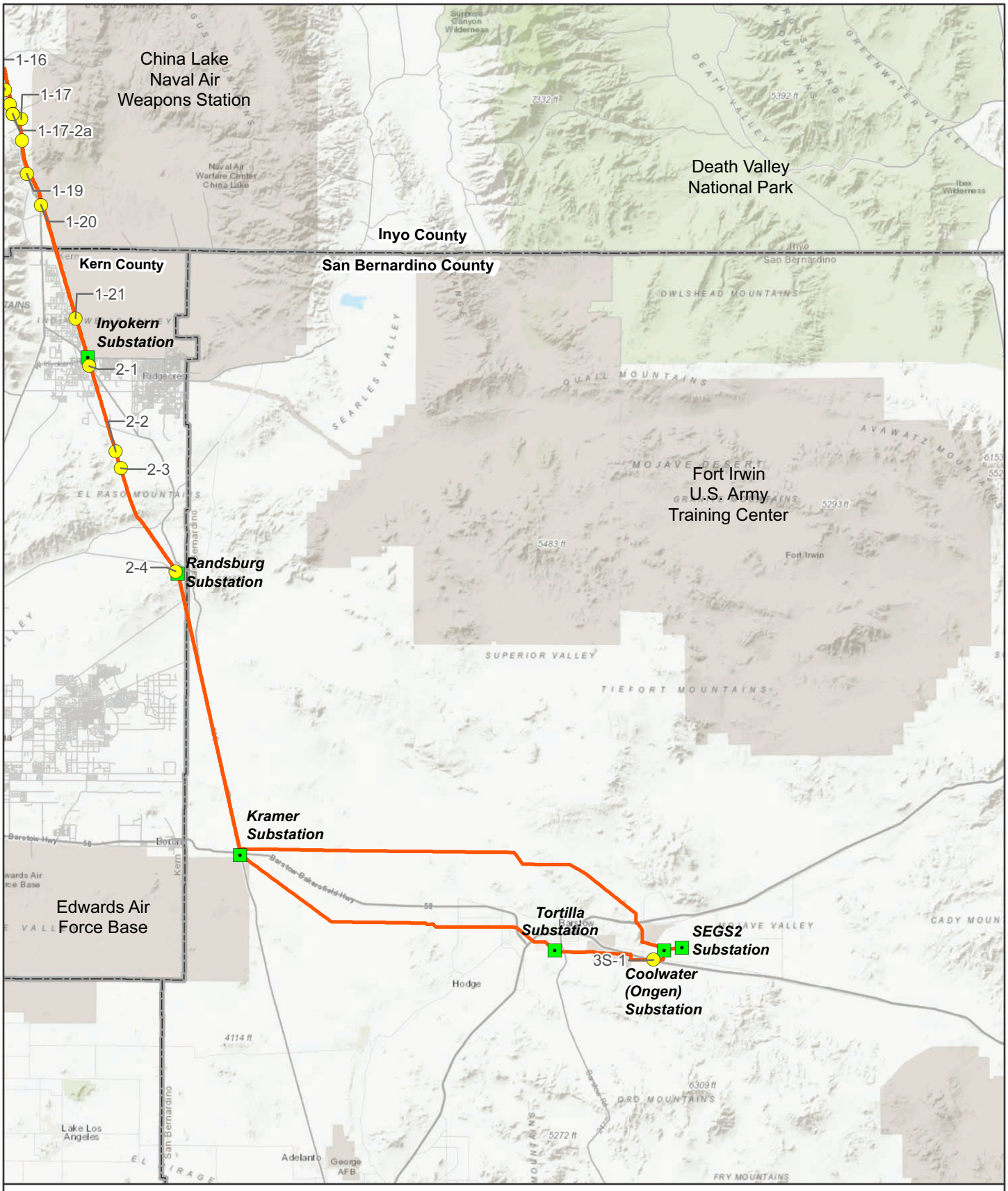


Figure 3.2-1a

Key Observation Point Locations Segment 1



Source: ARCADIS, 2022.

N

0 20

Miles

KOP Location – KOPs moving forward per BLM

Substation

Ivanpah - Control Project Alignment

Roads and Highways

Counties

Figure 3.2-1b

Key Observation Point Locations Segments 2, 3N, & 3S



Latitude: 37.288124° Longitude: -118.386300°

This image presents the **Existing View** to the north from **KOP 1-2** on Gerkin Road, south of Bishop. The view encompasses a portion of Segment 1 within the existing utility corridor that parallels and then crosses Gerkin Road west of US 395. The foreground to middleground landscape is of a rural electric utility corridor with substantial industrial character, bordered by rounded hill slopes and a flat, valley plain, and backdropped by the irregular to horizontal forms of distant mountain ranges.	**KOP 1-2** **Gerkin Road** **Existing View**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-2a**



Latitude: 37.288124° Longitude: -118.386300°

This image presents a **Visual Simulation** of the Proposed Project that illustrates the replacement of an existing lattice-structure subtransmission line with a new tubular steel pole transmission line, as viewed from **KOP 1-2** on Gerkin Road. Although the new Project structures would be noticeably taller than the existing lattice structures they would replace, their height would not substantially alter the overall visibility of the Project in relation to the landscape backdrop.	**KOP 1-2** **Gerkin Road** **Visual Simulation**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-2b**



This image presents the **Existing View** to the south from **KOP 1-3** on southbound US 395, south of the north crossing of Big Pine Canal. The view encompasses a portion of Segment 1 within the existing utility corridor that parallels the west side of US 395. The foreground to middleground rural landscape captures a flat valley plain and electric utility corridor with substantial industrial character, backdropped by rounded hill slopes and irregular horizontal to angular ridgelines.	**KOP 1-3** **Southbound US 395** **Existing View**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-3a**



Latitude: 37.226711° Longitude: -118.343116°

This image presents a **Visual Simulation** of the Proposed Project that illustrates the replacement of an existing lattice-structure subtransmission line with a new tubular steel pole transmission line, as viewed from **KOP 1-3** on southbound US 395, south of the north crossing of Big Pine Canal. Although the new Project structures would be noticeably taller than the existing lattice structures they would replace, their height would not substantially alter the overall visibility of the Project relative to he landscape backdrop.	**KOP 1-3** **Southbound US 395** **Visual Simulation**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-3b**



This image presents the **Existing View** to the east from **KOP 1-4** within Baker Creek Campground in Big Pine. The view captures a portion of Segment 1 within the existing utility corridor that passes immediately adjacent and to the east of the campground. The foreground landscape is of a rural park setting backdropped by an electric utility corridor characterized by complex structures with substantial industrial character. A distant mountain range appears light to medium blue in the background.	**KOP 1-4** **Baker Creek Cpgd.** **Existing View**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-4a**



Latitude: 37.170702° Longitude: -118.308513°

This image presents a **Visual Simulation** of the Proposed Project that illustrates the replacement of an existing lattice-structure subtransmission line with a new tubular steel pole transmission line, as viewed from **KOP 1-4** within Baker Creek Campground. The replacement monopole would be over 50 percent taller than the existing lattice structure that has been removed in the simulation. The increased height of the tubular steel pole would eliminate the need for an adjacent lattice structure to the left of this image.	**KOP 1-4** **Baker Creek Cpgd.** **Visual Simulation**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-4b**



This image presents the **Existing View** to the southwest from **KOP 1-5** on Big Pine Dump Road, immediately south of the intersection with US 395. The view captures a portion of Segment 1 within the existing utility corridor that parallels the west side of US 395. The foreground to middleground rural landscape encompasses a flat valley plain and electric utility corridor with substantial industrial character, backdropped by the angular form of Crater Mountain.	**KOP 1-5** **Big Pine Dump Road** **Existing View**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-5a**



Latitude: 37.148673° Longitude: -118.284252°

This image presents a **Visual Simulation** of the Proposed Project that illustrates the replacement of an existing lattice-structure subtransmission line with a new tubular steel pole transmission line, as viewed from **KOP 1-5** on Big Pine Dump Road. Although the new poles would be taller than the existing lattice structures, due to distance from the viewpoint and backdrop conditions, the height difference would not substantially alter the overall visibility of the Project in the landscape.	**KOP 1-5** **Big Pine Dump Road** **Visual Simulation**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-5b**



This image presents a **Visual Simulation** of the use of Corten steel poles instead of the proposed galvanized steel poles. As shown in the image, the darker color of the Corten steel poles would contrast more with the lighter background terrain and vegetation, thereby increasing overall Project visibility and contrast. In comparison to the galvanized steel poles shown in Figure D.2-5B, the Corten steel poles would be more visually prominent and thus, more noticeable to travelers on US 395.

KOP 1-5
Big Pine Dump Road
Corten Steel Simulation

Ivanpah-Control Project EIR
Aesthetics
Figure 3.2-5c



Latitude: 36.726252° Longitude: -118.144724°

This image presents the **Existing View** to the east from **KOP 1-7** at the Manzanar Historic Entry, just east of US 395. The view encompasses the point of entry in the foreground, backdropped by the imposing Inyo Mountains to the east, which help to define the eastern boundary of the Owens River Valley. The existing ROW where the Proposed Project would be located is discernible along the valley floor, just slightly less than one mile to the east of the Historic Entry.	**KOP 1-7** **Manzanar** **Existing View**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-6a**



Latitude: 36.726252° Longitude: -118.144724°

This image presents a **Visual Simulation** of the Proposed Project along the valley floor to the east, illustrating the replacement of an existing lattice-structure subtransmission line with a new tubular steel pole transmission line, as viewed from **KOP 1-7** at the Manzanar Historic Entry. The replacement galvanized steel monopoles would be visibly taller than the existing lattice structures. However, due to the increased spacing between the poles, fewer structures would appear in place of the existing lattice structures.	**KOP 1-7** **Manzanar** **Galvanized Simulation**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-6b**



Latitude: 36.726252° Longitude: -118.144724°

This image presents a **Visual Simulation** of the use of Corten steel poles instead of the proposed galvanized steel poles. As shown in the image, the darker color of the Corten steel poles would contrast more with the lighter background terrain, thereby increasing overall Project visibility and visual contrast. In comparison to the galvanized steel poles shown in Figure D.2-6B, the Corten poles would be more visually prominent and thus, more noticeable to visitors at the Manzanar National Historic Site.	**KOP 1-7** **Manzanar** **Corten Steel Simulation**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-6c**



Latitude: 36.726252° Longitude: -118.144724°

This image presents a **Visual Simulation** of the use of shorter gray galvanized steel monopoles. However, the visual benefit achieved by reducing structure height is more than offset by the greater visual prominence resulting from the visibility of the more numerous shorter poles, as is apparent in the comparison to the proposed poles illustrated in Figure D.2-6B. Thus, the shorter poles would be more noticeable to visitors at the Manzanar National Historic Site compared to the proposed poles.	**KOP 1-7** **Manzanar** **Shorter Poles Simulation**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-6d**



Latitude: 36.726252° Longitude: -118.144724°

This image presents a **Visual Simulation** of the use of shorter Corten steel monopoles. Similar to the result for the shorter gray, galvanized steel poles illustrated in Figure D.2-6D, the visual benefit achieved by reducing structure height is more than offset by the greater visual prominence resulting from the visibility of the more numerous shorter poles, which is further exacerbated by the greater visibility and visual contrast resulting from the darker Corten poles viewed against the lighter background terrain.	**KOP 1-7 Manzanar** **Shorter Corten Poles Visual Simulation**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-6e**



This image presents the **Existing View** to the southeast from **KOP 1-10** on southbound US 395, approximately three miles north of Lone Pine. The view encompasses a portion of Segment 1 within the existing utility corridor that converges on and then parallels the east side of US 395. The foreground to middleground rural landscape consists of a flat valley plain and electric utility corridor with substantial industrial character, backdropped by rounded hill slopes and irregular horizontal to angular ridgelines.	**KOP 1-10** **US 395 Lone Pine** **Existing View**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-7a**



This image presents a **Visual Simulation** of the Proposed Project that illustrates the replacement of the existing lattice subtransmission line structures with new tubular steel poles. The replacement monopoles would be visibly taller than the existing lattice structures. As a result of the increased spacing between the replacement poles, fewer tangent (in-line) structures would would be needed in place of the existing lattice structures. However, at each angle point, two poles would be needed instead of one lattice structure.	**KOP 1-10** **US 395 Lone Pine** **Visual Simulation**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-7b**



Source: SCE I-C PEA

Latitude: 36.507913° Longitude: -118.032324°

This image presents the **Existing View** to the north from **KOP 1-11** on northbound US 395, near Owens Lake. The view captures a portion of Segment 1 within the existing utility corridor that converges on and then spans US 395. The foreground to middle-ground rural landscape encompasses a rolling to flat valley plain, border lands, and electric utility corridor with substantial industrial character, backdropped by rounded to angular distant mountains in some view directions.	**KOP 1-11** **US 395 Owens Lake** **Existing View**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-8a**



Source: SCE I-C PEA

Latitude: 36.507913° Longitude: -118.032324°

This image presents a **Visual Simulation** of the Proposed Project that illustrates the replacement of the existing lattice subtransmission line structures with tubular steel monopoles as viewed from **KOP 1-11**. The new replacement poles would be approximately 30% taller than the existing lattice structures along this portion of the route. However, the height difference would not be particularly noticeable to travelers on the highway and the increased span distances would eliminate several structure locations.	**KOP 1-11** **US 395 Owens Lake** **Visual Simulation**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-8b**



Latitude: 36.448792° Longitude: -118.034835°

This image presents the **Existing View** to the south from **KOP 1-12a** on southbound US 395, south of Lone Pine and approximately 0.4 mile north of Cottonwood Road. The view encompasses a portion of Segment 1 within the existing utility corridor that converges on and then parallels the west side of US 395. The foreground to middleground rural landscape consists of a flat to rolling valley plain crossed by a visually prominent utility corridor with substantial industrial character, backdropped by foothill slopes and ridges.	**KOP 1-12a** **US 395 South of Lone Pine** **Existing View**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-9a**



Latitude: 36.448792° Longitude: -118.034835°

This image presents a **Visual Simulation** of the Proposed Project that illustrates the replacement of the existing lattice-structure subtransmission line with galvanized tubular steel monopoles as viewed from **KOP 1-12a**. The new poles would be approximately 28% taller than the existing lattice structures along this portion of the route. The increased height of the monopoles would result in a reduction in the number of visible structures due to increased spans and would not alter the overall visibility of the Project.	**KOP 1-12a** **US 395 South of Lone Pine** **Galvanized Simulation**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-9b**



Latitude: 36.448792° Longitude: -118.034835°

This image presents a **Visual Simulation** of the use of Corten steel poles instead of the proposed galvanized steel poles shown in Figure D.2-9B. As shown in the image above, the darker color of the Corten steel poles would contrast more with the lighter background terrain, thereby increasing overall Project visibility and visual contrast. In comparison to the galvanized steel poles, the Corten steel poles would be more visually prominent and thus, more noticeable to travelers on US 395.	**KOP 1-12a** **US 395 South of Lone Pine** **Corten Simulation**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-9c**



Latitude: 36.289692° Longitude: -117.995914°

This image presents the **Existing View** to the southwest from **KOP 1-14** on southbound SR 190, approximately 0.8 mile northeast of Olancha. The view encompasses a portion of Segment 1 within the existing utility corridor that spans SR 190. The foreground landscape is of a flat valley floor with extensive electric utility infrastructure exhibiting complex structures and considerable industrial character, transitioning to moderately sloping alluvial fans and prominent, rugged mountain massif in the background.

KOP 1-14
SR 190 Near Olancha
Existing View

Ivanpah-Control Project EIR
Aesthetics
Figure 3.2-10a



Latitude: 36.289692° Longitude: -117.995914°

This image presents a **Visual Simulation** of the Proposed Project that illustrates the replacement of the existing lattice-structure subtransmission line with galvanized tubular steel monopoles as viewed from **KOP 1-14**. The replacement monopole visible in the image above would be noticeably taller than the existing lattice structure that has been replaced. The increased height of the pole would result in the elimination of an additional lattice structure (to the right of this frame of view).	**KOP 1-14** **SR 190 Near Olancha** **Galvanized Simulation**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-10b**



Latitude: 36.140109° Longitude: -117.973836°

This image presents the **Existing View** to the east from **KOP 1-14.1** at the intersection of South Haiwee Road and US 395. The view encompasses a portion of South Haiwee Road (with adjacent wood-pole utility line), the southern end of South Haiwee Reservoir, and the existing electric transmission corridor passing in front (to the west) of the reservoir, backdropped by the rugged, western foothills of the Coso Range. The existing transmission line with weathered-gray lattice structures is barely discernible.	**KOP 1-14.1** **S. Haiwee Road at US 395** **Existing View**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-11a**



Latitude: 36.140109° Longitude: -117.973836°

This image presents a **Visual Simulation** of the Proposed Project that illustrates the replacement of the existing lattice-structure subtransmission line with galvanized tubular steel monopoles as viewed from **KOP 1-14.1**. The replacement monopoles would be visibly taller than the existing lattice structures and slightly more visible due to the absence of the more "transparent" character typical of lattice structures when viewed at distance.	**KOP 1-14.1** **S. Haiwee Road at US 395** **Galvanized Simulation**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-11b**



This image presents the **Existing View** to the north from **KOP 1-16** on northbound US 395, approximately 1.5 miles north of Red Hill Cinder Cone. The view encompasses a portion of Segment 1 within the existing utility corridor that parallels the east side of US 395 in this area. The foreground to middleground rural landscape encompasses a flat valley plain and barely discernible electric utility corridor, backdropped by the angular to horizontal western foothills of the Coso Range to the east.	**KOP 1-16** **US 395 North of Red Hill** **Existing View**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-12a**



This image presents a **Visual Simulation** of the Proposed Project that illustrates the replacement of the existing lattice-structure subtransmission line with galvanized tubular steel monopoles as viewed from **KOP 1-16**. Although the new poles would be taller than the existing lattice structures, due to distance from the viewpoint and backdrop conditions, the height difference would not alter the overall visibility of the Project in the landscape.	**KOP 1-16** **US 395 North of Red Hill** **Galvanized Simulation**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-12b**



This image presents a **Visual Simulation** of the use of Corten steel poles instead of the proposed galvanized steel poles. As shown in the image, the darker color of the Corten steel poles would contrast more with the lighter background terrain, thereby increasing overall Project visibility and visual contrast. In comparison to the galvanized steel poles shown in Figure D.2-12B, the Corten poles would be more visually prominent and thus, more noticeable to travelers on US 395.	**KOP 1-16** **US 395 North of Red Hill** **Corten Simulation**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-12c**



This image presents the **Existing View** to the southwest from **KOP 1-17** on Fossil Falls Trail. The view encompasses a portion of Segment 1 within the existing utility corridor that passes approximately 0.3 mile west of Fossil Falls. The foreground is dominated by dark, rounded to jagged, volcanic rock, backdropped by a middleground flat plain that transitions to a background of rounded to sloping and angular mountain ridges. The transmission line corridor with lattice structures is barely discernible along the plain.	**KOP 1-17** **Fossil Falls Trail** **Existing View**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-13a**



This image presents a **Visual Simulation** of the Proposed Project that illustrates the replacement of the existing lattice-structure subtransmission line with galvanized tubular steel monopoles as viewed from **KOP 1-17**. Although the new poles would be taller than the existing lattice structures, due to distance from the viewpoint and backdrop conditions, the height difference would not alter the overall visibility of the Project in the landscape.	**KOP 1-17** **Fossil Falls Trail** **Visual Simulation**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-13b**



Latitude: 35.989631° Longitude: -117.929179°

This image presents the **Existing View** to the east-southeast from **KOP 1-17.1** on southbound US 395, immediately west of Red Hill Cinder Cone. The view encompasses a portion of Segment 1 within the existing utility corridor that passes between Red Hill Cinder Cone (Red Hill) and US 395. The foreground to middleground rural landscape consists of a thin strip of relatively nondescript, valley floor where the existing utility corridor passes, backdropped by the visually dominant, rounded form of Red Hill.

KOP 1-17.1
US 395 Near Red Hill
Existing View

Ivanpah-Control Project EIR
Aesthetics
Figure 3.2-14a



Latitude: 35.989631° Longitude: -117.929179°

This image presents a **Visual Simulation** of the Proposed Project that illustrates the replacement of the existing lattice-structure subtransmission line with galvanized tubular steel monopoles as viewed from **KOP 1-17.1**. The new poles would be noticeably taller than the existing lattice structures along this portion of the route. The increased structural height, stronger vertical form and line, and absence of structure "transparency" (often associated with lattice structures) would result in a moderate increase in structural contrast.

KOP 1-17.1
US 395 Near Red Hill
Visual Simulation

Ivanpah-Control Project EIR
Aesthetics
Figure 3.2-14b



Latitude: 35.989631° Longitude: -117.929179°

This image presents a **Visual Simulation** of the design option that includes the use of a Corten steel pole instead of a galvanized gray pole. This option also includes the relocation of poles such that two poles would be visible in this frame of view. As shown in the simulation, the initial brightness of the galvanized gray poles would contrast more with the darker reddish-rust hue of the background than would the rust-colored Corten steel poles. However, this benefit only occurs with a suitable dark, rust-colored backdrop.

KOP 1-17.1
US 395 Near Red Hill
Corten Simulation

Ivanpah-Control Project EIR
Aesthetics
Figure 3.2-14c



Latitude: 35.977415° Longitude: -117.922920°

This image presents the **Existing View** to the north-northeast from **KOP 1-17.2a** at the intersection of Cinder Road and north-bound US 395, immediately southeast of Red Hill. The view encompasses a portion of Segment 1 within the existing utility corridor that passes between Red Hill and US 395. The foreground to middleground rural landscape consists of a thin strip of relatively nondescript, valley floor where the existing utility corridor passes, backdropped by the visually dominant, rounded form of Red Hill.	**KOP 1-17.2a** **US 395-Cinder Road NNE** **Existing View**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-15a**



Latitude: 35.977415° Longitude: -117.922920°

This image presents a **Visual Simulation** of the Proposed Project that illustrates the replacement of the existing lattice-structure subtransmission line with galvanized tubular steel monopoles as viewed from **KOP 1-17.2a**. The new poles would be noticeably taller than the existing lattice structures along this portion of the route. The increased structural height, stronger vertical form and line, and absence of structure "transparency" (often associated with lattice structures) would result in a moderate increase in structural contrast.

KOP 1-17.2a
US 395-Cinder Road NNE
Visual Simulation

Ivanpah-Control Project EIR
Aesthetics
Figure 3.2-15b



Latitude: 35.977415° Longitude: -117.922920°

This image presents a **Visual Simulation** of the design option that includes the use of Corten steel poles instead of galvanized gray poles. As shown in the simulation, the initial brightness of the galvanized gray poles would contrast more with the darker reddish-rust hue of the background hill slopes than would the rust-colored Corten steel poles. However, this benefit only occurs with a suitable dark, rust-colored backdrop and not with the more typical lighter backdrops of soils, vegetation, and sky.	**KOP 1-17.2a** **US 395-Cinder Road NNE** **Corten Simulation**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-15c**



This image presents the **Existing View** to the east from **KOP 1-17.2b** at the intersection of Cinder Road and northbound US 395, immediately southeast of Red Hill. The view encompasses a portion of Segment 1 within the existing utility corridor that passes between Red Hill and US 395. The foreground to middleground rural landscape consists of a thin strip of relatively nondescript, valley floor punctuated with outcrops of lava rock and backdropped by rolling, western foothills of the Coso Range.	**KOP 1-17.2b** **US 395-Cinder Road-East** **Existing View**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-16a**



This image presents a **Visual Simulation** of the Proposed Project that illustrates the replacement of the existing lattice-structure subtransmission line with galvanized tubular steel monopoles as viewed from **KOP 1-17.2b**. The new poles would be taller than the existing lattice structures but less structurally complex. Thus, the increased structural height and stronger vertical form and line would cause a moderate increase in structural contrast, which would be partially offset by a reduction in industrial character.

KOP 1-17.2b
US 395-Cinder Road-East
Visual Simulation

Ivanpah-Control Project EIR
Aesthetics
Figure 3.2-16b



This image presents a **Visual Simulation** of the the use of Corten steel poles instead of gray galvanized steel poles. As shown in the simulation, the darker rust-colored Corten steel poles would contrast more with the lighter background hill terrain and sky (where the structures extend above the horizon) compared to the proposed gray galvanized treatment (see Figure D.2-16B). Therefore, where the poles are backdropped by light vegetation, hills, and sky, Corten steel poles would result in greater color contrast.	**KOP 1-17.2b** **US 395-Cinder Road-East** **Corten Simulation**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-16c**



Latitude: 35.941856° Longitude: -117.906839°

This image presents the **Existing View** to the northeast from **KOP 1-18** on northbound US 395 at Little Lake. The view encompasses a portion of Segment 1 within the existing utility corridor that spans the southern end of Little Lake and passes adjacent to US 395. The foreground to middleground rural landscape consists of primarily a flat valley plain, lake, and electric utility corridor with substantial industrial character, all backdropped by a dark, linear, basalt escarpment and more distant irregular to rounded light-colored mountains.	**KOP 1-18** **US 395 at Little Lake** **Existing View**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-17a**



Latitude: 35.941856° Longitude: -117.906839°

This image presents a **Visual Simulation** of the Proposed Project that illustrates the replacement of the existing lattice-structure subtransmission line with galvanized tubular steel monopoles as viewed from **KOP 1-18**. The new poles would be noticeably taller than the existing lattice structures but less structurally complex. However, at the two angle points, a dual monopole configuration would be deployed, resulting in additional structures. The new poles would also be shifted somewhat to the north and east.	**KOP 1-18** **US 395 at Little Lake** **Visual Simulation**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-17b**



Latitude: 35.941856° Longitude: -117.906839°

This image presents a **Visual Simulation** of the the use of Corten steel poles instead of gray galvanized steel poles. As shown in the simulation, the darker rust-colored Corten steel poles would appear less visually contrasting with the darker escarpment but contrast more with the lighter background mountains and sky compared to the gray galvanized poles (see Figure D.2-17B). As a result, the Corten steel poles would be more visually prominent in the landscape.

KOP 1-18
US 395 at Little Lake
Corten Simulation

Ivanpah-Control Project EIR
Aesthetics
Figure 3.2-17c



Latitude: 35.941856° Longitude: -117.906839°

This image presents a **Visual Simulation** of the the use of steel poles that have received a very dark galvanizing treatment. As shown in the simulation, the dark gray poles would appear less visually contrasting with the darker escarpment compared to the light gray poles, but more visually contrasting compared to the Corten poles. Against the lighter mountains and sky, the dark gray poles would be more visually contrasting than either the light gray galvanized poles or the Corten poles.	**KOP 1-18** **US 395 at Little Lake** **Dark Gray Simulation**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-17d**



Latitude: 35.897225° Longitude: -117.898441°

This image presents the **Existing View** to the north from **KOP 1-19** on northbound US 395 at The Narrows, approximately three miles south of Little Lake. The view encompasses a portion of Segment 1 within the existing utility corridor that parallels the east side of US 395 through The Narrows. The foreground to middleground rural landscape encompasses a narrow portion of flat valley plain containing the existing transmission line corridor, backdropped by a darker, linear, basalt escarpment.	**KOP 1-19** **US 395 at The Narrows** **Existing View**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-18a**



Latitude: 35.897225° Longitude: -117.898441°

This image presents a **Visual Simulation** of the Proposed Project that illustrates the replacement of the existing lattice-structure subtransmission line with galvanized tubular steel monopoles as viewed from **KOP 1-19**. The new poles would be noticeably taller than the existing lattice structures, and the lighter-gray galvanizing treatment would render the poles somewhat luminous in the foreground, becoming more subtle with distance. The increased height and lighter color would contribute to increased Project visibility.

KOP 1-19
US 395 at The Narrows
Visual Simulation

Ivanpah-Control Project EIR
Aesthetics
Figure 3.2-18b



Latitude: 35.897225° Longitude: -117.898441°

This image presents a **Visual Simulation** of the the use of Corten steel poles instead of gray galvanized steel poles. As shown in the simulation, compared to the proposed light gray galvanizing treatment, the darker rust-colored Corten steel poles would appear less visually contrasting and blend better with the darker escarpment and surrounding vegetation. As a result, the Corten steel poles would appear less visually prominent in the landscape.	**KOP 1-19** **US 395 at The Narrows** **Corten Simulation**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-18c**



Latitude: 35.897225° Longitude: -117.898441°

This image presents a **Visual Simulation** of the the use of steel poles that have received a very dark galvanizing treatment. As shown in the simulation, the dark gray poles would appear less visually contrasting with the darker escarpment compared to the light gray poles, but more visually contrasting compared to the Corten poles. Against the lighter mountains and vegetation, the dark gray poles would be more visually contrasting than either the light gray galvanized poles or the Corten poles.	**KOP 1-19** **US 395 at The Narrows** **Dark Gray Simulation**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-18d**



Latitude: 35.856215° Longitude: -117.875515°

This image presents the **Existing View** to the north from **KOP 1-20** on northbound US 395 at the southern end of The Narrows. The view captures a portion of Segment 1 within the existing utility corridor that parallels the east side of US 395 through The Narrows. The foreground to middleground rural landscape encompasses a narrow portion of flat valley plain containing an existing transmission line corridor, backdropped by a darker, linear, basalt escarpment and a lighter-colored mountain range beyond.	**KOP 1-20** **US 395-The Narrows South** **Existing View**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-19a**



Latitude: 35.856215° Longitude: -117.875515°

This image presents a **Visual Simulation** of the Proposed Project that illustrates the replacement of the existing lattice-structure subtransmission line with galvanized tubular steel monopoles as viewed from **KOP 1-20**. The new poles would be noticeably taller than the existing lattice structures, and the lighter-gray galvanizing treatment would render the poles somewhat luminous in the foreground, becoming more subtle with distance. The increased height and lighter color would result in increased Project visibility.	**KOP 1-20** **US 395-The Narrows South** **Visual Simulation**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-19b**



Latitude: 35.856215° Longitude: -117.875515°

This image presents a **Visual Simulation** of the the use of Corten steel poles instead of gray galvanized steel poles. As shown in the simulation, compared to the proposed light gray galvanizing treatment, the darker rust-colored Corten steel poles would appear less visually contrasting and blend better with the background darker escarpment and surrounding vegetation. As a result, the Corten steel poles would appear less visually prominent in the landscape.	**KOP 1-20** **US 395-The Narrows South** **Corten Simulation**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-19c**



Latitude: 35.856215° Longitude: -117.875515°

This image presents a **Visual Simulation** of the the use of steel poles that have received a very dark galvanizing treatment. As shown in the simulation, the dark gray poles would appear less visually contrasting with the darker escarpment compared to the light gray poles, but would be similarly contrasting compared to the Corten poles. However, the reddish-rust hue of the Corten-type finish (Figure D.2-19C) appears to be a better match for the established color palette of the existing landscape.	**KOP 1-20** **US 395-The Narrows South** **Dark Gray Simulation**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-19d**



Latitude: 35.705033° Longitude: -117.816673°

This image presents the **Existing View** to the southeast from **KOP 1-21** on Patrice Avenue in Inyokern, near the southern end of Segment 1. The view captures a portion of a residential area adjacent to the existing utility corridor where the Project would be located. The foreground to middleground landscape is of a rural residential area and electric utility corridor that presents substantial industrial character due to the numerous utility structures with various designs.	**KOP 1-21** **Patrice Ave. Inyokern** **Existing View**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-20a**



Latitude: 35.705033° Longitude: -117.816673°

This image presents a **Visual Simulation** of the Proposed Project that illustrates the replacement of the existing lattice-structure subtransmission line with galvanized tubular steel monopoles as viewed from **KOP 1-21**. Although the new poles would be noticeably taller than the existing lattice structures, their height would not substantially alter Project visibility in relation to the existing landscape. Also, the new poles would eliminate the structural complexity and industrial character associated with lattice structures.	**KOP 1-21** **Patrice Ave. Inyokern** **Visual Simulation**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-20b**



Latitude: 35.641117° Longitude: -117.793679°

This image presents the **Existing View** to the southeast from **KOP 2-1** on Sydnor Avenue at Mercury Street in Inyokern. The view captures a portion of a residential area adjacent to the existing utility corridor where the Project would be located in Segment 2. The foreground to middleground landscape is of a rural residential area and electric utility corridor that presents substantial industrial character due to the numerous utility structures with various designs.	**KOP 2-1** **Sydnor Ave. Inyokern** **Existing View**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-21a**



This image presents a **Visual Simulation** of the Proposed Project that illustrates the replacement of the existing lattice-structure subtransmission line with galvanized tubular steel monopoles as viewed from **KOP 2-1**. Although the new poles would be noticeably taller than the existing lattice structures, their height would not substantially alter Project visibility or prominence in the context of the numerous other utility structures in the existing landscape.	**KOP 2-1** **Sydnor Ave. Inyokern** **Visual Simulation**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-21b**



Latitude: 35.527340° Longitude: -117.749271°

This image presents the **Existing View** to the southeast from **KOP 2-2** on Powerline Road, approximately 2.3 miles south of Brown Road. The view is down the existing utility corridor where the Project would be located as it crosses an open plain and then the eastern portion of the El Paso Mountains. The foreground to middleground landscape is of a gently inclined plain extending to moderate to rounded slopes with irregular and undulating ridgelines. The existing utility corridor is a visually prominent feature.

KOP 2-2
Powerline Road - North
Existing View

Ivanpah-Control Project EIR
Aesthetics
Figure 3.2-22a



Latitude: 35.641117° Longitude: -117.793679°

This image presents a **Visual Simulation** of the Proposed Project that illustrates the replacement of the existing lattice-structure subtransmission line with tubular steel monopoles as viewed from **KOP 2-2** on Powerline Road. Although the new poles would be noticeably taller than the existing lattice structures they are replacing, their height would not substantially alter Project visibility or prominence in the context of the adjacent and larger lattice-structure transmission line.	**KOP 2-2** **Powerline Road - North** **Visual Simulation**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-22b**



Latitude: 35.504861° Longitude: -117.740897°

This image presents the **Existing View** to the southeast from **KOP 2-3** on Powerline Road / BLM Road EP21, approximately 3.9 miles south of Brown Road. The view is down the existing utility corridor where the Project would be located as it crosses an open plain and then ascends the eastern portion of the El Paso Mountains. The foreground to middleground landscape is of a gently inclined plain extending to moderate to rounded slopes with undulating ridgelines, and a visually prominent utility corridor.	**KOP 2-3** **Powerline Road - EP21** **Existing View**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-23a**



Latitude: 35.504861° Longitude: -117.740897°

This image presents a **Visual Simulation** of the Proposed Project that illustrates the replacement of an existing lattice-structure subtransmission line with tubular steel monopoles as viewed from **KOP 2-3** on Powerline Road/BLM Road EP21. Although the new poles would be approximately 33% taller than the existing lattice structures they are replacing, their height would not substantially alter Project visibility or prominence in the context of the adjacent and larger lattice-structure transmission line.	**KOP 2-3** **Powerline Road - EP21** **Visual Simulation**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-23b**



Latitude: 35.504861° Longitude: -117.740897°

This image presents a **Visual Simulation** of the the use of Corten steel poles instead of gray galvanized steel poles. As shown in the simulation, compared to the proposed light gray galvanizing treatment, the darker rust-colored Corten steel poles would appear less visually contrasting and blend better with the darker vegetation and hillsides but more visually contrasting with the lighter background sky.	**KOP 2-3** **Powerline Road - EP21** **Corten Simulation**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-23c**



Latitude: 35.504861° Longitude: -117.740897°

This image presents a **Visual Simulation** of the use of steel poles that have received a darker Covert Green treatment. As shown in the simulation (and similar to the Corten steel poles), compared to the proposed light gray galvanized treatment, the dark Covert Green steel poles would appear less visually contrasting with the darker vegetation and hillsides but more visually contrasting with the lighter background sky.	**KOP 2-3** **Powerline Road - EP21** **Covert Green Sim.**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-23d**



Latitude: 35.504861° Longitude: -117.740897°

This image presents a **Visual Simulation** of the use of steel poles that have received a darker Shadow Gray treatment. As shown in the simulation (and similar to the Corten and Covert Green treatments), compared to the proposed light gray galvanized treatment, the dark Shadow Gray steel poles would appear less visually contrasting with the darker vegetation and hillsides but more visually contrasting with the lighter background sky.	**KOP 2-3** **Powerline Road - EP21** **Shadow Gray Sim.**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-23e**



Latitude: 35.367778° Longitude: -117.650451°

This image presents the **Existing View** to the north from **KOP 2-4** on Lexington Avenue in Randsburg. This view captures a portion of the residential landscape along Lexington Avenue backdropped by a portion of Segment 2 as it descends an adjacent ridge and passes in close proximity to the historic mining town. The foreground landscape consists of simple, rural residences, backdropped by a sparsely vegetated, angular to rolling ridge, crossed by a visually prominent utility corridor with multiple power lines.	**KOP 2-4** **Lexington Ave. Randsburg** **Existing View**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-24a**



This image presents a **Visual Simulation** of the Proposed Project that illustrates the replacement of an existing lattice-structure subtransmission line with tubular steel monopoles as viewed from **KOP 2-4** on Lexington Avenue. Although the new poles would be noticeably taller than the existing lattice structures they would replace, their height would not substantially alter Project visibility or prominence in the context of the adjacent utility lines.	**KOP 2-4** **Lexington Ave. Randsburg** **Visual Simulation**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-24b**

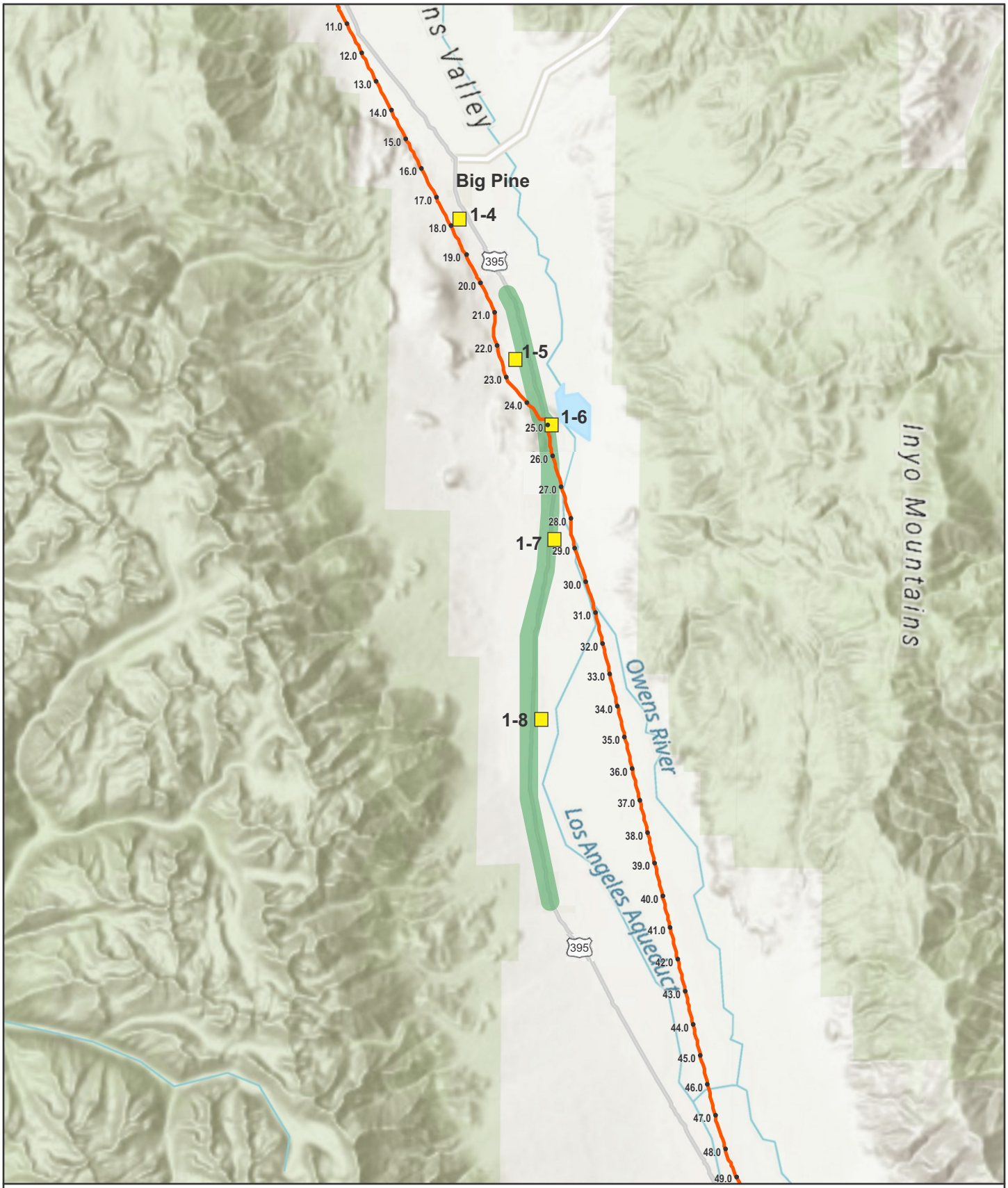


This image presents a **Visual Simulation** of the use of Corten steel poles. As shown in the simulation, compared to the proposed gray galvanized treatment, the darker rust-colored Corten steel poles would appear less visually contrasting with the darker vegetation and hillsides but more visually contrasting with the lighter background sky. As a result, the Corten steel poles would be similarly prominent in the landscape compared to the proposed gray galvanized poles.	**KOP 2-4** **Lexington Ave. Randsburg** **Corten Simulation**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-24c**



Latitude: 34.850913° Longitude: -116.871480°

This image presents the **Existing View** to the east from **KOP 3S-1** on eastbound I-40 near Daggett, approximately 0.26 mile west of the Project's span of I-40. The view captures a portion of Segment 3S within the existing utility corridor that converges on and then spans I-40. The foreground to background rural landscape encompasses a flat valley plain, prominent foreground linear freeway, and a foreground electric utility corridor, all backdropped by the distant angular to horizontal form of the Newberry Mountains.	**KOP 3S-1** **I-40 Near Daggett** **Existing View**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-25a**



Source: https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aacaa

N

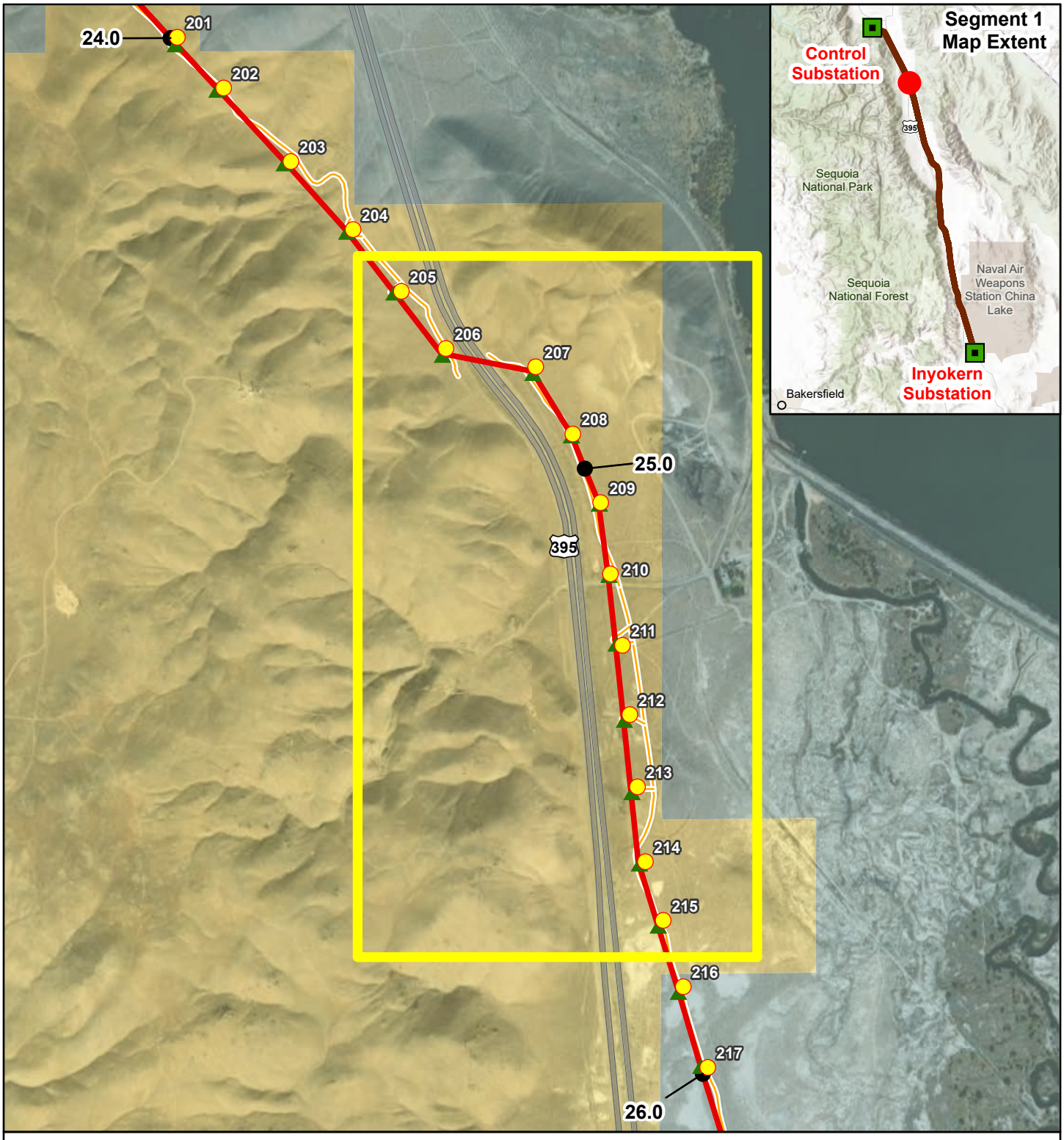
0 5

Miles

- Milepost
- Material Yards
- Ivanpah - Control Project Alignment
- Designated Scenic Highway Segment of US 395

Figure 3.2-25b

Designated Scenic Highway Segment of US 395



Sources: Aspen, 2024; BLM, 2024; ESRI, 2024; SCE, 2024.

Figure 3.2-25c
Scenic Highway Segment Crossed by Proposed Project

Subtransmission Structures
- Proposed New Structure
- Structure to be Removed

Land Management/Ownership
- Bureau of Land Management
- LADWP and Local Government

- Milepost (1.0)
- Segment 1: Control-Haiwee-Inyokern
- Existing Access Road

1:14,400
N
0 1,000 Feet



This image presents a **Visual Simulation** of the Project that illustrates the replacement of the existing wood poles at the span of I-40 with standard gray galvanized steel poles as viewed from **KOP 3S-1** on eastbound I-40 near Daggett. The replacement poles are slightly shorter than the existing wood poles but larger in diameter. The form and line of the new poles are nearly the same as the three-pole wood structures to be removed.	**KOP 3S-1** **I-40 Near Daggett** **Visual Simulation**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-25d**



This image presents the **Existing View** to the southeast from **KOP 1-22,** near Milepost 92 on southbound US 395 just north of East Elna Road. This view shows the existing monopole line that would be replaced by the Proposed Project. The existing line is prominently visible along the east side of US 395. This segment of US 395 is a designated scenic highway (between approximately Milepost 76 in Independence to the south and Milepost 96 north of the Fish Springs Hatchery to the north).	**KOP 1-22** **Southbound US 395** **Existing View**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-26a**



This image presents a **Visual Simulation** of the Proposed Project from **KOP 1-22**, illustrating the replacement of the existing monopole subtransmission line with a new monopole transmission line that would be more visually prominent from US 395.	**KOP 1-22** Southbound US 395 Proposed Project Sim.	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-26b**



Latitude: 36.726252° Longitude: -118.144724°

This image presents the **Existing View** to the east from **KOP 1-7** at the Manzanar Historic Entry. This is the same view as presented in Figure D.2-6A for KOP 1-7. One of the existing lattice structures in the line to be replaced is labeled in the figure. The Proposed Project would be placed in that corridor (approximately one mile away). A more distant corridor (approximately 3.4 miles away) with existing transmission lines is barely discernible in the image. The Manzanar Alternative would be placed in that more distant corridor.	**KOP 1-7** **Existing View** **Manzanar Alternative**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-27a**



Latitude: 36.726252° Longitude: -118.144724°

This image presents a **Visual Simulation** of the Proposed Project along the valley floor to the east, illustrating the replacement of an existing lattice-structure subtransmission line with a new tubular steel pole transmission line, as viewed from **KOP 1-7** at the Manzanar Historic Entry. The replacement galvanized steel monopoles would be visibly taller than the existing lattice structures. This image is the same as that presented in Figure D.2-6B.	**KOP 1-7** **Proposed Project** **Manzanar Alternative**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-27b**



Latitude: 36.726252° Longitude: -118.144724°

This image presents a **Visual Simulation** of the Manzanar Alternative, as viewed from **KOP 1-7.**This simulation illustrates the removal of the existing transmission line (that would occur under the Proposed Project) and the placement of the new TSP line in the more distant transmission line corridor (as shown by the arrow). Although the existing line and Proposed Project would not be visually prominent from KOP 1-7, the Manzanar Alternative would represent a visual improvement and is recommended.	**KOP 1-7** **Manzanar Alternative** **Manzanar Alternative**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-27c**



This image presents the **Existing View** to the southeast from **KOP 1-17** on Fossil Falls Trail. This view to the southeast is toward an existing transmission line corridor east of Fossil Falls and the Proposed Project route. As shown in the image, the existing lattice structure transmission lines, while visible from Fossil Falls, are not visually prominent and are located in a viewing direction away from the primary focus of attention, which is the lava flows to the west and southwest.	**KOP 1-17** **Existing View** **Fossil Falls Alternative**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-28a**



This image presents a **Visual Simulation** of the **Fossil Falls Alternative** **to the southeast** from **KOP 1-17** on Fossil Falls Trail. This simulation illustrates the addition of the Proposed Project to an existing transmission line corridor located to the east of Fossil Falls. As shown in the simulation, and in comparison to the existing view presented in Figure D.2-34A, the Project would not substantially change either the corridor landscape or the structural characteristics and contrast. Nor will it substantially affect views from Fossil Falls.	**KOP 1-17** **Visual Simulation** **Fossil Falls Alternative**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-28b**



Latitude: 35.970339° Longitude: -117.908692°

This image presents the **Existing View** to the southwest from **KOP 1-17** on the Fossil Falls Trail. This is the same view as presented in Figure D.2-13A for KOP 1-17. As shown in the image, the existing subtransmission line corridor, with lattice structures that have weathered to a medium gray, is barely discernible as it passes along the valley plain. The Proposed Project would replace the existing lattice structures with tubular steel monopoles.	**KOP 1-17** **Existing View** **Fossil Falls Alternative**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-28c**



This image presents a **Visual Simulation <u>to the southwest</u>** of the Proposed Projectthat illustrates the replacement of the existing lattice-structure subtransmission line with galvanized tubular steel monopoles as viewed from **KOP 1-17** on Fossil Falls Trail. Although the new poles would be taller than the existing lattice structures, due to distance from the viewpoint and backdrop conditions, the height difference would not alter the overall visibility of the Project in the landscape. This is the same image as presented in Figure D.2-13B.	**KOP 1-17** **Proposed Project Sim.** **Fossil Falls Alternative**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-28d**



This image presents a **Visual Simulation to the southwest** of the **Fossil Falls Alternative** illustrating the removal of the existing lattice structure subtransmission line and the relocation of the proposed tubular steel monopole line (Proposed Project) approximately one mile to the east (out of the frame of view of this image).This alternative would reduce the Project's substantial impact on views from Fossil Falls (a popular recreation destination) and is therefore, recommended. See also Figures D.2-28A and 28B.	**KOP 1-17** **Fossil Falls Sim.** **Fossil Falls Alternative**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 3.2-28e**

3.3. Agriculture and Forestry Resources

This section describes existing environmental conditions and impacts that would result from the Proposed Project on agriculture and forestry resources. Impacts evaluated in this section include the conversion or loss of agricultural land or forest land, or conflicts with agricultural and forestry zoning or land use.

The environmental setting for agriculture and forestry resources is presented in Section 3.3.1 and 3.3.2 and relevant regulations and standards are summarized in Section 3.3.3. Section 3.3.4 describes impacts of the Proposed Project. These impact discussions introduce mitigation measures that would reduce or avoid significant adverse environmental impacts. Section 3.3.5 presents the mitigation monitoring, compliance, and reporting information, and Section 3.3.6 lists references cited in this section. Chapter 4 describes impacts of the alternatives to the Proposed Project. Cumulative impacts for all disciplines are considered in Chapter 5.

One scoping comment related to agriculture was received from Meadowbrook Dairy relating to potential impacts on the dairy's property and agricultural operations located along Segment 1 of the Proposed Project. Specifically, the Proposed Project would involve a new easement west of SCE's existing easement that would put "…towers and transmission lines, further into and across Meadowbrook's Property…" and their placement "…could result in construction and long-term impacts to agricultural land, health and safety, and air quality that must be analyzed in the EIR" (CPUC, 2020). The letter identifies topics that should be addressed in the EIR. The scoping topics that relate to agriculture and forestry resources are summarized as follows (CPUC, 2020):

- Location of the proposed towers and whether they will be within any of Meadowbrook's fields
- Temporary or permanent removal of crops from production
- Impacts on existing irrigation infrastructure, including center-pivot irrigation adjacent to or crossed by the Proposed Project
- Impacts on farming operations and any associated impacts related to a reduction in crop yield
- Mitigation for the loss of agricultural land and crop production

These topics and potential impacts on agricultural resources are addressed in Section 3.3.4.

3.3.1. Environmental Setting – Agricultural Resources

3.3.1.1. Regional Setting

The Proposed Project is located on and adjacent to land that is designated, suitable, and/or actively used for agricultural activities in Inyo County, Kern County, San Bernardino County, as well as the City of Barstow. Agricultural resources addressed in the EIR are described in the subsections below and defined in Table 3.3-1 and shown in Figure 3.3-1a (Prime Farmland, Unique Farmland, and Farmland of Statewide Importance) (at the end of this section). Agricultural resources in the vicinity of the Proposed Project were identified through a review of maps and GIS data from the Department of Conservation's (DOC) Farmland Mapping and Monitoring Program (FMMP), the BLM's RMP, planning documents, and aerial imagery.

Department of Conservation, Farmland Mapping and Monitoring Program

The DOC classifies land according to agricultural suitability through the FMMP based on land uses, irrigation, and soil conditions. Public Resources Code Section 21060.1 defines "agricultural land" as Prime Farmland, Farmland of Statewide Importance, and Unique Farmland ("Farmland"). The FMMP also includes Farmland of Local Importance[1] and Grazing Land categories; however, these categories are not applicable to the CEQA analysis pursuant to Appendix G of the CEQA Guidelines and are therefore not

[1] The Proposed Project is also located within the City of Barstow; however, the Project is not located on lands within the city that are zoned or designated for agricultural use.

discussed further. FMMP Farmland categories applicable to CEQA are defined below (DOC, 2017; DOC, 2015):

- **Prime Farmland.** Farmland with the best combination of physical and chemical features able to sustain long-term agricultural production. Land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.
- **Farmland of Statewide Importance.** Farmland like Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.
- **Unique Farmland.** Farmland of lesser quality soils used to produce the state's leading agricultural crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards, as found in some climatic zones in California. Land must have been cropped at some time during the 4 years prior to the mapping date.

Agricultural Land Uses and Zoning Designated by Local Jurisdictions

Land uses and zoning for agriculture are established by cities and counties independent of the FMMP. Agricultural land use practices and zoning in the project area are established by Inyo County, Kern County, and San Bernardino County.[2] The Inyo County zoning ordinance provides a classification for lands designated as open space by the General Plan to encourage protection of potential agricultural uses. The General Plan also designates lands as Agriculture if lands support agricultural services and production. Kern County designates agricultural districts in the General Plan as Exclusive Agriculture and Limited Agriculture. The Zoning Ordinance classifies agricultural land as Extensive Agriculture and Limited Agriculture. The San Bernardino Countywide Plan classifies land that supports commercial agricultural operations as Agriculture. San Bernardino County has two zoning district and two overlay land use areas that allow for agricultural uses. Other land use and zoning designations in the counties allow for agricultural activities; however, agricultural activities are not the primary use in these areas, therefore, they are not included in the impact discussion. Information on the additional land use and zoning designations that allow agricultural use are provided in Section 3.3.3.3, Local Regulations, Policies, and Standards. The discussion of active agricultural operations below addresses agricultural uses in the project area regardless of land use and zoning designation. Agricultural land uses and zoning designated by Inyo, Kern, and San Bernardino County are shown in Figure 3.3-1a (Prime Farmland, Unique Farmland, and Farmland of Statewide Importance).

Williamson Act Contract Lands

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, enables local governments to enter into contracts with private landowners to restrict specific parcels of land to agricultural or related open-space use for periods of 10 to 20 years. Additional information on the Williamson Act program is provided in Section 3.3.3.2.

Active Agricultural Operations

Agricultural operations, including existing permits or leases, may occur on land that is not FMMP-designated Farmland or subject to local agricultural land use or zoning designations. Active agricultural operations that may be important to the region, but are not within designated agricultural areas, are considered agricultural resources in this EIR. Active agricultural operations include areas where there is evidence of existing agricultural production both within and outside designated Farmland, local land use and zoning,

[2] The Proposed Project is also located within the City of Barstow; however, the Project is not located on lands within the city that are zoned or designated for agricultural use.

or Williamson Act Contract Lands. Active agricultural operations include land subject to an existing permit or lease for grazing or other agricultural uses and sites identified in aerial imagery or during field investigations as areas of agricultural production.

3.3.1.2. Agricultural Resources by Segment

Table 3.3-1 provides a summary of agricultural resources within 500 feet of the Proposed Project, which includes 500 feet from the existing and proposed subtransmission line and contractor staging yards. The locations of FMMP-designated Farmland in each segment, and active agricultural operations in Segment 1, are shown in Figure 3.3-1a (Prime Farmland, Unique Farmland, and Farmland of Statewide Importance) (at the end of this section.

Table 3.3-1. Agricultural Resources within 500 feet of the Proposed Project

Category	Designation	Acres per Segment				Total Acres
		1	2	3N	3S	
FMMP-designated Farmland	Prime Farmland	—	—	—	72	72
	Farmland of Statewide Importance	—	—	—	< 1	< 1
	Unique Farmland	276	—	—	9	285
	FMMP Farmland Total	***276***	***—***	***—***	***81***	***357***
Inyo County Zoning Ordinance/ General Plan Designations for Agricultural Uses	Agriculture (Zoning)	—	—	—	—	—
	Agriculture (General Plan)	890	—	—	—	890
	Inyo County Total	***890***	***—***	***—***	***—***	***890***
Kern County Zoning Ordinance/ General Plan Designations for Agricultural Uses	Extensive Agriculture	—	606	—	—	606
	Limited Agriculture	626	842	—	—	1,468
	Exclusive Agriculture District	—	—	—	—	—
	Limited Agriculture District	—	—	—	—	—
	Kern County Total	***626***	***1,448***	***—***	***—***	***2,074***
San Bernardino Countywide Plan for Agricultural Uses	Agriculture	—	—	—	—	—
	Additional Agriculture Overlay	—	—	—	—	—
	Agricultural Preserve Overlay	—	—	—	—	—
	San Bernardino County Total	***—***	***—***	***119***	***87***	***206***
Williamson Act Contract Lands	n/a	—	—	—	—	—
Active Agricultural Operations	n/a	**573**	**—**	**—**	**—**	**573**

Sources: (DOC, 2018; Inyo County, 2014; Inyo County, 2019; Kern County, 2004; Kern County, 2016; San Bernardino County, 2019)

3.3.2. Environmental Setting – Forestry Resources

3.3.2.1. Regional Setting

The types of forestry resources considered under CEQA are described in Table 3.3-2. Inyo, Kern, and San Bernardino County planning documents were reviewed to identify any areas designated or zoned for forestry (e.g., forest land, timberland, or timberland production). The Sensitive Species and Habitat Report (SCE, 2019) included as Appendix G with the Proponent's Environmental Assessment was reviewed to identify vegetation communities that meet the definition of forest land.

There are no lands zoned as forest land, timberland, or timberland production in Inyo, Kern, or San Bernardino Counties. The Fremont cottonwood forest vegetation community located within the biological survey area may meet the definition of forest land. Fremont cottonwood forest is dominated by Fremont cottonwood, a member of the willow family, which generally contributes more than 50 percent to the

tree canopy in this vegetation community (SCE, 2019). Although, vegetation communities are present that may meet the definition of forest land, no commercial harvesting of forest materials occur in these areas.

Table 3.3-2. Definition of Forestry Resources

Designation	Definition
Forest Land (PRC §12220[g])	Land that can support 10 percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits.
Timberland (PRC §4526)	Land, other than land owned by the federal government and land designated by the State Board of Forestry and Fire Protection (board) as experimental forest land, which is available for, and capable of, growing a crop of trees of a commercial species used to produce lumber and other forest products, including Christmas trees. Commercial species shall be determined by the board on a district basis.
Timberland Production Zone (California Government Code §51104[g])	With respect to the general plans of cities and counties, “timberland preserve zone” means “timberland production zone.” Timber production zones are areas which have been zoned for and are devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, as defined below. "Compatible use" is any use which does not significantly detract from the use of the property for, or inhibit, growing and harvesting timber, and shall include, but not be limited to, any of the following, unless in a specific instance such a use would be contrary to the preceding definition of compatible use: ■ Management for watershed. ■ Management for fish and wildlife habitat or hunting and fishing. ■ A use integrally related to the growing, harvesting and processing of forest products, including but not limited to roads, log landings, and log storage areas. ■ The erection, construction, alteration, or maintenance of gas, electric, water, or communication transmission facilities. ■ Grazing. ■ A residence or other structure necessary for the management of land zoned as timberland production.

Source: (PRC, 2020a; PRC, 2020b; PRC, 2020c)

3.3.2.2. Forestry Resources by Segment

Segment 1: Bishop to Inyokern

Fremont Cottonwood Forest occurs along the Owens River north of Big Pine and along the tributaries to Big Pine Creek, which is a tributary to the Owens River. Approximately 8.4 acres of Fremont Cottonwood Forest is located within 500 feet of the Proposed Project in Segment 1. No other forestry resources are present.

Segment 2: Inyokern to Kramer Junction

No forestry resources occur in Segment 2.

Segment 3N: Kramer Junction to Daggett

No forestry resources occur in Segment 3N.

Segment 3S: Kramer Junction to Barstow to Daggett

No forestry resources occur in Segment 3S.

3.3.3. Applicable Regulations, Policies, and Standards

3.3.3.1. Federal Regulations, Policies, and Standards

Farmland Protection Policy Act

The Agriculture and Food Act of 1981 contained the Farmland Protection Policy Act which is intended to minimize the impact that federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. It assures that federal programs are administered to be compatible with state, local units of government, and private programs and policies to protect farmland to the extent possible. Federal agencies are required to develop and review their policies and procedures to implement the Farmland Protection Policy Act every two years (USDA, 2020).

Federal Land Policy and Management Act

The Federal Land Policy and Management Act of 1976 was passed to establish policy for managing BLM-administered public lands, including the long-term stability and use of BLM-administered public lands by the livestock industry. The FLPMA authorized 10-year grazing permits and required a 2-year notice of cancellation. The FLPMA also directed grazing advisory boards, formed under the Taylor Grazing Act, to guide the BLM in developing allotment management plans and allocating range betterment funds. Grazing policies and standards on BLM-administered lands in the project area are found in the Bishop RMP (Inyo County, 2014).

3.3.3.2. State Regulations, Policies, and Standards

Farmland Mapping and Monitoring Program

The DOC established the FMMP to help assess the location, quantity, and quality of agricultural lands and the conversion of these lands to nonagricultural uses (DOC, 2019) The FMMP uses Natural Resources Conservation Service soil classifications, land inventories, and monitoring criteria to prepare digitized maps of farmland in California. These maps and associated statistics are updated every two years and are used in general plans, regional studies of agricultural land conversion, and in assessing project impacts on Farmland.

California Land Conservation Act (Williamson Act)

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, was enacted to encourage preservation of agricultural and open space lands. The Williamson Act facilitates voluntary agreements through which private landowners enter into 10-year contracts with counties and cities to restrict their land to agricultural and compatible open space uses. In return, restricted parcels are taxed at a lower rate. Contracts are automatically renewed unless the landowner files for nonrenewal or petitions for cancellation. Section 51238 of the Williamson Act indicates that, unless local organizations declare otherwise, the erection, construction, alteration, or maintenance of gas, electric, water, or communication facilities are compatible with Williamson Act contracts. Inyo County does not participate in the Williamson Act program. San Bernardino County and Kern County voluntarily participate in the Williamson Act program.

3.3.3.3. Local Regulations, Policies, and Standards

Pursuant to General Order 131-E, the Proposed Project is not subject to local authority because the CPUC has exclusive jurisdiction over the siting, design and construction of electric power line projects, distribution lines, substations, and electric facilities constructed by public utilities subject to CPUC jurisdiction. Local ordinance policies are presented here only where these requirements are used as the basis for impact analysis.

Owens Valley Land Management Plan

The Owens Valley Land Management Plan (OVLMP) is a resource management guide for Los Angeles Department of Water and Power (LADWP) owned non-urban lands in Inyo County, excluding the Lower Owens River Project area. The Final OVLMP was released in April 2010. The OVLMP provides a framework for implementing management prescriptions through time, monitoring resources, and adaptively managing changed land and water conditions. A primary aspect of the OVLMP is grazing management aimed at implementing sustainable practices, balancing agricultural needs and other resource needs based on the carrying capacity of the land. Grazing management has been implemented through a series of LADWP-administered grazing leases to private parties.

Inyo County General Plan

The Inyo County General Plan (2001, as amended) contains policies intended to protect and promote agricultural pursuits within its jurisdiction. The Land Use Element defines the general distribution and intensity of uses of the land for housing, business, industry, open space, education, public buildings and grounds, and other categories of public and private uses, including agriculture. The Conservation and Open Space Element presents goals, policies, and implementation measures for multiple resources in the County, including agricultural resources. The agricultural goals and policies that are contained within the Inyo County General Plan are listed below:

- **Goal GOV-6:** Preservation of Agricultural Resources
  - ***Policy GOV-6.1:*** It is the policy of the County to protect agricultural land and promote the continuation of agricultural pursuits. The County seeks to ensure all of the following:
    - Those opportunities for agriculture on federal and state land shall be continued, or expanded at levels consistent with historical custom and culture and the protection of equitable property rights, and sound management practices.
    - Federal and state governments shall not unreasonably obstruct agricultural opportunities on lands managed by them.
    - Federal and state land managing agencies coordinate with the County on all matters affecting agriculture on all federal and state managed lands.
    - Land leased from Los Angeles for agriculture be expanded.
- **Goal S-1:** Maintain the productivity of Inyo County's soils
  - ***Policy S-1.1:*** Soil Conservation for Agriculture. Encourage the conservation of agricultural soils to provide a base for agricultural productivity and the County's economy.
- **Goal AG-1:** Provide and maintain a viable and diverse agricultural industry in Inyo County
  - ***Policy AG-1.2:*** Continue Agricultural Production. Support and encourage continued agricultural production activities in the County.
  - ***Policy AG-1.4:*** Minimize Land Conflict. Preserve and protect agricultural lands from encroachment by incompatible land uses.
  - ***Policy AG-1.6:*** Public Lands for Agriculture. Support the continued use and expansion of public lands for agricultural operations.

Inyo County Zoning Ordinance

Inyo County Code Title 18 contains the County's Zoning Ordinance, which provides the regulations and laws that define how properties subject to County jurisdiction can be used. The Agriculture zoning category allows for intensive agriculture operations. The Open Space zoning allows agricultural and livestock

uses. The Rural Residential zoning allows agricultural uses of orchards, and vegetable and field crops. The Commercial Recreation zoning allows agricultural and grazing, and the Light Industrial zoning allows agriculture uses of any kind, excluding feedlots, poultry ranches, or slaughterhouses.

Kern County General Plan

The Kern County General Plan states that agriculture is vital to the future of Kern County and sets goals to protect important agricultural lands for future use and prevent the conversion of prime agricultural lands to other uses (e.g., industrial or residential). The Kern County General Plan includes three designations for agricultural land as follows:

- 8.1 Intensive Agriculture (minimum parcel size 20 acres gross): lands devoted to the production of irrigated crops or having potential for such use;
- 8.2 Resource Reserve (minimum parcel size is 20 acres gross, except to a Williamson Act Contract/ Farmland Security Zone Contract, in which case the minimum parcel size shall be 80 acres gross): lands devoted to areas of mixed natural resource characteristics including rangeland, woodland, and wildlife habitat which occur in an established Kern County water district; and
- 8.3 Extensive Agriculture (minimum parcel size 20 acres gross, except lands subject to a Williamson Act contract/Farmland Security Zone contract, in which case the minimum parcel size shall be 80 acres gross): lands devoted to uses involving large amounts of land with relatively low value-per-acre yields, such as livestock grazing, dryland farming, and woodlands.

Kern County Zoning Ordinance

The Kern County Zoning Ordinance designates Agricultural Districts as Exclusive Agriculture or Limited Agriculture Districts. The purpose of the Exclusive Agriculture District is to designate areas suitable for agricultural uses and to prevent the encroachment of incompatible uses onto agricultural lands and the premature conversion of such lands to nonagricultural uses. Uses in the Exclusive Agriculture District are limited primarily to agricultural uses and other activities compatible with agricultural uses. The purpose of the Limited Agriculture District is to designate areas suitable for a combination of estate-type residential development, agricultural uses, and other compatible uses.

San Bernardino General Plan

The Conservation Element of the County of San Bernardino 2007 General Plan contains the following goals and policies for agricultural resources:

- **GOAL CO 6:** The County will balance the productivity and conservation of soil resources.
- **Policy CO 6.1:** Protect prime agricultural lands from the adverse effects of urban encroachment, particularly increased erosion and sedimentation, trespass, and non-agricultural land development.
- **Policy CO 6.2:** The County will allow the development of areas of prime agricultural lands supporting commercially valuable agriculture to urban intensity when it can be demonstrated that there is no long-term viability of the agricultural uses due to encroaching urbanization, creating incompatible land uses in close proximity to each other.
- **Policy CO 6.3:** Preservation of prime and statewide important soils types, as well as areas exhibiting viable agricultural operations will be considered as an integral portion of the Open Space element when reviewing development proposals.
- **Policy CO 6.4:** Provide and maintain a viable and diverse agricultural industry in San Bernardino County. The County is in the process of updating its General Plan and preparing the San Bernardino Countywide Plan, including the associated Policy Plan, that would replace it. The 2019 draft contains additional

goals and policies regarding the conservation and protection of agricultural resources in the County, including the following:

- **GOAL NR-7:** Agriculture and Soils: The ability of property owners, farmers, and ranchers to conduct sustainable and economically viable agricultural operations.
- **Policy NR-7.1:** Protection of agricultural land: To protect economically viable and productive agricultural lands from the adverse effects of urban encroachment, particularly increased erosion and sedimentation, trespass, and non-agricultural land development.
- **Policy NR-7.2:** Preservation of important farmlands: To require project applicants seeking to develop 20 or more acres of farmland (classified as prime, of statewide importance, or unique farmland) to non-agricultural uses to prepare an agricultural resource evaluation prior to project approval. The evaluation shall use generally accepted methodologies to identify the potentially significant impact of the loss of agricultural land as well as the economic viability and sustainability of future agricultural use of the property, including long-term sustainability and economic viability of water resources. If the conversion is deemed significant, the County shall require mitigation at a 1:1 ratio of converted to preserved acreage through conservation easements, payment of its valuation equivalent if a fee mitigation program is established, or inclusion in a regional agricultural preservation program.
- **Policy NR-7.3:** Conservation and preservation incentives: To support programs and policies that provide tax and economic incentives to conserve existing productive agricultural lands or preserve farmland classified as prime, of statewide importance, unique, or of local importance. We [San Bernardino County] support landowners in establishing new and maintaining existing California Land Conservation (Williamson Act) contracts.
- **Policy NR-7.4:** Economic diversity of farm operations: To encourage farm operations to strengthen their economic viability through diversifying potential sources of farm income and activity, including value added products, agricultural tourism, roadside stands, organic farming, and farmers markets.
- **Policy NR-7.6:** Sustainable grazing practices: To require all grazing on open rangelands to be compatible with the conservation of threatened and endangered species.

San Bernardino County Development Code

The County has two zoning districts designated for agricultural use, as well as two overlays that allow agricultural use in areas not explicitly zoned for agriculture. Overlays provide standards that apply to proposed development in addition to the standards and regulations of the primary land use zoning district. The districts and overlays that provide for agricultural use and preservation include the following:

- **Agriculture.** The Agriculture zoning district provides sites for commercial agricultural operations, agriculture support services, rural residential uses and similar and compatible uses. Open space and recreation uses may occur on non-farmed lands within this district.
- **Floodway.** The Floodway zoning district provides sites for animal keeping, grazing, crop production, and similar and compatible uses. This category is not included in the impact discussion because its primary use is not intended for agriculture.
- **Additional Agriculture Overlay.** The Additional Agriculture Overlay is intended to create, preserve, and improve areas for small-scale and medium-scale agricultural uses utilizing productive agricultural lands for raising, some processing, and the sale of plant crops, animals, or their primary products. It is an overlay where agricultural uses exist compatibly with a variety of rural residential lifestyles.
- **Agricultural Preserve Overlay.** The Agricultural Preserve Overlay identifies properties within an established agricultural preserve. The properties may be subject to a Land Conservation Contract executed between the landowner and the County Board of Supervisors. These agreements offer tax advantages

to the landowner and include an enumerated list of the allowed uses for the commercial production of plant and animal products that have been found to be compatible with agriculture. Because the preservation of agricultural land uses is essential to the economic well-being of the County, the Agricultural Preserve Overlay is intended to protect vital agricultural uses by limiting allowed land uses to those that are compatible and supportive of agriculture and related uses and/or agricultural by-products.

3.3.4. Environmental Impacts of the Proposed Project

3.3.4.1. Impact Analysis Approach

The impact analysis includes an assessment of whether the Proposed Project would convert or result in the loss of agriculture or forestry resources, as described in Section 3.3.1.1 (agricultural resources) and Table 3.3-2 (Definition of Forestry Resources), and if so, how much loss or conversion would occur. Conversion and loss of agriculture and forestry resources is discussed in terms of the surface area that would be permanently occupied by project features or otherwise modified in a way that would prevent agricultural or forestry use. The impact analysis also addresses potential conflicts with existing land use or zoning for agriculture or forestry resources, and the potential for substantially interfering with or converting land associated with an active agricultural operation to a non-agricultural use.

SCE did not propose Applicant Proposed Measures (APMs) related to agriculture or forestry, and no APMs relevant to other issue areas are addressed in this section.

3.3.4.2. Impact Significance Criteria

Significance Criteria

The significance criteria listed below are based on Appendix G of the CEQA Guidelines, with the exception of Impact AF-6, which is included to address potential impacts on active agricultural operations that may occur outside of FMMP-designated Farmland or land use and zoning for agriculture. An impact on agriculture and forestry resources would be considered significant, and mitigation would be required if construction or operation and maintenance of the project would:

- **AF-1:** 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 nonagricultural use.
- **AF-2:** Conflict with existing zoning for agricultural use or a Williamson Act contract.
- **AF-3:** Conflict with existing zoning for, or cause rezoning of, forest land (as defined in PRC Section 12220(g)), timberland (as defined in PRC Section 4526), or timberland zoned Timberland Production (as defined in Government Code Section 51104 (g)).
- **AF-4:** Result in the loss of forest land or conversion of forest land to non-forest use.
- **AF-5:** Involve other changes in the existing environment that could result in conversion of Farmland to nonagricultural use or conversion of forest land to non-forest use.
- **AF-6:** Substantially interfere with active agricultural operations, or convert land used for active agricultural operations to an incompatible use.

3.3.4.3. Impacts and Mitigation Measures

The Cal City Options defined in Section 2.1.1 and illustrated in Figure 2-2 would have impacts no different from those defined for Impacts AF-1 through AF-6, because the extent of ground disturbance required for the Proposed Project would be the same as that required for any of the Cal City Options. No agricultural land would be affected.

Impact AF-1: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural use.

Construction

LESS THAN SIGNIFICANT. The Proposed Project would involve rebuilding and modifying portions of a 262-mile-long existing subtransmission line. Existing and proposed structures, construction work areas, and access roads in Segments 1 and 3S would be located within and adjacent to FMMP-designated Farmland, including Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Construction activities would result in approximately 4.5 acres of temporary ground disturbance within FMMP-designated Unique Farmland as shown in Figure 3.3-2a through Figure 3.3-2d (Farmland and Active Agricultural Operations in the Proposed Project Area, Inyokern Agricultural Area) and Figure 3.3-3a though Figure 3.3-3b (Farmland and Active Agricultural Operations in the Proposed Project Area, Barstow Agricultural Area West).

Temporary ground disturbance may result in the loss of small amounts of topsoil; however, the majority of topsoil in construction work areas would not be disturbed during construction and construction work areas would be available for agricultural use after the construction work is complete. Temporary construction-related ground disturbance would not result in the conversion of Farmland to non-agricultural uses. Impacts would be less than significant.

Operations and Maintenance

LESS THAN SIGNIFICANT. The Proposed Project would remove four existing structures (steel lattice towers) and install three new structures (light weight steel monopoles) within FMMP-designated Unique Farmland located in Segment 1. The rebuilt subtransmission line in Segment 1 would be parallel to the existing subtransmission line (approximately 50 feet west). The area of ground disturbance required for the new structure would be slightly smaller than the existing structure due to the reduced diameter of a steel monopole compared to the wider base required for the four feet of a lattice tower. New transmission access and spur roads in Unique Farmland in Segment 1 would be installed where necessary along the adjusted alignment. The new structures would have a diameter footprint of up to 6 feet and would require vegetation clearance between 10 and 50 feet around the structures.[3] The Proposed Project would convert between approximately 200 and 2,500 square feet of Unique Farmland in Segment 1 to non-agricultural use where new structures are installed. The Proposed Project would also make approximately the same or more square footage of Farmland available where existing structures are removed, which would offset the impacts from the new structures. Impacts would be less than significant.

Impact AF-2: Conflict with existing zoning for agricultural use or a Williamson Act contract.

LESS THAN SIGNIFICANT. The existing subtransmission line in Segments 1 and 2 would be rebuilt parallel to the existing line (approximately 50 feet west) within areas where existing agricultural land use and zoning designations are present. Existing structures would be replaced with new taller structures, which would result in a net reduction of overall structures needed to support the subtransmission line. The realigned subtransmission line would be installed within the same types of land use and zoning designations for agricultural uses as the existing subtransmission line. The new alignment and structure locations could impact different properties at different locations than the existing transmission line given the change in structure locations; however, the Proposed Project alignment would not result in any changes to land use or zoning designations, or any new conflicts with land use or zoning designations for agricultural uses because agricultural activities would be able to continue on properties zoned agriculture within the

[3] A 10-foot radial clearance around non-exempt poles (as defined by California Code of Regulations Title 14, Article 4) and a 25 to 50-foot radial clearance around non-exempt towers (as defined by California Code of Regulations Title 14, Article 4) are maintained in accordance with Public Resource Code 4292 (SCE, 2020).

Proposed Project alignment. Impacts would be less than significant. Refer to Impact AF-6 for a discussion regarding impacts on existing agricultural operations.

The Proposed Project would have no impact on lands under Williamson Act contract because no lands subject to Williamson Act contracts occur in the project area.

Impact AF-3: Conflict with existing zoning for, or cause rezoning of, forest land, timberland, or a Timberland Production Zone.

NO IMPACT. There are no lands zoned as forest land, timberland, or Timberland Production Zones in the Proposed Project area. Therefore, the Proposed Project would not conflict with the use of lands zoned for forest land, timberland, or a Timberland Production Zone during construction. No impacts would occur.

Impact AF-4: Result in the loss of forest land or conversion of forest land to non-forest use.

Construction

LESS THAN SIGNIFICANT. Construction of the Proposed Project would disturb approximately 4.6 acres of Fremont Cottonwood Forest where vegetation is cleared from access roads and temporary work areas along the subtransmission line in Segment 1 (refer to Section 3.5, Biological Resources, for additional information on Fremont cottonwood forest impacts) based on the preliminary engineering, the actual disturbance may be less as the trees may not need to be removed along the access roads and work areas and may just be trimmed or avoided entirely during construction. No commercial harvesting of forest materials occurs in the area and Fremont cottonwood forest is a riparian community that is not subject to commercial logging. Construction would not therefore result in the loss or conversion of forest land to a non-forest use. Impacts would be less than significant.

Operations and Maintenance

LESS THAN SIGNIFICANT. The new subtransmission line in Segment 1 would be rebuilt parallel to the existing subtransmission line and then the existing subtransmission line would be removed. Both the existing and new alignment of the subtransmission line pass through Fremont cottonwood forest for approximately 0.3 mile. Each have only one support structure within the vegetation community. Vegetation clearance is maintained along the existing subtransmission line in accordance with CPUC General Order 95, and the same ongoing vegetation clearance would be required along the new line.

After the new line is energized, the existing line would be removed, and vegetation clearance would shift east along the new line. Vegetation where the existing line is removed would be allowed to be reestab-lished. The ongoing vegetation management required for the Proposed Project would permanently impact forest land where the new subtransmission line is realigned approximately 50 feet to the west for a distance of approximately 0.3 mile in Fremont Cottonwood Forest (affecting up to approximately 1.8 acres). Permanently removing this amount of forest vegetation would not result in the loss or conversion of forest land to a non-forest use because the Freemont cottonwood forest is not used for commercial harvesting of forest materials. Impacts would be less than significant.

Impact AF-5: Involve other changes in the existing environment that could result in conversion of Farmland to nonagricultural use or forest land to non-forest use.

NO IMPACT. Impacts on Farmland and forest land are discussed under Impact AF-1 and Impact AF-4, respectively. Impacts on active agricultural operations are discussed under Impact AF-6. The Proposed Project would not involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to nonagricultural use or forest land to non-forest use. No impact would occur.

Impact AF-6: Substantially interfere with active agricultural operations, or convert land used for active agricultural operations to an incompatible use

Construction

LESS THAN SIGNIFICANT WITH MITIGATION. Construction of the Proposed Project would require the use of access roads and temporary work areas along the existing and new subtransmission alignment where active agricultural operations occur in Segment 1, south of Pearsonville. The active agricultural operations in this area include Meadowbrook Dairy and are comprised of five circular fields where alfalfa is grown using center-pivot irrigation systems[4] that are adjacent to the existing subtransmission line. The locations of proposed access roads and work area boundaries in Segment 1 are identified on detailed maps provided in Appendix 1 (Detailed Project Maps), some of which overlap with Meadowbrook Dairy's properties and alfalfa fields, as defined in the dairy's scoping comments. Areas where crops are located would be avoided to the extent possible; however, approximately 1 acre of field crops could be impacted where temporary construction work areas are located. Crops that may be present within the minimum workspace needed to construct the Project would be crushed or cleared during the construction period. In addition, operating heavy equipment in active agricultural areas has the potential to inadvertently damage irrigation infrastructure (i.e., water lines, wells, pumps, ditches, drains, etc.). Damaging crops or irrigation infrastructure has the potential to substantially interfere with active agricultural operations, which would be a significant impact.

Mitigation Measure AF-6a (Minimize Construction Impacts on Active Agricultural Operations; full text below) would be implemented to address the potential for direct impacts on crops and irrigation infrastructure from construction activities. Mitigation Measure AF-6a requires SCE to identify crops and irrigation infrastructure where construction access roads and work areas are located within active agricultural areas, and to avoid them to the extent possible. SCE would be required to coordinate the timing of overhead conductor installation activities with farm operators to reduce the potential for disrupting the watering schedule. SCE would also be required to compensate owners for crops that may be impacted by construction activities, as well as repair or replace any irrigation infrastructure that is damaged by construction activities. Impacts from construction of the Proposed Project on active agricultural operations would be less than significant with implementation of Mitigation Measure AF-6a.

Construction of the Proposed Project would involve installing new conductor that would span active agricultural operations that utilize moving center-pivot irrigation systems in Segment 1. Conductor installation in the vicinity of the farms would occur over a few days. During active conductor installation over the areas containing center-pivot irrigation systems, the center-pivot irrigation system could not be operated. Depending on the time of year, conflicting with the watering schedule has the potential to impact crop health and yield due to the seasonally hot climate in the region which has the potential to result in significant impacts. Mitigation Measure AF-6a would be implemented to reduce the potential disruption to watering schedules by requiring advance notification and compensation for alternative watering methods, if necessary, or any crop loss.

Operations and Maintenance

LESS THAN SIGNIFICANT WITH MITIGATION. Structures for the existing subtransmission line in Segment 1 and suspended conductor are positioned at the eastern edges of five circular crop fields located south of Pearsonville, associated with the Meadowbrook Dairy; no existing structures are positioned within the fields. The rebuilt subtransmission line would be installed parallel to the existing line approximately 50

[4] Center pivot irrigation systems include a series of towers on wheels with sprinklers connected by a long straight water pipe (typically 0.25 mile in length, such as those in the project vicinity). Water is fed into the pipe and released through the sprinklers from one stationary end, while the opposite end rotates in a circular pattern around the field by motorized wheels. Typically, the irrigation towers have a minimum ground clearance of 9 feet and can reach heights of greater than approximately 20 feet; however, the heights vary by manufacturer.

feet to the west and close the fields. The new alignment would span the eastern boundaries of all five fields. New structures for the rebuilt subtransmission line would be installed between the circular fields; no new structures would be installed within areas where the center-pivot irrigation systems operate. The locations of the existing and rebuilt subtransmission line that would span the agricultural fields are shown on the detailed maps provided in Appendix 1 (Segment 1 Detailed Project Maps, Sheet 24 of 25).

The Proposed Project has the potential to conflict with the irrigation infrastructure associated with active agricultural operations located in Segment 1. The rebuilt line would be installed closer to the fields, and the aboveground and rotating irrigation systems. If the new conductor is not suspended high enough above the fields and irrigation system, the subtransmission line could cause induced current in metallic objects near the line, such as irrigation pipelines. Induced current from the relocated subtransmission line could result in corrosion of the metallic irrigation infrastructure or cause a potential shock hazard. The potential for induced current on the irrigation infrastructure and potential shock hazard would result in significant impacts. Mitigation Measure AF-6b (Avoid Operational Conflicts with Existing Agricultural Irrigation; full text below) and Mitigation Measure HH-8a (Implement grounding measures to avoid shocks, see Section 3.11, Hazards and Hazardous Materials) require SCE to ensure the relocated subtransmission line does not result in induced current that could cause corrosion or shock hazards. The impact would be less than significant with mitigation.

The project also has the potential to result in conflicts with operation of the existing irrigation system by affecting movement of the irrigation system and ultimately convert the outer portions of the field to an incompatible use. General Order 95 defines minimum clearance requirements from electrical equipment that utility operators must maintain, including those for moving agricultural equipment. Due to compliance with General Order 95, the Proposed Project would not conflict with existing agricultural irrigation systems. Impacts on active agricultural operations would be less than significant with implementation of Mitigation Measures AF-6b (Avoid Operational Conflicts with Existing Agricultural Irrigation) and HH-8a (Implement ground measures to avoid shocks).

Mitigation Measures for Impact AF-6

AF-6a **Minimize Construction Impacts on Active Agricultural Operations.** SCE shall identify areas where crops and irrigation equipment (i.e., irrigation lines, wells, pumps, ditches, and drains) are located within and immediately adjacent to access roads, construction work areas, and overhead conductor stringing areas at least 60 days prior to construction.

Direct impacts to crops shall be avoided to the extent possible. If direct impacts to crops cannot be avoided, then SCE shall notify the owner in advance and, within 90 days following project impacts on crops, SCE shall provide compensation for crop loss in the affected area. Topsoil where crops are impacted shall be preserved in place or stockpiled nearby and replaced following construction. Irrigation infrastructure shall be clearly marked for avoidance, and if necessary, protected with temporary materials (i.e., steel plates, blankets, etc.) to prevent inadvertent damage during construction. Any inadvertent damage to irrigation infrastructure shall be repaired to pre-construction conditions, or compensation shall be provided to the owner for the damages.

SCE shall coordinate the timing of conductor installation activities over farms with farm operators to communicate safety considerations and reduce the potential for disrupting watering schedules and indirectly impacting crops. SCE shall schedule conductor installation over farms to minimize impacts to the watering schedule to the extent possible. If conductor stringing conflicts with critical watering periods and result in indirect crop loss, SCE shall provide compensation for either (a) alternative watering methods, if necessary, during the conductor stringing period or (b) crop loss as a result of project activities that cannot be avoided.

AF-6b **Avoid Operational Conflicts with Existing Agricultural Irrigation.** At least 60 days before the start of construction, SCE shall identify the locations of agricultural irrigation infrastructure along the rebuilt subtransmission line and ensure any potential conflicts are avoided. SCE shall ensure that there is adequate clearance between the irrigation equipment and SCE's electrical equipment, or alternatively, that the irrigation equipment would be adequately protected, such as but not limited to the installation of grounding equipment. This conflict avoidance shall be documented in a memorandum submitted to the CPUC at least 30 days before construction.

HH-7a **Implement grounding measures to avoid shocks** (see Section 3.11, Hazards and Hazardous Materials).

3.3.5. Mitigation Monitoring, Compliance, and Reporting

Table 3.3-3 presents the mitigation monitoring, compliance, and reporting information for agriculture. The full text of the mitigation measures is presented in Section 3.3.4.3.

Table 3.3-3. Mitigation Monitoring Program – Agriculture and Forestry

Mitigation Component	Text or Description
Mitigation Measure AF-6a	**Minimize Construction Impacts on Active Agricultural Operations.**
Location	Areas where active agricultural operations could be affected by Project construction or operation
Monitoring / Reporting Action	CPUC to ensure that SCE coordinates with agricultural operators as defined
Effectiveness Criteria	Agricultural operators are able to coordinate with SCE to minimize effects
Responsible Agency	CPUC
Timing	60 days prior to start of construction
Mitigation Measure AF-6b	**Avoid Operational Conflicts with Existing Agricultural Irrigation.**
Location	Areas where active agricultural operations could be affected by Project construction or operation
Monitoring / Reporting Action	CPUC to ensure that SCE identifies locations of agricultural irrigation as defined
Effectiveness Criteria	SCE documents protection of irrigation equipment
Responsible Agency	CPUC
Timing	60 days prior to start of construction

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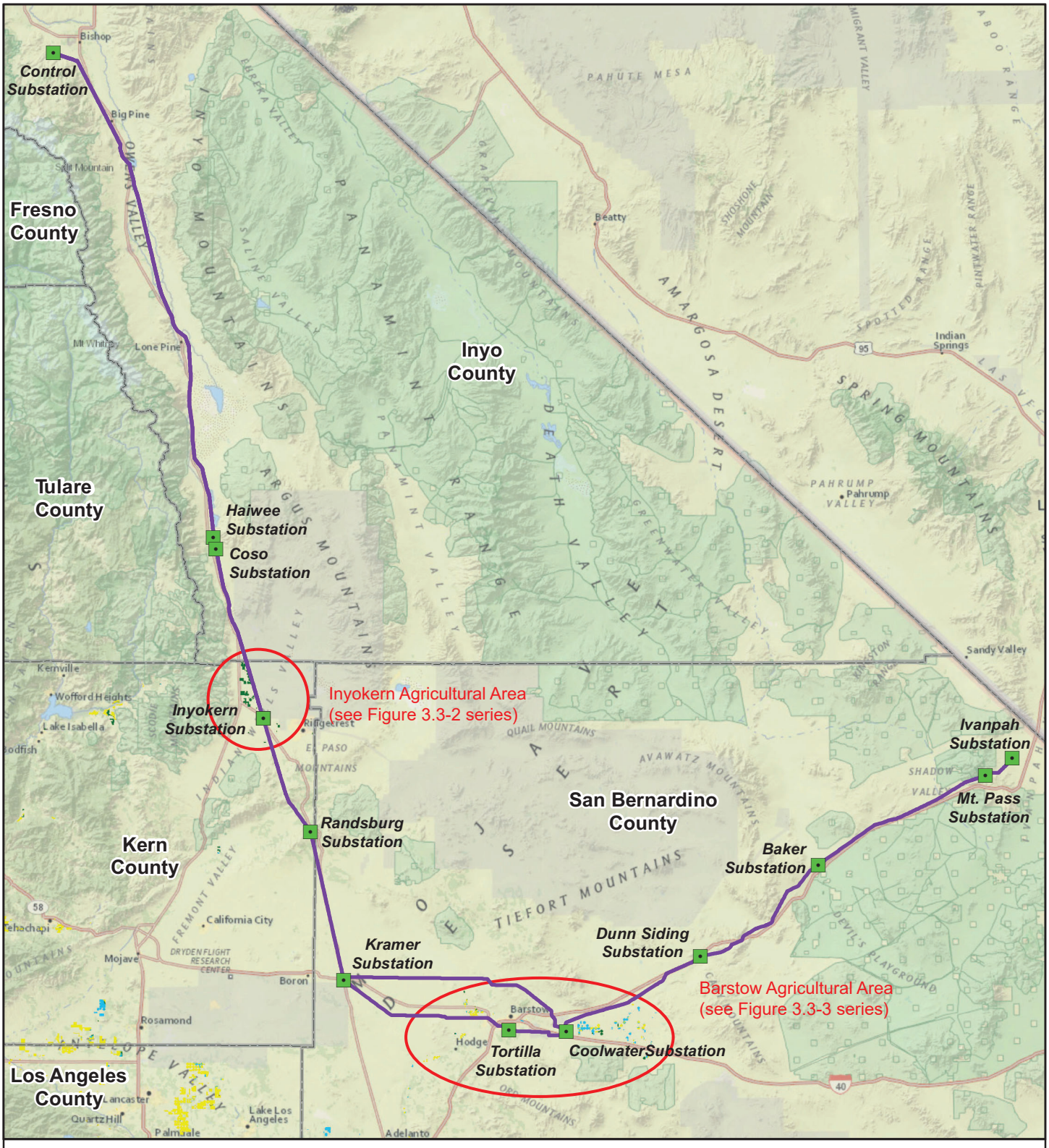


Legend

- Substation
- IC Project Alignment
- County

Farmland Categories

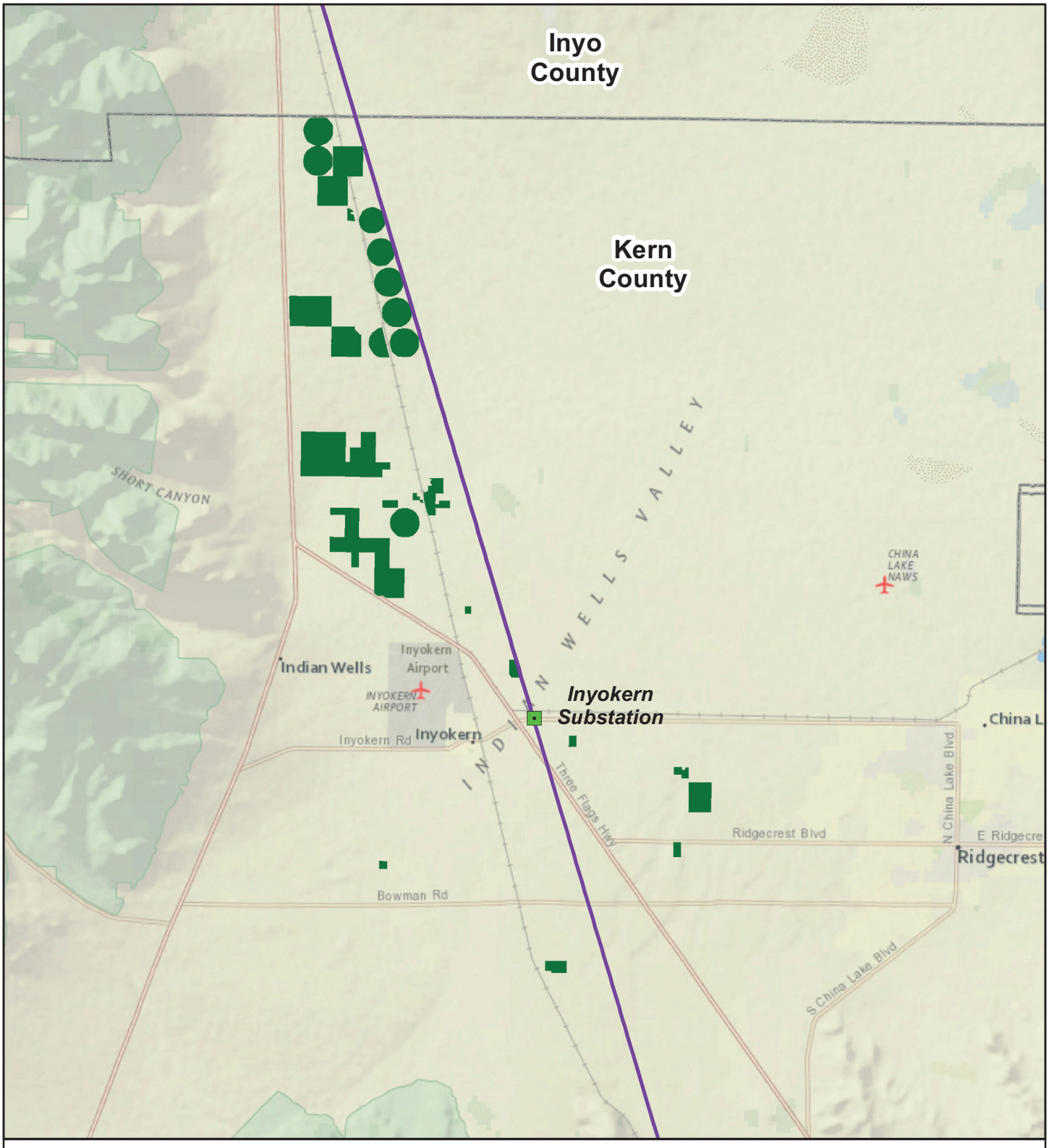
- Prime Farmland
- Farmland of Statewide Importance
- Unique Farmland

NOTES:
(1) Farmland source: *ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/2016/*
(2) No Farmland data available for Inyo County

Figure 3.3-1a

Prime Farmland, Unique Farmland, and Farmland of Statewide Importance

Source: SCE, 2019.

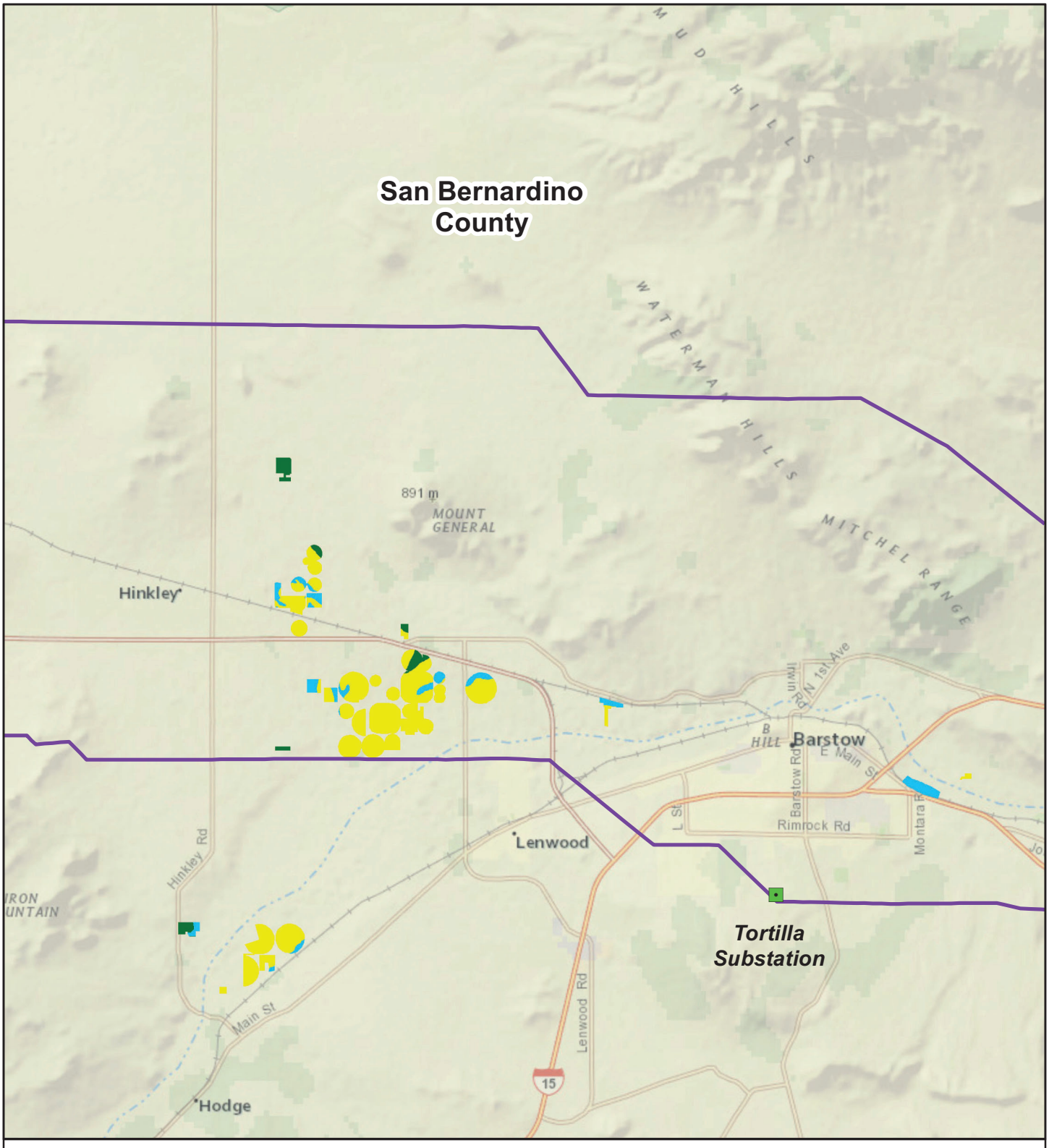


NOTES:
(1) Farmland source:
ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/2016/
(2) No Farmland data available for Inyo County

Figure 3.3-1b

Inyokern Agricultural Area: Unique Farmland

Source: SCE, 2019.

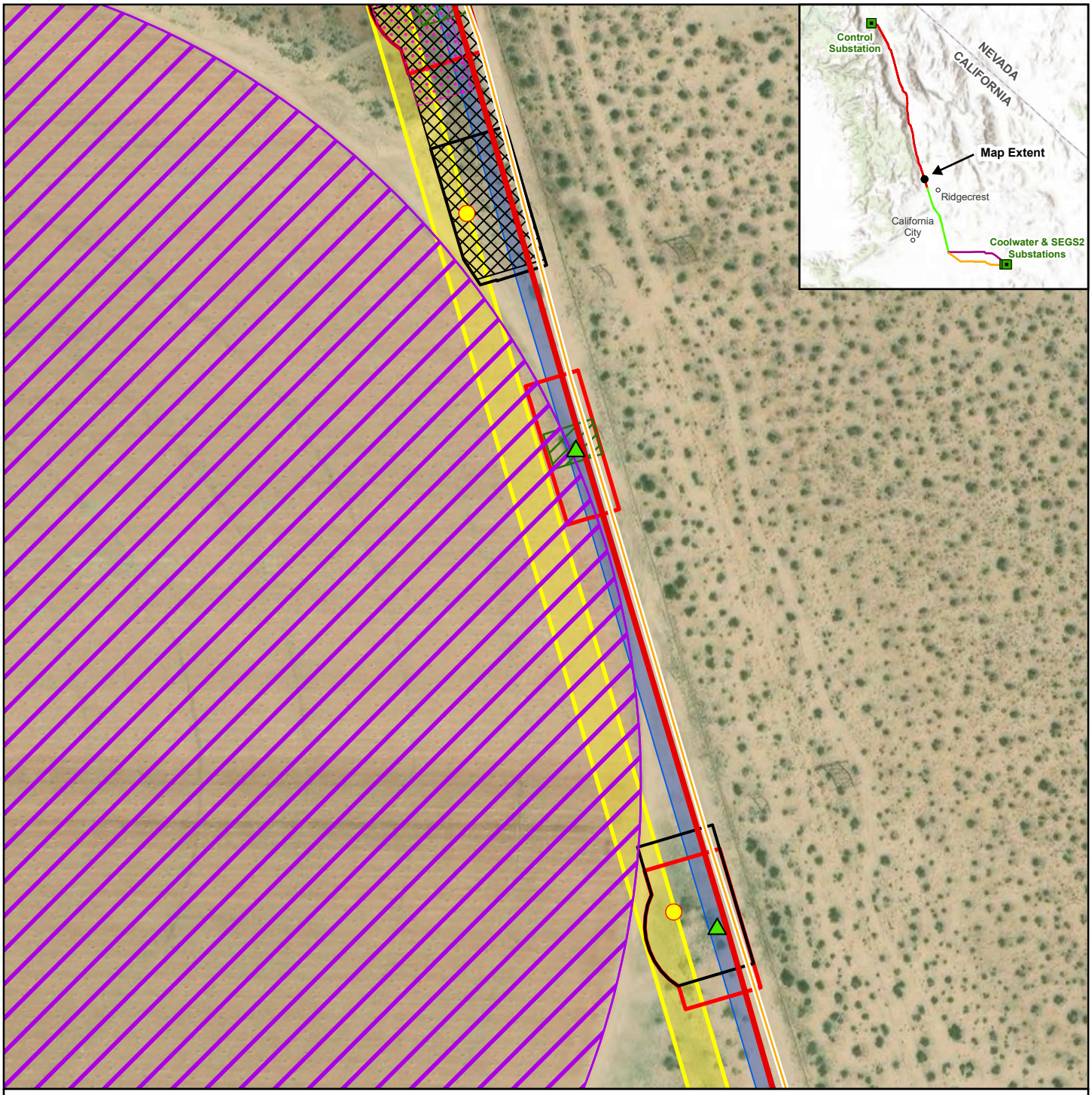


NOTES:
(1) Farmland source:
ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/2016/
(2) No Farmland data available for Inyo County

Figure 3.3-1c

Barstow Agricultural Area West: Designated Farmland

Source: SCE, 2019.



Source: Aspen, 2024; ESRI, 2024; SCE, 2024.

Figure 3.3-2a

Farmland and Active Agricultural Operations in the Proposed Project Area, Inyokern Agricultural Area

Subtransmission Structures
- Proposed New Structure
- Structure to be Removed

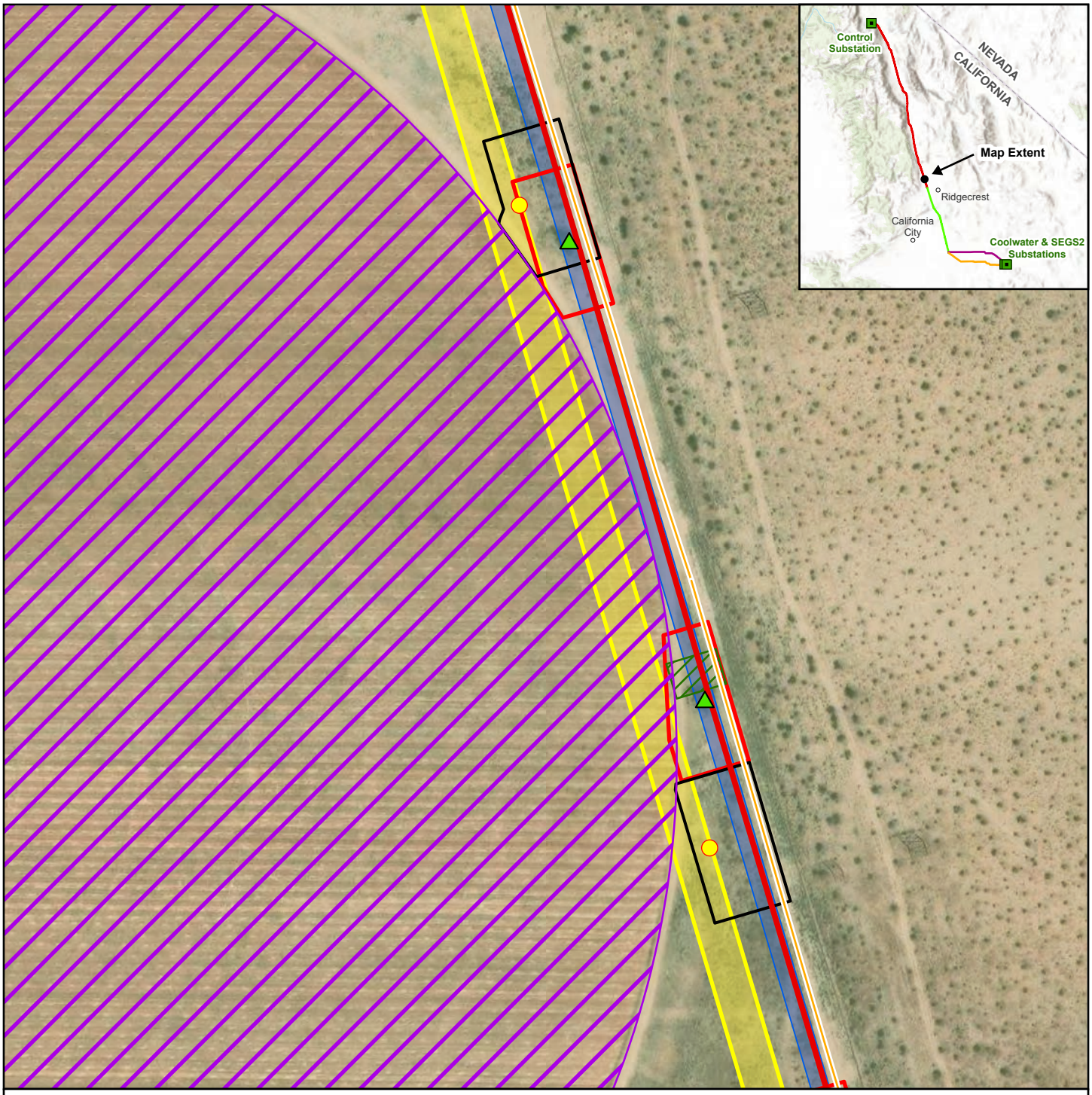
Roads
- Existing Access Road

Construction Areas
- Demolition Site
- General Disturbance Area
- Pull Site
- Splice Site
- Structure Work Area

- Segment 1: Control-Haiwee-Inyokern
- Existing ROW
- New ROW
- Agricultural Area

1:2,400

N 0 200 feet



Source: Aspen, 2024;
ESRI, 2024; SCE, 2024.

Figure 3.3-2b

Farmland and Active Agricultural Operations in the Proposed Project Area, Inyokern Agricultural Area

Subtransmission Structures
- Proposed New Structure
- Structure to be Removed

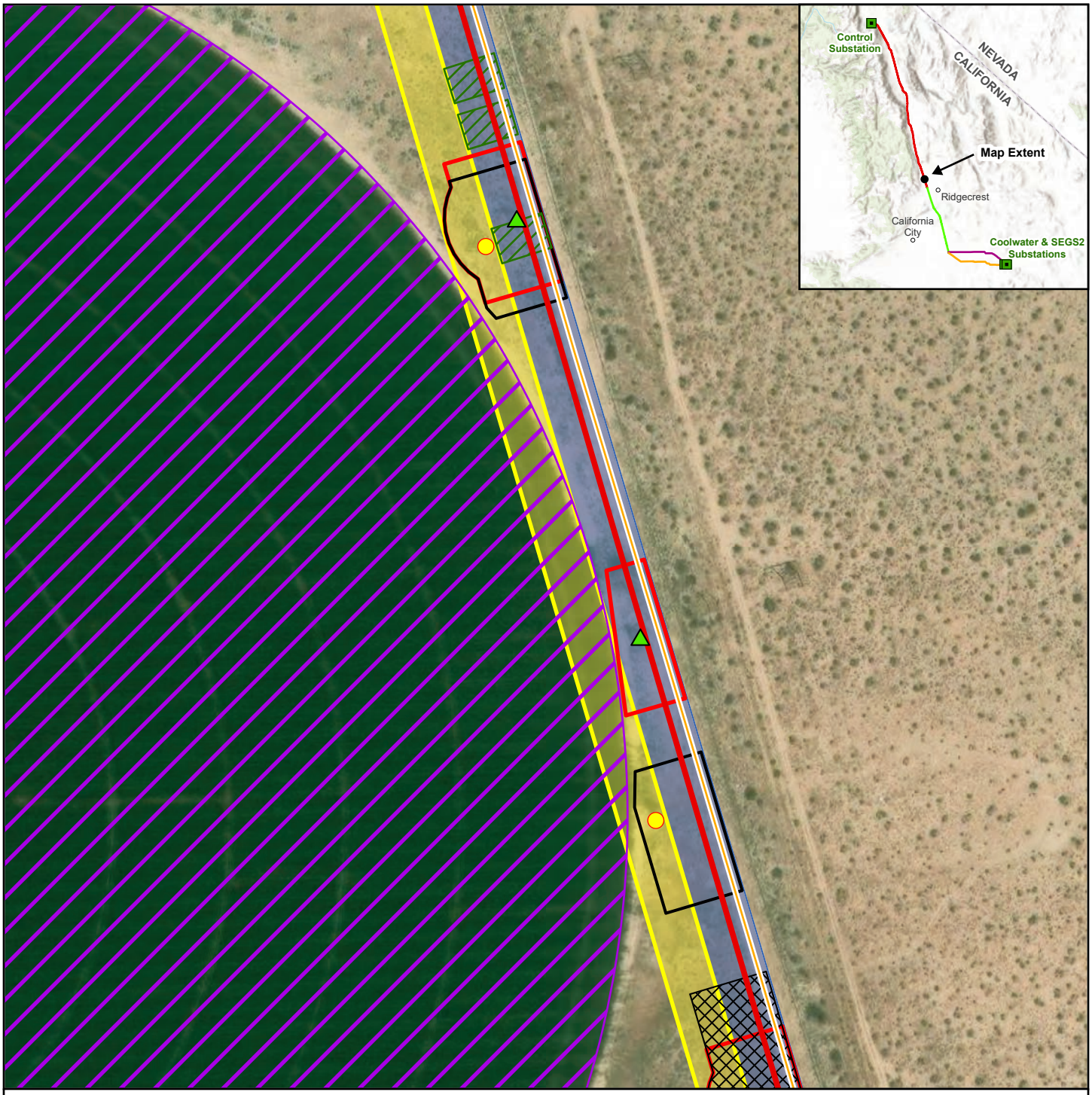
Roads
- Existing Access Road

Construction Areas
- Demolition Site
- General Disturbance Area
- Structure Work Area

- Segment 1: Control-Haiwee-Inyokern
- Existing ROW
- New ROW
- Agricultural Area

1:2,400

N 0 200 feet



Source: Aspen, 2024; ESRI, 2024; SCE, 2024.

Figure 3.3-2c

Farmland and Active Agricultural Operations in the Proposed Project Area, Inyokern Agricultural Area

Subtransmission Structures
- Proposed New Structure
- Structure to be Removed

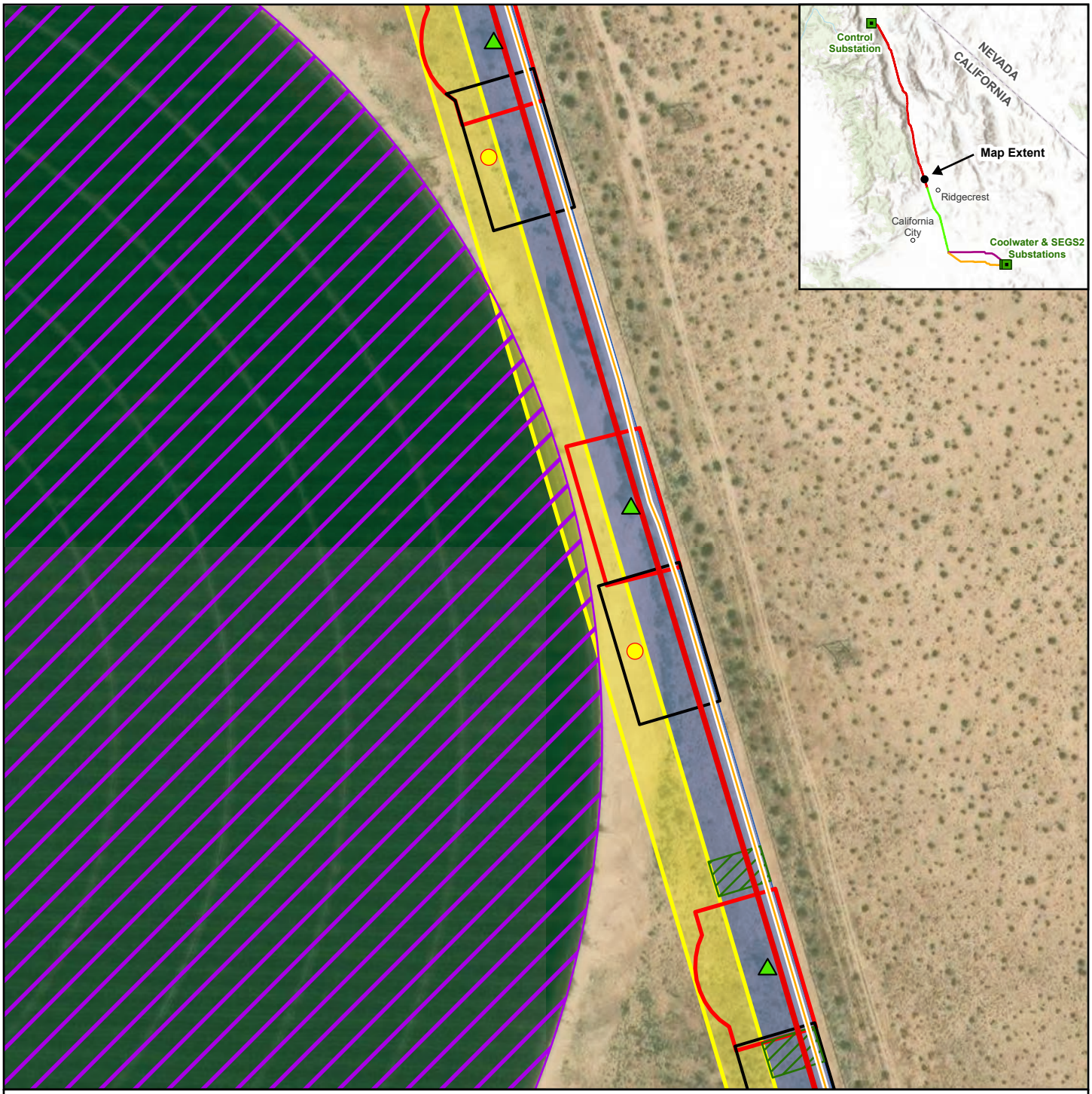
Roads
- Existing Access Road

Construction Areas
- Demolition Site
- General Disturbance Area
- Pull Site
- Structure Work Area

- Segment 1: Control-Haiwee-Inyokern
- Existing ROW
- New ROW
- Agricultural Area

1:2,400

N 0 200 feet



Source: Aspen, 2024;
ESRI, 2024; SCE, 2024.

Figure 3.3-2d

Farmland and Active Agricultural Operations in the Proposed Project Area, Inyokern Agricultural Area

Subtransmission Structures
- Proposed New Structure
- Structure to be Removed

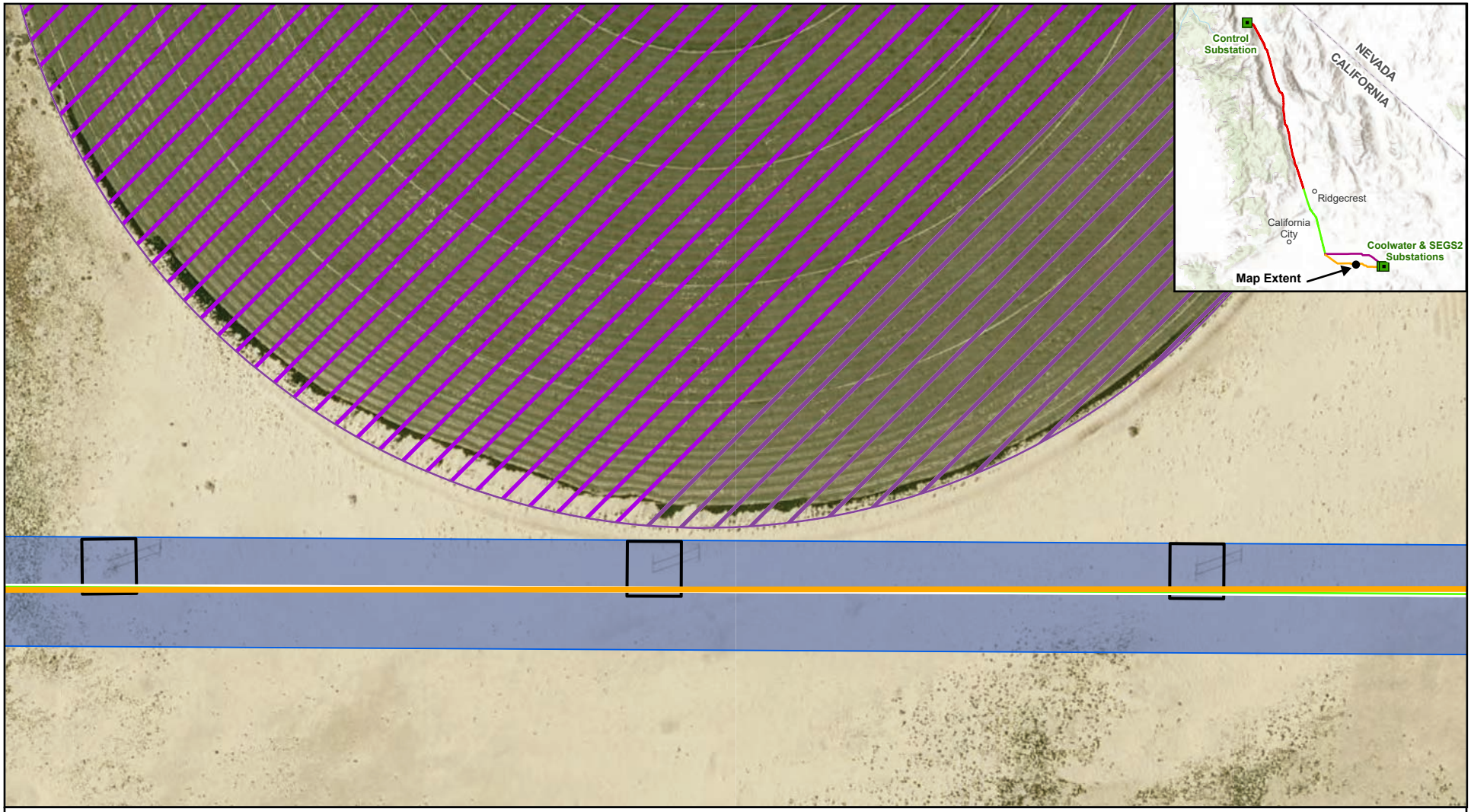
Roads
- Existing Access Road

Construction Areas
- Demolition Site
- General Disturbance Area
- Structure Work Area

- Segment 1: Control-Haiwee-Inyokern
- Existing ROW
- New ROW
- Agricultural Area

1:2,400

N 0 200 feet



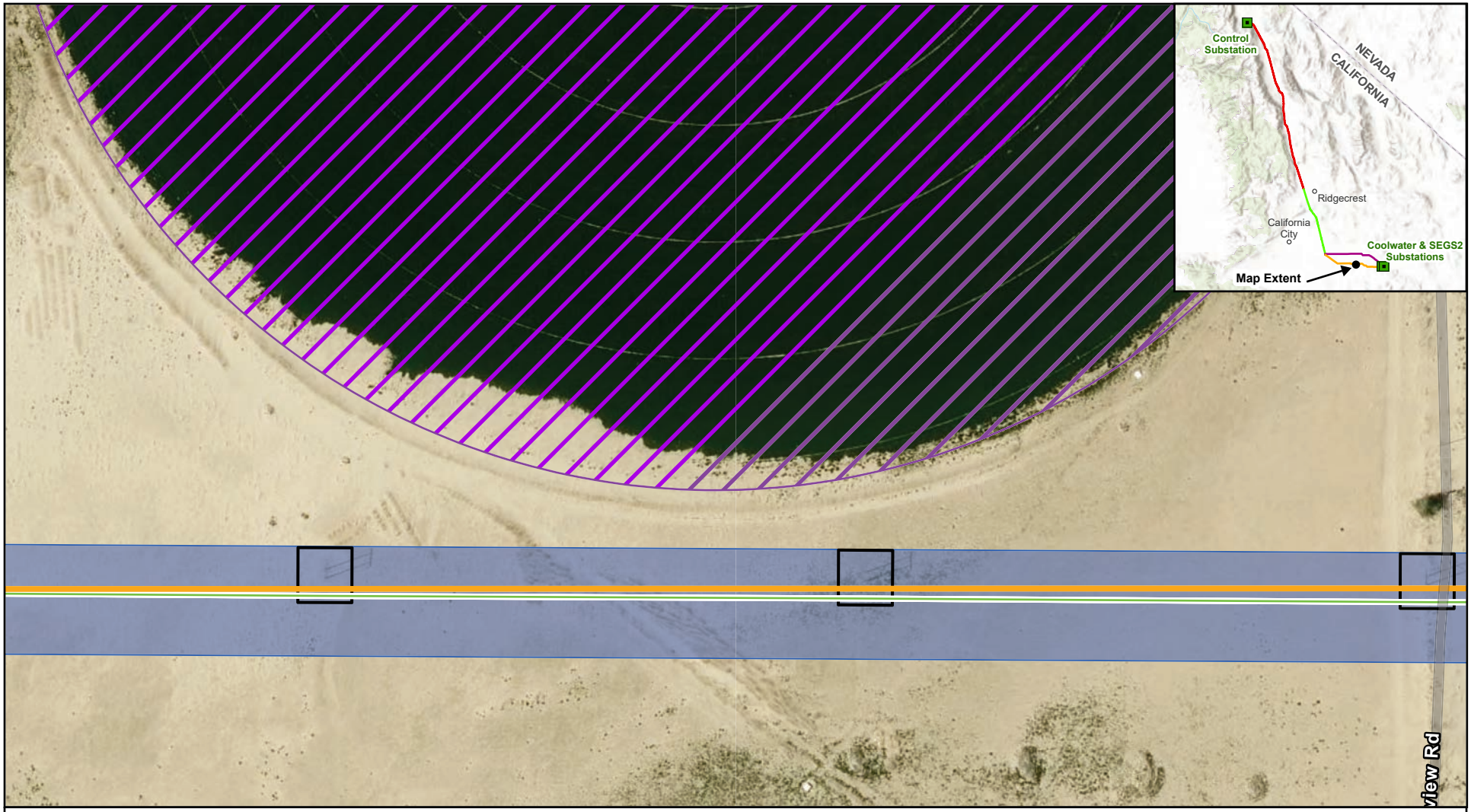
Source: Aspen, 2024;
ESRI, 2024; SCE, 2024.

Figure 3.3-3a

Farmland and Active Agricultural Operations in the Proposed Project Area, Barstow Agricultural Area West

Existing ROW
Agricultural Area
Construction Areas
Structure Work Area
Segment 3S: Kramer-Tortilla-Coolwater
Roads
New Access Road

1:2,400
N
0
200
feet



Source: Aspen, 2024;
ESRI, 2024; SCE, 2024.

Figure 3.3-3b

Farmland and Active Agricultural Operations in the Proposed Project Area, Barstow Agricultural Area West

Existing ROW
Agricultural Area
Construction Areas
Structure Work Area
Segment 3S: Kramer-Tortilla-Coolwater
Roads
New Access Road

1:2,400
N
0 200 feet

3.4. Air Quality

This section describes existing environmental conditions and anticipated impacts associated with the Proposed Project for Air Quality. Impacts evaluated in this section include: the potential for conflict with established air quality management plans and the potential effects of air pollutant emissions caused by the Proposed Project.

The environmental setting for Air Quality is presented in Section 3.4.1 and relevant regulations and standards are summarized in Section 3.4.2. Section 3.4.3 describes the impacts on the environment associated with implementation of the Proposed Project. These impact discussions introduce mitigation measures that would reduce or avoid significant adverse environmental impacts. Section 3.4.5 presents the mitigation monitoring, compliance, and reporting information, and Section 3.4.6 lists references cited in this section. Chapter 4 presents the environmental impacts of the alternatives to the Proposed Project. Cumulative impacts for all disciplines are considered in Chapter 5.

Scoping comments received during public outreach efforts raised certain issues and concerns that are addressed in the air quality impact discussions, including:

- Providing dust control and limiting wind erosion of soils.
- Mitigating fugitive dust with an adaptive management plan for fugitive dust and temporary air quality monitoring for PM10 and PM2.5 concentrations.
- Addressing fugitive dust that may reduce visibility.
- Establishing speed limits of 15 miles per hour to 25 miles per hour for travel on unpaved surfaces.

3.4.1. Environmental Setting

3.4.1.1. Regional Air Basins

The Proposed Project would be in California's Great Basin Valleys Air Basin and the Mojave Desert Air Basin, spanning primarily undeveloped, open lands through three counties. Local air districts regulate sources of air pollution and establish programs to protect and improve air quality in the project area. While air districts typically follow either county lines or air basin boundaries, multiple air districts may divide jurisdiction within one air basin. As such, the air districts may or may not have the same name as the air basin they are located in.

Figure 3.4-1 (Proposed Project Air Basins) and Figure 3.4-2 (Proposed Project Air Districts) show the proposed Project Air Basins and Proposed Project Air Districts, respectively.

Great Basin Valleys Air Basin

The Great Basin Valleys Air Basin (GBVAB) is partially defined by the mountains that form the Owens Valley with the Sierra Nevada to the west and the White-Inyo Mountains to the east. The GBVAB includes Alpine, Mono, and Inyo counties and is under the jurisdiction of the Great Basin Unified Air Pollution Control District (GBUAPCD), which regulates air pollutant emissions for all stationary sources in these counties. The GBVAB has a low population density, with most population centered around the City of Bishop and town of Mammoth Lakes and linked by US 395. The primary pollutant of concern is particulate matter, and the GBUAPCD oversees dust controls throughout the basin, including the management of dust from Owens Lake.

Mojave Desert Air Basin

The Mojave Desert Air Basin (MDAB) includes the desert portions of Los Angeles and San Bernardino counties, the eastern desert portion of Kern County, and the northeastern desert portion of Riverside County. The MDAB is comprised of the Eastern Kern Air Pollution Control District (EKAPCD), the Antelope

Valley Air Quality Management District (AVAQMD), Mojave Desert Air Quality Management District (MDAQMD), and the eastern portion of the South Coast Air Quality Management District (SCAQMD). The Mojave Desert Air Basin is characterized by a low population density within an assemblage of mountain ranges interspersed with long broad valleys that often contain dry lakes. Prevailing winds in the Mojave Desert Air Basin are out of the west and southwest (MDAQMD, 2016).

3.4.1.2. Ambient Air Quality Standards

Criteria Air Pollutants. Air quality is determined by measuring ambient concentrations of certain criteria air pollutants. The criteria pollutants are ozone (O3), respirable particulate matter (PM10), fine particulate matter (PM2.5), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead. Ozone is an example of a secondary pollutant that is not emitted directly from a source (e.g., an automobile tailpipe), but it is formed in the atmosphere by chemical and photochemical reactions. Reactive organic gases (ROG), including volatile organic compounds (VOC), are regulated as precursors to ozone formation.

The California Air Resources Board (ARB) and the U.S. Environmental Protection Agency (U.S. EPA) have independent authority to develop and establish health-protective ambient air quality standards, although the different legislative and scientific contexts cause some diversity between State and Federal standards currently in effect in California.

The monitored levels of the pollutants are compared to the current National and California Ambient Air Quality Standards (NAAQS and CAAQS) to determine degree of existing air quality degradation. The ambient air quality standards are shown in Table 3.4-1.

Table 3.4-1. National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards
Ozone	1 hour	0.09 ppm	—
	8 hour	0.070 ppm	0.070 ppm
Respirable Particulate Matter (PM10)	24 hour	50 µg/m^3	150 µg/m^3
	Annual Mean	20 µg/m^3	—
Fine Particulate Matter (PM2.5)	24 hour	—	35 µg/m^3
	Annual Mean	12 µg/m^3	12.0 µg/m^3
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm
	8 hour	9.0 ppm	9 ppm
Nitrogen Dioxide (NO_2)	1 hour	0.18 ppm	0.100 ppm
	Annual Mean	0.030 ppm	0.053 ppm
Sulfur Dioxide (SO_2)	1 hour	0.25 ppm	0.075 ppm
	24 hour	0.04 ppm	0.14 ppm
	Annual Mean	—	0.030 ppm

Notes: ppm = parts per million; µg/m3= micrograms per cubic meter; "—" = no standard.
Source: CARB, 2016.

3.4.1.3. Ambient Air Quality Attainment Status

The U.S. EPA, ARB, and the local air district classify an area as attainment, unclassified, or nonattainment with regard to certain pollutants, and these designations dictate the air quality management planning activities needed to make future air pollutant reductions. The classification depends on whether the monitored ambient air quality data shows compliance, insufficient data available, or non-compliance with the ambient air quality standards, respectively. If the air quality meets the national standard, the designation is attainment/unclassified.

Table 3.4-2 summarizes attainment status for the different local air districts with jurisdiction over sources in the Great Basin Valleys Air Basin, the San Bernardino County portion of the Mojave Desert Air Basin, and the Eastern Kern Planning Area, relative to the state and federal standards.

Table 3.4-2. Attainment Status for the GBUAPCD, EKAPCD and MDAQMD

	California Status			National Status		
Pollutant	**GBUAPCD**	**EKAPCD**	**MDAQMD[1]**	**GBUAPCD**	**EKAPCD**	**MDAQMD[1]**
O_3	Nonattainment	Nonattainment	Nonattainment	Attainment/ Unclassified	Nonattainment	Nonattainment
PM10	Nonattainment	Nonattainment	Nonattainment	Attainment/ Unclassified	Nonattainment	Nonattainment
PM2.5	Attainment	Attainment	Attainment	Attainment/ Unclassified	Attainment/ Unclassified	Attainment/ Unclassified
CO	Attainment	Attainment	Attainment	Attainment/ Unclassified	Attainment/ Unclassified	Attainment/ Unclassified
NO_2	Attainment	Attainment	Attainment	Attainment/ Unclassified	Attainment/ Unclassified	Attainment/ Unclassified
SO_2	Attainment	Attainment	Attainment	Unclassified	Attainment	Unclassified

1. The status does not include the classifications for the Searles Valley Planning Area of MDAQMD as the IC Project Alignment is not located in this area.

Source: https://www.arb.ca.gov/desig/adm/adm.htm

3.4.1.4. Toxic Air Contaminants

Toxic air contaminants (TACs) are air pollutants that may lead to serious illness or increased mortality, even when present in relatively low concentrations. Potential human health effects of TACs include birth defects, neurological damage, cancer, and death. There are hundreds of different types of TACs with varying degrees of toxicity. Individual TACs vary greatly in the health risk they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than another's. TACs do not have ambient air quality standards but are regulated by the local air districts using a risk-based approach. The Proposed Project would not be considered a stationary source subject to risk assessment programs, and surveys will be necessary to determine whether demolition or renovation work at the substations could encounter asbestos. Diesel particulate matter (DPM) is classified as a TAC, and statewide programs focus on managing this pollutant through motor vehicle fuels, engine, and tailpipe standards because many toxic compounds adhere to diesel exhaust particles. California's local air districts support these programs by issuing permits and requiring controls for larger stationary sources of DPM, including diesel powered engines rated over 50 horsepower.

3.4.1.5. Sensitive Receptors

For the purposes of air quality, the environmental setting between each segment is similar, with one of the main differences being the distances between sensitive receptors in each segment, and which air district jurisdiction each segment falls under. For this reason, this section describes the air quality setting along the entire alignment rather than by segment. Figure 3.4-1 (Proposed Project Air Basins) and Figure 3.4-2 (Proposed Project Air Districts) show the Proposed Project alignment through California Air Basins and Air District boundaries respectively.

The air quality management agencies in California generally define sensitive sites or sensitive land uses as those land uses where sensitive individuals are most likely to spend time, including schools and school-yards, parks and playgrounds, day care centers, nursing homes, hospitals, and residential communities. Individuals most sensitive to air pollution include children, the elderly, and those with pre-existing serious health problems affected by air quality (CARB, 2005). Studies show that DPM declines substantially with

distance, primarily within the first 500 feet (CARB, 2005). Conservatively, sensitive receptors within 1,000 feet of the Proposed Project are listed in Table 3.4-3.

Table 3.4-3. Sensitive Receptors within 1,000 Feet of the Proposed Project

Receptor Type	Distance to Nearest Work Area (feet)	Nearest Project Feature
Segment 1[1]		
Residences[2]	Within Work Area	Pull Site 120035
	35	Demolition Site 120035; New structure 1036
Segment 2		
Randsburg United Methodist Church	596	Pull Site 121165
Church of St. Barbara	281	Pull Site 121165
Randsburg Library	613	Pull Site 121165
Residences[2]	280	Demolition Site 120996; New structure 1388
Segment 3N		
Silver Valley High School	794	Pull Site 265
Residences[2]	50	Demolition Site 2270; New structure 2270; Pull Site 2270
Segment 3S		
Rimrock Villa Convalescent Hospital	776	Structure Work Area 3218
Kingdom Hall of Jehovah's Witness	780	Structure Work Area 3220
Residences[2]	40	J St Guard site
Material Yards (Segment 1)		
Residence	45	ICKI SA 1-3 East Upjohn Ave

1 No schools, religious institutions, hospitals, libraries, or nursing homes occur within 1,000 feet of Segment 1 work areas.
2 Numerous residences occur within 1,000 feet of project work areas. The residential receptor closest to work areas within each segment and material yard is identified in this table.

3.4.2. Applicable Regulations, Policies, and Standards

3.4.2.1. Federal Regulations, Policies and Standards

The federal regulatory framework for air quality includes many requirements for state and local action. Actions by federal agencies, including BLM and NPS, must comply with the Federal Clean Air Act, which is implemented by a combination of federal, state, and local rules.

Federal Clean Air Act (CAA). The National Ambient Air Quality Standards (NAAQS) for criteria air pollutants were established in 1970 with a mandate for periodic updating. The CAA places responsibility on state and local air agencies to maintain these ambient air quality standards. In the project area, the local air districts have the responsibility to establish regulations, enforce air pollution control requirements, and develop the necessary air quality management plans and strategies to achieve the NAAQS. Each local air district administers its rules and regulations to protect air quality and ensure progress towards attainment. The U.S. EPA implements most aspects of the CAA and provides oversight of local and state air quality management plans, rules and regulations to ensure attainment with the NAAQS.

The federal CAA provides the authority for programs to ensure that all areas of the country achieve the federal ambient air quality standards and to protect those areas that already meet the federal ambient air quality standards. Federal Class I areas are defined to provide the greatest protection, and the CAA prevents air quality deterioration for these areas.

The nearest Federal Class I areas to the Proposed Project would be the John Muir Wilderness Area and Domeland Wilderness, managed by the USDA Forest Service. The nearest boundaries for these wilderness areas are approximately 9 miles west of Proposed Project Segment 1. Sequoia and Kings Canyon National Parks are similarly west of Proposed Project Segment 1, with boundaries 10 to 11 miles from the Proposed Project. The Death Valley National Park is about 11 miles east of portions of Proposed Project Segment 1, but it is not categorized as a Federal Class I area. Yosemite National Park and wilderness areas of the Angeles and San Bernardino National Forests are greater than 40 miles away and generally outside of the region of Proposed Project activities.

3.4.2.2. State Regulations, Policies and Standards

California Clean Air Act. Implemented by the ARB, the California Clean Air Act establishes broad authority for California to regulate emissions from mobile sources and requires regions to develop and enforce strategies to attain California Ambient Air Quality Standards (CAAQS). In the project area, the local (regional) air district is responsible for demonstrating how these standards are met.

ARB Off-Road Mobile Sources Emission Reduction Program. The California Clean Air Act mandates that ARB achieve the maximum degree of emission reductions from all off-road mobile sources to attain the state ambient air quality standards. Off-road mobile sources include construction equipment. The earliest (Tier 1) standards for large compression-ignition engines used in off-road mobile sources became effective in California in 1996. Since then, the Tier 3 standards for large compression-ignition engines used in off-road mobile sources went into effect in California for most engine classes in 2006. In a 2004 rulemaking, the U.S. EPA established a phase-in of Tier 4 standards for certain "nonroad" engines beginning in 2008, and the Tier 4 or Tier 4 Interim (4i) standards apply to all off-road diesel engines model year 2012 or newer. These standards address emissions of NOx and toxic particulate matter from diesel combustion and are applicable to fleets that are already in-use.

ARB In-Use Off-Road Diesel-Fueled Fleets Regulation. The regulations for in-use off-road diesel equipment are designed to reduce nitrogen oxides (NOx) and toxic diesel particulate matter (DPM) from existing fleets of equipment. Depending on the size of the fleet, the owner would need to ensure that the average emissions performance of the fleet meets certain state-wide standards. In lieu of improving the emissions performance of the fleet, electric systems can be installed to replace diesel equipment in the fleet average calculations. Presently, all equipment owners are subject to a five-minute idling restriction in the rule (13 California Code of Regulations, Chapter 10, Section 2449).

ARB Portable Equipment Registration Program (PERP). This program allows owners or operators of portable engines and associated equipment commonly used for construction or farming to register their units under a statewide portable program that allows them to operate their equipment throughout California without having to obtain individual permits from local air districts.

3.4.2.3. Local Regulations, Policies and Standards

Pursuant to General Order 131-E, the Project is not subject to local authority because the CPUC has exclusive jurisdiction over the siting, design and construction of electric power line projects, distribution lines, substations, and electric facilities constructed by public utilities subject to CPUC jurisdiction. Local ordinance policies and requirements are presented here only where these requirements are used as the basis for impact analysis.

Air Quality Management Plans

Ozone Attainment Plans. In 2017, the EKAPCD adopted two plans to address EKAPCD's nonattainment status for ozone: Reasonably Available Control Technology (RACT) State Implementation Plan (SIP) and Ozone Attainment Plan (SCE, 2020). The most recent air quality management plan for the Mojave Desert air basin addresses the Western Mojave Desert federal ozone nonattainment designation (MDAQMD,

2017). The plan presents the latest planning assumptions regarding population, vehicle activity and industrial activity, and demonstrates how management of existing and forecasted ozone precursor-producing activities within the MDAQMD would achieve attainment of the 2008 ozone NAAQS in 2027. The current ozone attainment plan (MDAQMD, 2023) builds upon previous planning efforts including the 2004 and 2008 Ozone Attainment Plans.

PM10 Attainment Plans. The MDAQMD air quality management plan for PM10 contains a control strategy that provides for the adoption and implementation of federally approved Reasonably Available Control Measures to reduce PM10 emissions arising from human activities (MDAQMD, 1995). Reducing PM10 emissions from construction/demolition activities, disturbed areas, and unpaved road travel is a focus of MDAQMD Rule 403 and Rule 403.2, which specify the dust control requirements applicable to construction of the Proposed Project.

Local Air District Rules and Regulations

Relevant rules and regulations promulgated by the local air districts include:

GBUAPCD Rules and Regulations. The following GBUAPCD rules regulate emissions from construction-type activities:

- GBUAPCD Rule 401, Fugitive Dust: requires reasonable precaution measures to prevent visible particulate matter from being airborne, under normal wind conditions, beyond the source from which the emission originates.
- GBUAPCD Rule 402, Nuisance: prohibits the discharge of air contaminants, from any source, or other materials that cause injury, detriment, nuisance or annoyance to the public.
- GBUAPCD Rule 431, Particulate Emissions: controls emissions of particulate matter and calls for paved-road dust-reduction measures, as well as pollution-reduction education program.

EKAPCD Rules and Regulations. The following EKAPCD rules regulate emissions from construction-type activities:

- EKAPCD Rule 401, Visible Emissions, and Rule 402, Fugitive Dust: limit visible particulate matter and wind erosion or fugitive dust from material handling and hauling, bulk storage, earthmoving, construction, and demolition. These rules prohibit any emissions of fugitive dust from construction, demolition, or other operations that remain visible in the atmosphere beyond the property line of the site of the source, except along roadways.
- EKAPCD Rule 419, Nuisance: prevents public nuisances.

MDAQMD Rules and Regulations. The following MDAQMD rules regulate emissions from construction-type activities:

- MDAQMD Rule 401, Visible Emissions: implements a series of rules and regulations to prevent excessive visible emissions and prohibit excessive particulate matter from becoming airborne.
- MDAQMD Rule 402, Nuisance: prevents public nuisances.
- MDAQMD Rule 403, Fugitive Dust, and Rule 403.2, Fugitive Dust Control for the Mojave Desert Planning Area: specify how activities including construction must be conducted to prevent anthropogenic fugitive dust from causing NAAQS violations for PM10 in the Mojave Desert Planning Area. These rules ensure that the measures adopted within the Mojave Desert Planning Area Federal PM10 Attainment Plan are implemented. Some of the measures include the application of dust suppressants, covering bulk materials during hauling and in storage piles, and limiting vehicle speeds on unpaved roads.
- MDAQMD Asbestos Notification Requirements: Projects involving demolition or renovation must determine whether the proposed activity would involve removal or disturbing building materials that

contain asbestos, which is a California-listed toxic air contaminant and a hazardous air pollutant. To ensure that demolition activities implement proper controls for removal and disposal of asbestos, the MDAQMD would require SCE to survey project-related substation work sites and complete a checklist and, if applicable, submit a Notification of Demolition/Renovation with a payment of the fee under MDAQMD Rule 302(E), Asbestos Demolition/Renovation Fees.

3.4.3. Environmental Impacts of the Proposed Project

3.4.3.1. Impact Analysis Approach

All construction- and operation-related emissions are quantified based on the best available forecast of activities. For each of the activities of the Project Description, the Applicant (SCE, PEA Appendix F 2020) developed emissions estimates. The Applicant's emissions estimates for ground construction activities use the California Emissions Estimator Model (CalEEMod; version 2016.3.2) software developed by the California Air Pollution Control Officers Association (CAPCOA).[1] CalEEMod uses mobile source emission factors from the Air Resources Board (ARB) OFFROAD inventory and EMFAC2014 models, for off-highway construction equipment and on-highway motor vehicles, respectively. The Applicant's estimates for helicopter emissions use factors from the Swiss Federal Office of Civil Aviation (FOCA) Guidance on the Determination of Helicopter Emissions. The activity assumptions and emission factors are found in the applicants' emissions estimates (SCE, PEA Appendix F), and a summarization of resulting quantities of emissions appear in this EIR in Appendix 3, Air Quality.

The Proposed Project includes one APM as described in Section 2.8. regarding Air Quality to ensure the Proposed Project would be constructed and operated with minimal environmental impacts in a manner consistent with applicable rules and regulations. APM AQ-1, Tier 4 Construction Equipment requires all construction equipment with an hp rating between 100-750 to use engines compliant with U.S. EPA Tier 4 offroad engine standards and is described in further detail in Table 3.4-4. Implementation of this APM is considered part of the Proposed Project for purposes of the evaluation of environmental impacts.

Table 3.4-4. Local Applicant Proposed Measures – Air Quality

APM	Description
Air Quality	
APM AQ-1	AIR-1: Tier 4 Construction Equipment. All construction equipment with rating between 100 and 750 horsepower (hp) would be required to use engines compliant with U.S. 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 engine would be equipped with a Tier 3 engine and documentation of the unavailability would be provided.

3.4.3.2. Impact Significance Criteria

Significance Criteria

Would the Proposed Project:

- **AQ-1:** Conflict with or obstruct implementation of the applicable air quality plan?
- **AQ-2:** Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard?
- **AQ-3:** Expose sensitive receptors to substantial pollutant concentrations?
- **AQ-4:** Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

[1] Use of the prior desktop version (2016.3.2) of CalEEMod is acceptable in this case based on the Project application filing date in April 2020; an initial online version of the CalEEMod software was launched in December 2022 (2022.1.1.3).

Regarding Significance Criteria AQ-2, determining whether quantities of direct and indirect air pollutant emissions are cumulatively considerable depends on a comparison of the Project's emissions rates against the mass-based CEQA thresholds of significance, recommended by each local air district.

The GBUAPCD and EKAPCD (GBUAPCD, 2018) recommend equal quantitative thresholds for evaluating the operation of a new source, and these thresholds are based on the levels that trigger the local requirements for offsetting, as in the EKAPCD New Source Review Rule (EKAPCD, 1999). The CEQA thresholds for significant emissions in GBUAPCD and EKAPCD are shown in Table 3.4 5.

Table 3.4-5. GBUAPCD and EKAPCD Significant Emissions Thresholds

	NOx	VOC	PM10	PM2.5	CO	SOx
Daily Significance Thresholds (lb/day), from motor vehicle trips only	137	137	—	—	—	—
Annual Significance Thresholds (tpy)	25	25	15	15	—	27

Source: EKAPCD, 1999.

The MDAQMD quantitative thresholds are on the basis of tons per year (tpy) or pounds per day (lb/day) of a given pollutant, although the daily value would not apply to the Proposed Project because the construction phase would extend for more than one year (MDAQMD, 2016). The CEQA thresholds for significant emissions in MDAQMD are shown in Table 3.4-6.

Table 3.4-6. MDAQMD Significant Emissions Thresholds

	NOx	VOC	PM10	PM2.5	CO	SOx
Daily Significance Thresholds (lb/day)	137	137	82	65	548	137
Annual Significance Thresholds (tpy)	25	25	15	12	100	25

Source: MDAQMD, 2016.

The analysis in this EIR conservatively applies the most-stringent of the local air district recommended mass-based thresholds and uses the most-stringent thresholds to determine the significance of Proposed Project activities.

The local air districts also recommend that a project could have significant impact on the environment (EKAPCD, 1999; MDAQMD, 2016) if it would:

- Cause or contribute to an exceedance of any California or National Ambient Air Quality Standard;
- Exceed the local air district's health risk public notification thresholds for evaluation of where a project could expose sensitive receptors to substantial pollutant concentrations, the health risk thresholds would be exceeded if a project results in a cancer risk greater than or equal to 10 in a million and/or a non-cancer hazard index greater than or equal to 1; or
- Be inconsistent with adopted federal or state Air Quality Attainment Plans.

3.4.3.3. Impacts and Mitigation Measures

Impacts AQ-1 through AQ-4 are all described below for the entirety of the project site, rather than by segment because the impacts within each segment traverse jurisdictional boundaries. The Cal City Options defined in Section 2.1.1 and illustrated in Figure 2-2 would have impacts no different from those defined for Impacts AQ-1 through AQ-4, because the extent of ground disturbance and equipment use required for the Proposed Project would be the same as that required for any of the Cal City Options.

Impact AQ-1: Conflict with or obstruct implementation of applicable air quality plans.

Construction

LESS THAN SIGNIFICANT. The GBUAPCD, EKAPCD, and MDAQMD have air quality management plans to address ozone nonattainment conditions. These air quality management plans form the basis for the rules that are described in more detail in Section 4.1.2. The air quality management plans rely on sources using reasonably available control technology and include evaluations of emissions trends that reflect population and employment growth. Construction of the Proposed Project would follow the rules and regulations of adopted by each of the local air districts, summarized in Section 3.4.2. The local rules and regulations establish the requirements for activities within each air district so that emissions are controlled in a manner that will be consistent with the adopted air quality management plans. Because the Proposed Project consists of replacing and/or repairing existing subtransmission facilities, it would not cause any additional growth in population or employees.

Construction emissions for the Proposed Project would be localized and short term, over the course of approximately 39 months. Construction would be required to follow all applicable rules and regulations, and the construction workforce would not contribute to permanent population or employment growth in the area. Therefore, the Proposed Project would not conflict with or obstruct implementation of the applicable air quality plans, and this would be a less than significant impact.

Operations and Maintenance

LESS THAN SIGNIFICANT. The Proposed Project would repair or replace existing subtransmission facilities that are already being serviced with operations and maintenance from SCE. These duties would not substantially change from present operations of the existing facilities. No new full-time staffing or induced population growth would occur. The Proposed Project's operations and maintenance phase would not conflict with or obstruct implementation of the applicable air quality plans. Therefore, impacts would be less than significant.

Mitigation Measures for Impact AQ-1

No mitigation is required.

Impact AQ-2: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard.

Construction

LESS THAN SIGNIFICANT WITH MITIGATION. The Proposed Project would create criteria air pollutant emissions during construction activities, and these activities would occur over four project segments in the jurisdiction of three different local air districts. This section quantifies the criteria air pollutant emissions within each local air district to compare with the significance thresholds for protecting regional air quality planning efforts. Construction-phase emissions would include tailpipe emissions from motor gasoline or diesel construction equipment and vehicles used to transport employees, equipment, or haul materials. Other emissions from construction include fugitive dust emissions from ground disturbance on unpaved and paved surfaces via grading, vehicle and equipment movement, and losses while hauling loose material from or to the site.

Maximum daily and annual emissions were determined and attributed to each air district based on the fraction of construction occurring within each air district. The maximum emissions are reported for each air district. The tabulated emissions for each segment reflect implementation of the applicant proposed measures and compliance with local air district regulations, including the use of Tier 4 engines and dust control measures.

Segment 1 traverses GBUAPCD and EKAPCD; Segment 2 traverses EKAPCD and MDAQMD. Segment 3N and Segment 3S are in MDAQMD. Of the total alignment, 44% is under GBUAPCD jurisdiction, 14% is under EKAPCD jurisdiction, and 42% is under MDAQMD jurisdiction.

Emissions quantified in this analysis reflect the applicant proposed measure to require use of higher-tier construction equipment and the applicant's compliance with mandatory dust control measures. Emission levels without mandatory dust control would exceed significance thresholds for PM10 and PM2.5, as detailed in the applicants' emissions estimates (SCE, PEA Appendix F). To minimize fugitive dust from unpaved surfaces and emissions from other ground-disturbing activities, all construction activities would be required to comply with control measures set forth by the following air district requirements: Great Basin Unified Air Pollution Control District (Rule 401, Fugitive Dust), Eastern Kern Air Pollution Control District (Rule 402, Fugitive Dust), and the Mojave Desert Air Quality Management District (Rule 403, Fugitive Dust Measures). These measures may include the use of water trucks and other dust control measures, including the application of non-toxic soil binders. The sources of water to be used for dust control would be from existing surface water and groundwater fed supplies.

Tables 3.4-7 and 3.4-8 show maximum annual and daily average emissions in GBUAPCD and EKAPCD with the applicant proposed measure to require use of higher-tier construction equipment and the applicant's compliance with mandatory dust control measures. Neither the annual nor daily emissions in either air district would be in exceedance of the local thresholds. Impacts in GBUAPCD and EKAPCD are less than significant with mitigation.

Table 3.4-7. Project Construction, Maximum Annual and Daily Rates in GBUAPCD

Location	NOx	VOC	PM10	PM2.5	CO	SOx
Daily Project Emissions in GBUAPCD (lbs/day)	48.31	18.34	95.27	11.46	131.97	0.49
Daily Significance Thresholds (lbs/day), from motor vehicle trips only	137	137	—	—	—	—
Daily Exceedance? (Y/N)	No	No	No	No	No	No
Annual Project Emissions in GBUAPCD (tons/yr)	7.54	2.86	14.86	1.79	20.59	0.08
Annual Significance Thresholds (tons/yr)	25	25	15	15	—	27
Annual Exceedance? (Y/N)	No	No	No	No	No	No

Source: AQ appendix, summary of PEA results (SCE, 2020).

Table 3.4-8. Project Construction, Maximum Annual and Daily Rates in EKAPCD

Location	NOx	VOC	PM10	PM2.5	CO	SOx
Daily Project Emissions in EKAPCD (lbs/day)	11.87	4.57	27.93	3.14	35.36	0.10
Daily Significance Thresholds (lbs/day), from motor vehicle trips only	137	137	—	—	—	—
Daily Exceedance? (Y/N)	No	No	No	No	No	No
Annual Project Emissions in EKAPCD (tons/yr)	1.85	0.71	4.36	0.49	5.52	0.02
Annual Significance Thresholds (tons/yr)	25	25	15	15	—	27
Annual Exceedance? (Y/N)	No	No	No	No	No	No

Source: AQ appendix, summary of PEA results (SCE, 2020).

Table 3.4-9 shows maximum annual and daily average emissions in MDAQMD with the implementation of APM AQ-1, which commits to use of higher-tier construction equipment and the applicant's compliance with mandatory dust control measures. The MDAQMD emissions are reported for annual emissions only. The MDAQMD gives thresholds for daily and annual values such that projects that are shorter than one year may use the daily value to determine significance. Since the Proposed Project would extend over more than one year, the daily threshold value would not apply to the Proposed Project, and the annual emissions threshold values are used (MDAQMD, 2016). Impacts in MDAQMD are less than significant with mitigation.

Table 3.4-9. Project Construction, Maximum Annual Rates in MDAQMD

Location	NOx	VOC	PM10	PM2.5	CO	SOx
Annual Project Emissions in MDAQMD (tons/yr)	2.60	2.04	6.87	0.82	10.46	0.03
Annual Significance Thresholds (tons/yr)	25	25	15	12	100	25
Annual Exceedance? (Y/N)	No	No	No	No	No	No

Source: AQ appendix, summary of PEA results (SCE, 2020).

Emissions quantified in this analysis reflect implementation of the proposed mitigation measures that supersede the applicant proposed measures, and comply with air district regulations, which would require use of Tier 4 engines and dust control measures. The impact of construction emissions would be significant without implementation of these measures. To ensure that the Applicant Proposed Measures will be made enforceable, this analysis recommends Mitigation Measure AQ-2a, Control Off-Road Equipment Emissions with Tier 4 Engines, and Mitigation Measure AQ-2b, Control Fugitive Dust Emissions. Mitigation Measure AQ-2a (Control Off Road Equipment Emissions with Tier 4 Engines) supersedes APM AQ-1 in order to provide documentation of engine ratings onsite during construction. With the recommended mitigation, the impact of construction phase emissions would be reduced to a less than significant level in all three air districts.

Operations and Maintenance

LESS THAN SIGNIFICANT. In the baseline conditions, operations and maintenance activities occur along the subtransmission lines as necessary for routine upkeep of the existing facilities. The Proposed Project would create no additional permanent full-time positions for providing routine operations and maintenance. Operations and maintenance would involve no material changes in the types or locations of worker vehicle trips, which would be ongoing. Ongoing operations and maintenance would cause minor amounts of tailpipe and fugitive emissions from equipment and motor vehicles, similar to current conditions, and as needed for occasional repairs.

The Proposed Project's emissions created by operations and maintenance activities would not substantially change from baseline levels. The impact of emissions during operations and maintenance would be less than significant, and no mitigation is required.

Mitigation Measures for Impact AQ-2

AQ-2a **Control Off-Road Equipment Emissions with Tier 4 Engines (Supersedes APM AQ-1).** All off-road construction equipment with rating between 100 and 750 horsepower (hp) shall be required to use engines compliant with U.S. EPA Tier 4 Final non-road engine standards. In the event a Tier 4 Final engine is not available for any off-road construction equipment with rating at or higher than 100 hp, that engine shall be equipped with a Tier 4 Interim or Tier 3 engine, and documentation of Tier 4 Final engine unavailability shall be provided.

AQ-2b **Control Fugitive Dust Emissions.** During construction, fugitive dust shall be controlled to a level that prevents visible particulate matter from becoming airborne by implementing the following measures:

- Surfaces disturbed by construction activities shall be covered or treated with a dust suppressant or water until the completion of activities at each site of disturbance. Watering shall occur at a minimum of three times daily on disturbed soil areas with active operations or dust shall otherwise be controlled by rainfall or use of a non-toxic chemical dust palliative or soil weighting agent.
- Inactive disturbed soil (e.g., excavated or graded areas) and soil piles shall be sufficiently watered or sprayed with a soil stabilizer to create a surface crust, stabilized with natural vegetation, or covered.
- Drop heights from excavators and loaders shall be minimized to a distance of no more than 5 feet. Vehicles hauling soil and other loose material would be covered with tarps or maintain at least 6 inches of freeboard.
- Vehicle speeds on unpaved roadways and access roads shall be limited to 15 miles per hour.
- Unpaved non-public traffic and parking areas designated for utilization during Proposed Project construction would be effectively stabilized to control dust emissions with a non-toxic chemical dust suppressant, soil weighting agent, gravel, or asphalt pavement.

Impact AQ-3: Expose sensitive receptors to substantial pollutant concentrations.

Construction

LESS THAN SIGNIFICANT WITH MITIGATION. Sensitive receptors include the nearest residences, and a number of occupied residential dwelling(s) would be within 50 feet the Proposed Project activities, as described in Table 3.4-3 (SCE, 2020). Construction activities would result in locally increased concentrations of construction-related emissions, including diesel particulate matter (DPM) and other toxic air contaminants, which would cause increased health risk and hazards near the site.

The Proposed Project's criteria pollutant emissions are not considered a high enough level to cause direct health impacts to local sensitive receptors. Construction emissions would occur over a large area, along the 359 miles of existing subtransmission lines located in Inyo, Kern, and San Bernardino Counties. The construction-related emissions would be short-term and dispersed across the region, ensuring that no single location would be exposed to substantially increased pollutant concentrations, and that the duration of exposure would be limited to periods of up to 39 months at any single location. Additionally, studies show that DPM declines substantially with distance, primarily within the first 500 feet (CARB, 2005).

The construction-related emissions would be short-term, and aside from staging areas, no single location would be exposed to increased pollutant concentrations for more than a few days as construction crews move along the linear routes. Activities at staging areas would occur over a span of 39 months; however, peak emissions from construction at substations would occur at lower rates than at tower and pole work sites. Construction at any one work site along the linear routes would last a much shorter time. The limited duration and limited quantities of construction emissions ensure that the exposure of any individual sensitive receptor would be limited. This limits the potential for short-term (acute) effects or long-term (chronic) effects including cancer. The Proposed Project would not involve any new stationary sources of TACs, and construction-related diesel equipment emissions would not occur at any single location for an excessive duration.

Installation of new equipment at existing substations could require demolition work that may encounter asbestos-containing building materials. Existing substation demolition would occur within the MDAQMD jurisdiction, and thus the MDAQMD is responsible for enforcing the Asbestos National Emission Standard for Hazardous Air Pollutants (NESHAP). In compliance with NESHAP, SCE will survey the substation work

sites and submit a notification to the MDAQMD for any proposed demolition activities at substations that could encounter asbestos; if applicable, payment of the fee under MDAQMD Rule 302(E), Asbestos Demolition/Renovation Fees, would also be required.

For any given proposed industrial land use development that is within 1,000 feet of an existing residential use, the MDAQMD recommends conducting an evaluation of whether the project would expose sensitive receptors to substantial pollutant concentrations (MDAQMD, 2016), which can result in cancer risks or health hazards. The Proposed Project would not be a new industrial land use development or install new sources that could emit substantial levels of toxic air contaminants. Accordingly, the Proposed Project would not warrant further analysis of air quality health risks or hazards.

Since construction-related emissions would be short-term and dispersed across the region, and emissions would be reduced with implementation of Mitigation Measure AQ-2a (Control Off-Road Equipment with Tier 4 Engines, Supersedes APM AQ-1) and Mitigation Measure AQ-2b (Control Fugitive Dust Emissions), the duration of exposure at any sensitive receptor along the Project would be limited. As such, the impact of potentially exposing sensitive receptors to substantial pollutant concentrations would be less than significant with mitigation.

Operations and Maintenance

LESS THAN SIGNIFICANT. Operations and maintenance activities are already occurring along the subtransmission lines as necessary for routine upkeep of the existing facilities. The Proposed Project's operation emissions of criteria pollutants would not substantially change from baseline levels. The Proposed Project's operations and maintenance phase would not expose sensitive receptors to substantial health risks from criteria pollutant emissions. The impact to sensitive receptors of air pollutants during operations and maintenance would be less than significant. Therefore, operations and maintenance for the Proposed Project would not subject sensitive receptors to substantial pollutant emissions, and this would be a less than significant impact. No mitigation is required.

Mitigation Measures for Impact AQ-3

AQ-2a Control Off-Road Equipment Emissions with Tier 4 Engines (Supersedes APM AQ-1).

AQ-2b Control Fugitive Dust Emissions.

Impact AQ-4: Generate other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Construction and Operations and Maintenance

LESS THAN SIGNIFICANT. The Proposed Project would not include any notable source of odors, or other emissions, except for those emanating from small quantities of cleaners, solvents or architectural coatings that may include organic compounds. Minor odors or organic compounds that may off-gas from coatings or consumer products would not occur at a nuisance level or affect a substantial number of people. Construction and operations and maintenance activities involving diesel-powered equipment and vehicles would not be a source of notable odors because of the mandatory use of ultra-low sulfur diesel fuel. Project-related activities would occur in compliance with local air district rules and regulations prohibiting nuisances and would not create objectionable odors affecting a substantial number of people. This impact would be less than significant, and no mitigation is required.

Mitigation Measures for Impact AQ-4

No mitigation is required.

3.4.4. Mitigation Monitoring, Compliance, and Reporting

Table 3.4-10 presents the mitigation monitoring, compliance, and reporting information for air quality.

Table 3.4-10. Mitigation Monitoring Program – Air Quality

Mitigation Component	Text or Description
Mitigation Measure AQ-2a	**Control Off-Road Equipment Emissions with Tier 4 Engines (Supersedes APM AQ-1).**
Location	Entire Project
Monitoring / Reporting Action	CPUC to verify that SCE uses required engine types
Effectiveness Criteria	Emissions are reduced based on use of cleaner engines
Responsible Agency	CPUC
Timing	Ongoing during construction
Mitigation Measure AQ-2b	**Control Fugitive Dust Emissions.**
Location	Entire Project
Monitoring / Reporting Action	CPUC to verify that SCE implements required dust control measures
Effectiveness Criteria	Visible dust plumes are minimized
Responsible Agency	CPUC
Timing	Ongoing during construction

3.4.5. References

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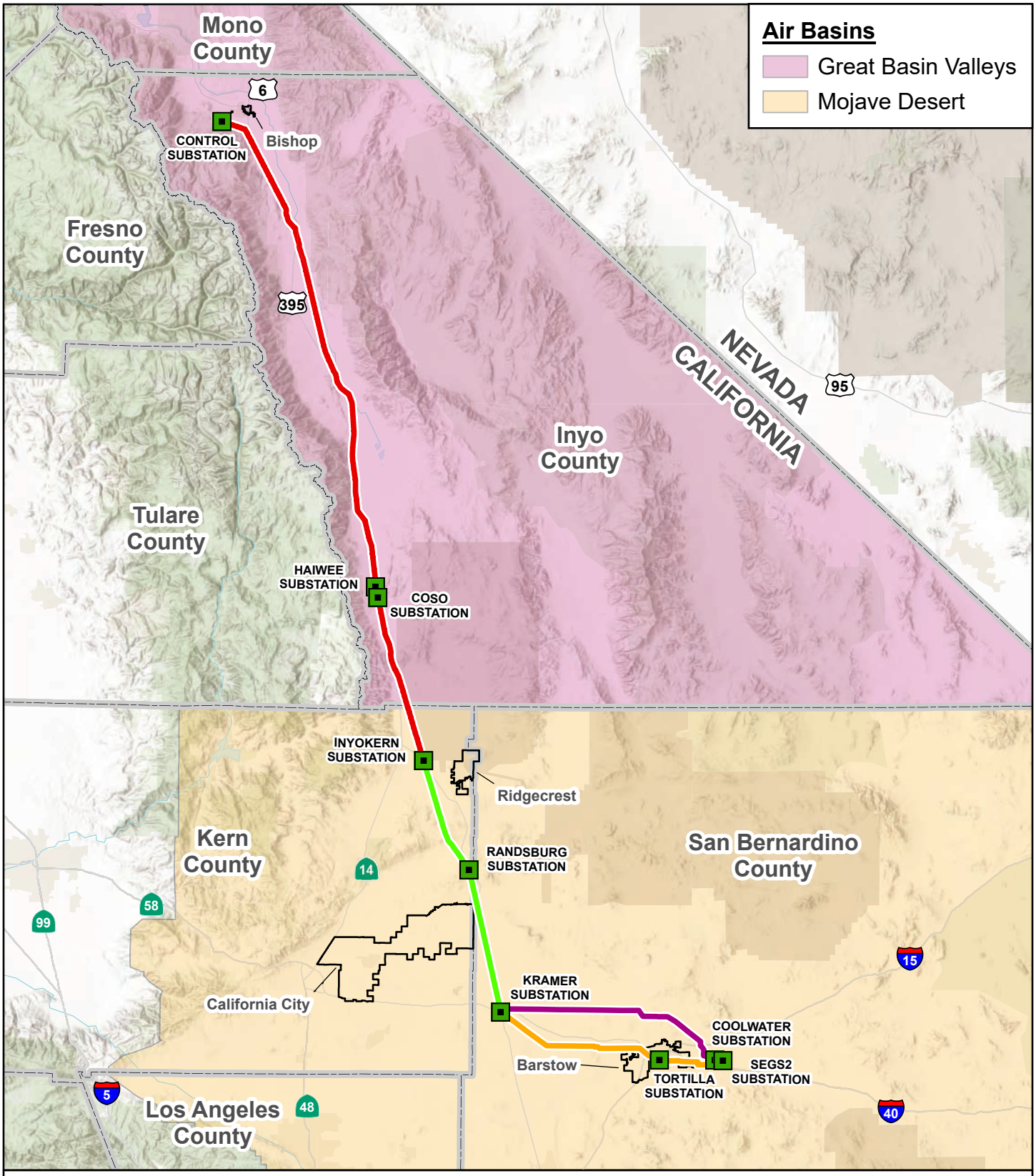


Sources: Aspen, 2024; CARB, 2024; BLM, 2024; ESRI, 2024; SCE, 2024.

Figure 3.4-1

Proposed Project Air Basins

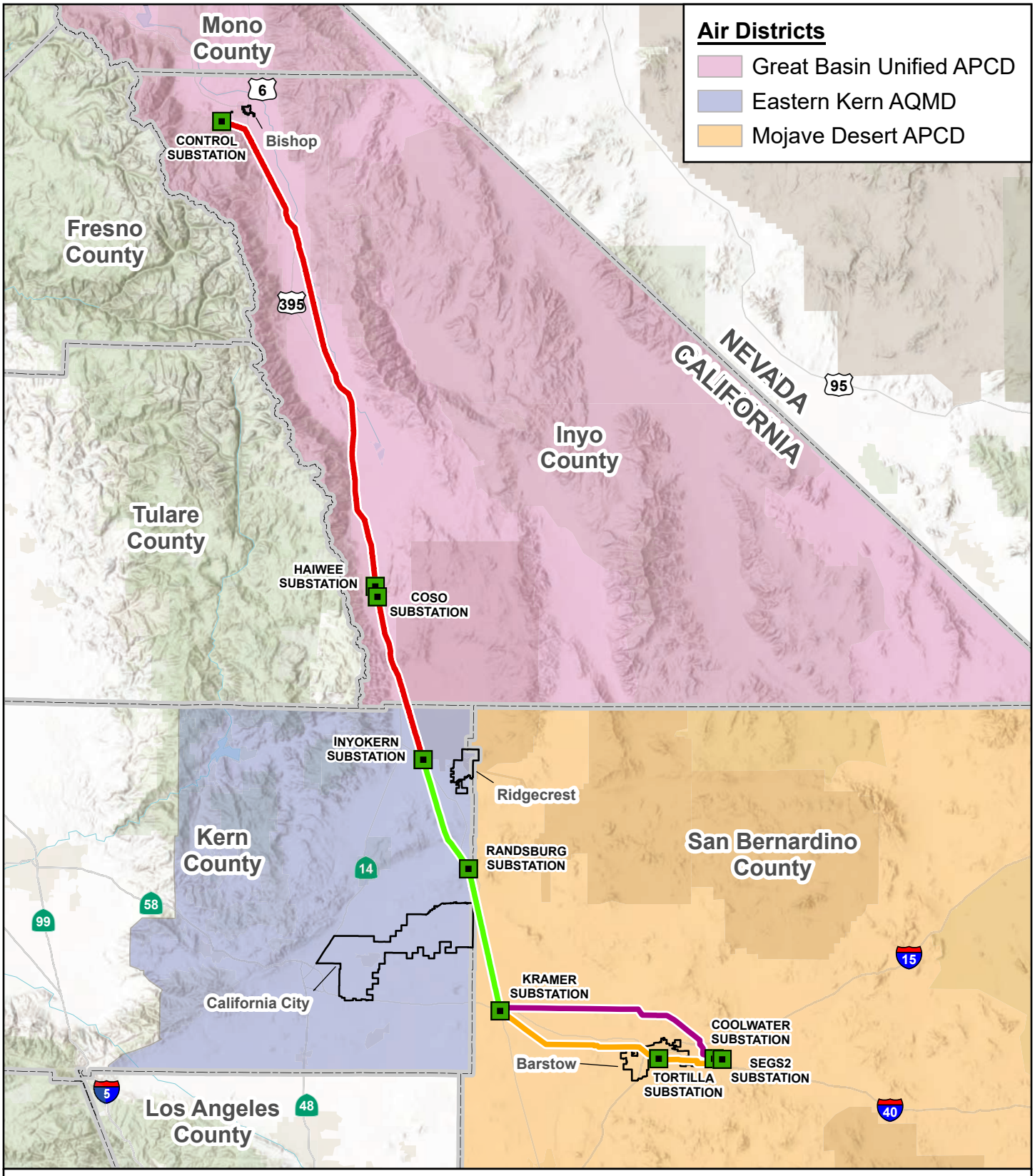
Ivanpah-Control Project Segments

- Segment 1: Control-Haiwee-Inyokern
- Segment 2: Inyokern-Kramer
- Segment 3N: Kramer-Coolwater
- Segment 3S: Kramer-Tortilla-Coolwater

- Substation
- City Boundary
- County

1:1,584,000

N 0 25 Miles



Sources: Aspen, 2024; CARB, 2024; BLM, 2024; ESRI, 2024; SCE, 2024.

Figure 3.4-2

Proposed Project Air Districts

Ivanpah-Control Project Segments

- Segment 1: Control-Haiwee-Inyokern
- Segment 2: Inyokern-Kramer
- Segment 3N: Kramer-Coolwater
- Segment 3S: Kramer-Tortilla-Coolwater

- Substation
- City Boundary
- County

1:1,584,000

N 0 25 Miles

3.5. Biological Resources

This section describes existing environmental and regulatory settings and anticipated impacts and recommended mitigation associated with the Proposed Project for Biological Resources. Impacts evaluated in this section include direct and indirect impacts to native vegetation, general wildlife, special-status[1] plant and wildlife species (including listed threatened and endangered species), wildlife migration corridors, critical habitat, and USACE and CDFW jurisdictional waters. This section is organized as follows:

- **Section 3.5.1, Environmental Setting.** This section summarizes the regional setting and results of field surveys along the project route, within the right of way (ROW) and adjacent buffer areas.
- **Section 3.5.2, Applicable Regulations, Policies, and Standards.** This section summarizes the relevant federal, State, and local regulations and standards.
- **Section 3.5.3, Environmental Impacts of the Proposed Project.** This section describes the direct and indirect impacts on the environment associated with implementation of the Proposed Project, including impacts within the project footprint (ground disturbance area) and surrounding area. Mitigation measures are recommended to reduce impact severity or extent.
- **Section 3.5.4, Mitigation Measures.** This section presents the full text of all mitigation measures applicable to biological resources.
- **Section 3.5.5, Mitigation Monitoring, Compliance, and Reporting.** This section presents the mitigation monitoring, compliance, and reporting information.
- **Section 3.5.6, References.** This section lists references cited in this section.

The environmental impacts of the alternatives to the Proposed Project are presented in Chapter 4, and cumulative impacts are presented in Chapter 5.

- **Appendix 4** (Biological Resources) presents additional detail on biological resources, including a set of tables detailing species occurrences, disturbance acreage within specific areas or habitat types, and critical habitat.

The scoping effort conducted by CPUC in September 2020 resulted in several public comments and concerns related to Biological Resources. Public concerns communicated in the scoping process that are related to biological resources and are considered in this analysis include:

- Rare and Sensitive Species Protection: Complete inventories, develop mitigation to avoid impacts to rare plants, and obtain a California Endangered Species Act Incidental Take Permit if state-listed species may be affected. This includes mitigation efforts to reduce impacts on protected species.
- Habitat Assessment and Impact Minimization: Map habitat types; locate project activities on disturbed sites; estimate acreage of impacts to desert tortoise habitat; minimize road widening and tree removal; rehabilitate areas used for staging areas.
- Mitigation Measures and Alternatives: Require mitigation measures and alternatives to avoid or minimize impacts. Recommendations for cumulative impacts analysis to follow Council on Environmental Quality guidance. Indicate existing mitigation measures that have been modified for this project and document their effectiveness for similar projects.
- Regulatory Compliance and Coordination: Require notification to CDFW under Fish and Game Code section 1602. Recommend reviewing recent BLM right-of-way stipulations and USFWS biological opinion terms to apply latest protective measures. Document effects on existing state and federal listed species.

[1] For definitions of special-status species, refer to Section 3.5.1.3 (plants) and 3.5.1.4 (wildlife).

3.5.1. Environmental Setting

This section describes the biological resources that occur in the vicinity of the Proposed Project. It includes a description of the existing biotic environment, including sensitive habitats and natural communities as well as special-status species and their locations in relation to the Proposed Project. Section 3.5.1.1 provides an overview of the relevant biological resources across the geographic extent of the Proposed Project and Section 3.5.1.2 provides the relevant biological resources by segment. This information is based on biological resources information provided in SCE Proponent's Environmental Assessment (PEA) (SCE, 2020) and survey results from field checks in 2023 and 2024.

The PEA includes biological technical reports and jurisdictional waters reports, as listed, that provide additional detailed information on biological resources in the project area. For biological resources, the Project area is defined as a 100 foot (30 meter) radius around each existing tower location, a 150-foot-wide (45-meters-wide) corridor spanning 75 feet (25 meters) on each side of the centerline for the entire alignment, and all known pulling/tensioning sites, laydown areas, and new or modified access routes in Proposed Project areas.

- Transmission Line Rating and Remediation (TLRR) Sensitive Species and Habitat Report (SSHR), Control-Haiwee 115 kV Subtransmission Line Project. Appendix G of the PEA (Arcadis, 2019a)
- TLRR Sensitive Species and Habitat Report (SSHR), Ivanpah-Coolwater-Kramer-Inyokern 115 kV Sub-transmission Line Project. Appendix G of the PEA (Arcadis, 2019b)
- Wetlands and Other Waters Jurisdictional Delineation Report, Control-Haiwee 115 kV Subtransmission Line Project, Inyo and Kern Counties, California. Appendix I of the PEA (Arcadis, 2019c)
- Wetlands and Other Waters Jurisdictional Delineation Report, Ivanpah-Coolwater-Kramer-Inyokern 115 kV Subtransmission Line Project, San Bernardino County and Kern County, California. Appendix I of the PEA (Arcadis, 2019d)

Surveys to field check biological resources were performed in 2023 and 2024. Results are documented in:

- TLRR Sensitive Species and Habitat Report, Botanical Addendum, Ivanpah-Control 115 kV Subtransmission Line Project (Arcadis, 2023a)
- Wetlands and Other Waters Jurisdictional Delineation Report, Control-Haiwee 115 kV Subtransmission Line Project, Addendum: BLM-Identified Alternatives To The Proposed Ivanpah-Control Project (Arcadis, 2023b)

In Spring 2024, spot checks were also performed in the field to assess the presence of suitable habitat for Crotch bumble bee.

Appendix 4 of this EIR includes a table of potential for occurrence of special-status plant and wildlife species and tables summarizing acres of impact to sensitive biological resources. Other informational resources used in the analysis of biological impacts are provided in Section 3.5.6, References.

3.5.1.1. Regional Setting

The Proposed Project route extends along approximately 262 miles between eleven existing SCE substations across portions of three counties, including Inyo, Kern, and San Bernardino Counties in southeastern California. Existing land use along the proposed route includes primarily open space, with intermittent rural residential uses and communities. The proposed route crosses lands under the jurisdiction of the Bureau of Land Management (BLM), including Areas of Critical Environmental Concern (ACECs), and adjacent to the U.S. Navy's China Lake Naval Air Weapons Station (CLNAWS); see Figure 3.5-1 (Policy Boundaries). The Proposed Project consists of 4 segments, identified below and described further in Chapter 2 and shown on Figure 2-1 (Existing Transmission System).

Segment 1 spans approximately 126 miles of the Owens Valley, which occupies the southwestern portion of the Great Basin Desert, a "cold desert" region that spans a large area between the Sierra Nevada and Rocky Mountains. It is characterized by basin and range topography, which exhibits abrupt changes in elevation between narrow mountain chains and flat arid valleys or basins. The Owens Valley is a north-south trending valley bordered by the Sierra Nevada to the west and the White and Inyo mountain ranges to the east. Elevation in Segment 1 ranges from 4,400 feet above mean sea level (amsl) at the northernmost Control substation to 2,290 feet amsl where the segment terminates in the Mojave Desert (Inyokern Substation).

The Owens Valley is mostly comprised of internally-draining watersheds that terminate in dry lakes or basins. More than half of Segment 1 lies within the Owens Lake watershed. The area experiences cold winters, hot dry summers, and supports primarily saltbush shrublands. South of Owen's Lake, creosote bush scrub becomes more common, transitioning to the northwestern portion of the Mojave Desert. Temperatures in the Owens Valley exhibit seasonal extremes, with winter temperatures in Bishop, at the north end of the Project, averaging 22 degrees Fahrenheit, and summer temperatures averaging 98 degrees Fahrenheit. Yearly precipitation averages 5.2 inches.

Segments 2, 3N, and 3S, totaling 136 miles, are located in the Mojave Desert, a mid-elevation hot, dry desert south of the Sierra Nevada Mountains and east-northeast of the Transverse Ranges. Like the Great Basin, the Mojave Desert has basin and range topography, with widely scattered mountain ranges and broad desert plains (basins) filled with alluvial deposits. Elevation averages about 3,000 feet amsl, with a maximum project elevation of approximately 4,000 feet amsl northwest of Rand in Segment 2. Watersheds in the Mojave Desert also drain internally, and Segments 3N and 3S cross the Mojave River, though these river crossings are generally dry. Typical habitats in the Mojave Desert include creosote bush scrub and Joshua tree woodland.

Mojave Desert climate conditions are generally characterized by large fluctuations in daily temperature, high seasonal winds, and low humidity. Summers in the Mojave Desert typically reach maximum temperatures of 119 degrees Fahrenheit, whereas winter temperatures can reach lows in the single digits. Yearly precipitation averages 4.4 inches.

3.5.1.2. Survey Protocols

Vegetation and wildlife surveys were performed along the Proposed Project alignment in spring and summer 2017 and 2018. Descriptions and results of these surveys along the proposed route are presented in the TLRR Sensitive Species Habitat Report (SSHR), Control-Haiwee (Arcadis, 2019a) and TLRR Sensitive Species and Habitat Report (SSHR), Ivanpah-Coolwater-Kramer-Inyokern (Arcadis, 2019b). The survey area represented in the TLRR encompasses an area greater than the project footprint, which is limited to areas directly and indirectly impacted by construction and operation of the Project, including the construction right-of-way (ROW) and other project features that fall outside of the ROW, such as access roads and material yards. The project ROW and ancillary features vary by segment and are described in Chapter 2. The larger survey area ensures that all biological resources that may be impacted by the Project are considered.

Additional surveying was conducted in 2023, 2024, and 2025 to perform field checks for biological resources since the 2017/2018 surveys, as further described below. In general, the following survey protocols were implemented, and the noted nomenclature will be used throughout this section. Results of the surveys follow.

Surveys Conducted

Vegetation Mapping. Surveys for natural communities were completed between May 8 and 12, 2017. Additional vegetation mapping was conducted on May 3, May 4, June 4, June 5, June 6, July 16, and July 17, 2018. Mapping followed the CDFW-CNPS Protocol for the Combined Vegetation Rapid Assessment

(CNPS, 2016) and the California Manual of Vegetation, 2nd Edition (Sawyer et al., 2009), including the California State Natural Vegetation Communities List (CDFW, 2018). Botanical nomenclature follows the Jepson Manual: Vascular Plants of California, Second Edition (Baldwin et al., 2012). Pertinent volumes of the Flora of North America (Flora of North America Editorial Committee, eds., 1993+) were used for plant identification. Additional vegetation mapping was performed for proposed material yards in 2023, on April 13, 14, 15; 18, 19; 20, 21, 26, July 11, 12, 13, 15, 18, 19, 21, and August 1, and for additional areas in Segment 1 on June 10 and 11, 2024.

Special-Status Plant Surveys. Surveys for special-status plants were conducted between May 8 and 12, 2017, during the appropriate blooming season for target special-status plant species that had moderate to high potential for occurrence. In 2018, spot-check surveys for vegetation mapping were conducted on May 3, May 4, June 4, June 5, June 6, July 16, and July 17, and sensitive plants incidentally observed during these vegetation-focused surveys were recorded. Species were identified with technical keys and photographed. GPS data for each observation was collected using hand-held devices, and the number of individuals and phenology was documented. When feasible, reference sites were visited prior to or during surveys to assess blooming status. Additional surveys for special-status plants were performed for material yards and revisited sites in 2023, on April 11 to 28 and May 2 to 26 for spring-blooming species and June 27, July 11 to 21, August 1, 30, and 31, and September 18 and 26 for summer-blooming species. Sites that were revisited since the 2017/2018 surveys include locations where special-status plants were previously documented, locations where special-status plants may be found, locations identified by BLM (on BLM-administered lands), and newly identified and added project areas (such as access routes or construction work areas). Additional surveying was performed in Segment 1 on May 14, 15, and 16, and June 10 and 11, 2024.

Special-Status Wildlife Surveys. Surveys for special-status wildlife species were conducted between May 8 and 12, 2017. During the 2018 vegetation mapping spot checks, one wildlife biologist visited targeted areas, and any additional observations of special-status wildlife were recorded. Surveys were performed to search for and identify diagnostic signs, including audible calls, prints, scat, nests, skeletal remains, burrows, and habitat features that could support the species. Biologists walked parallel transects spaced approximately 33 feet apart at a pace of 1-1.5 mph and GPS data for each observation was collected using hand-held devices. Vegetation communities were evaluated to determine suitability to support special-status wildlife species and habitat. Additional incidental observations of special-status wildlife were documented during surveys for material yards and revisited sites in 2023 and 2025.

Desert Tortoise Surveys. Protocol-level desert tortoise surveys were performed in the project area between May 8 and 12, 2017. Protocol-level desert tortoise surveys were performed in suitable habitat. Surveys followed methodology described in the Pre-project Field Survey Protocol (USFWS, 2010), with a slight modification: with USFWS agreement, additional belt transects beyond the survey area were limited to a single 60-foot transect beyond the survey area perimeter. The surveys provided 100 percent visual coverage of the survey areas by spacing surveyors at 33-foot intervals in “belt transects,” along the entire length of the 150-foot-wide survey corridor and anticipated disturbance areas, including tower locations, pulling and tensioning sites, and laydown yards (where known). All desert tortoise sign (e.g., live tortoises, burrows, scat, carcasses, and fragments thereof) were documented with GPS data collection and photographs. Desert tortoise incidental sightings were documented in 2025 during special-status wildlife surveys.

Mohave Ground Squirrel Surveys. Surveys were conducted as part of the protocol desert tortoise surveys between May 8 and 12, 2017. Pedestrian surveys were conducted by spacing surveyors at 30-foot intervals to achieve 100 percent coverage for all project areas, including the 150-foot-wide line corridor and anticipated disturbance areas including tower locations (100-foot radius area), pulling and tensioning sites, and laydown yards (where known). Surveyors examined potential burrows for presence and sign of Mohave ground squirrel presence and activity. Passive surveys using wildlife cameras were conducted for 10 days between June 23 and July 3, 2017.

Burrowing Owl Surveys. Burrowing owl (*Athene cunicularia*) surveys were conducted as part of the general sensitive wildlife surveys between May 8 and 12, 2017. Pedestrian surveys were conducted by spacing surveyors at 30-foot intervals to achieve 100 percent coverage of the survey areas, including the 150-foot-wide line corridor and anticipated disturbance areas including tower locations (100-foot radius area), pulling and tensioning sites, and laydown yards (where known). Surveyors documented burrowing owl sightings, burrows, and burrowing owl sign (e.g., whitewash, pellets, feathers, etc.). Additional burrowing owl breeding season protocol surveys were performed in the project area in March, April, May, June, and July 2025 and non-breeding season protocol surveys were performed in the alternative alignments in September, October, and November 2025.

2023 Update Surveys. Special-status plant species surveys were conducted in 2023 to 1) revisit project work areas where observations of special-status plant species were made during 2017 and 2018 surveys, 2) to survey incidental locations not surveyed in 2017 and 2018 surveys (access routes, proposed material yards, or laydown/construction work areas identified since the 2017-2018 surveys), and 3) to survey locations with special-status plant species reported in the CNDDB. Along the three BLM-identified alternative alignments (see Chapter 4), surveys were conducted for vegetation and special-status plants, and incidental observations of special-status wildlife were documented. Surveys were conducted April 11 to 27; May 2 to 24; June 27; July 11 to 29; August 1, 30 to 31; and September 18, 2023 (Arcadis, 2023a).

Jurisdictional Delineation. Jurisdictional delineations were conducted from January 20 to March 3 and March 13 to March 31, 2017, to identify wetlands and non-wetland Waters of the State and Federal Waters of the U.S. (WOTUS) along the project route. Features were identified that are potentially under the jurisdiction of the USACE, CDFW, and RWQCB. For the purposes of the delineation, the project area consisted of a survey buffer extending 75 feet (25 meters) from either side of the alignment centerline and a circle with a 100-foot (30-meter) radius around each existing tower. A supplemental field delineation was conducted in May 2018 to confirm conditions in the field at specific features. Paleochannels (features that may have once conveyed water but lacking recent indications of water flow) and remnants of inactive stream channels that do not exhibit evidence of modern water flow were determined to be non-jurisdictional due to the lack of bed and bank, indicators of ordinary high water mark (OHWM), or active hydrologic connection.

Additional features were mapped May 2 to 5 and May 22 to 26, 2023 for the alternative alignments in Segment 1 of the project area (Arcadis, 2023b; see EIR Chapter 4), May 14 to 16, 2024 in Segment 1, and July 2025 in Segments 1, 3N, and 3S. After the jurisdictional delineations were completed in 2017, the definition of federally jurisdictional wetlands and “waters of the U.S.” have changed several times. The current interpretation is discussed in Section 3.5.2. Considering the changing CWA interpretations and substantial rain events in the project area in recent years, a desktop review of jurisdictional waters was performed in February 2025 to inform the analysis.

Crotch Bumble Bee Habitat Assessment. Spot checks for suitable Crotch bumble bee habitat were performed in April 2024 within the current range of the species. Surveys targeted grasslands and shrublands with preferred foraging plants in the *Fabaceae*, *Apocynaceae*, *Lamiaceae*, *Hydophyllaceae*, *Asclepiadoideae*, and *Asteraceae* families.

Western Joshua Tree Surveys. Western Joshua tree surveys were performed in August 2024 (Arcadis, 2024). Surveys were conducted within Proposed Project work areas that occur within the known range of western Joshua tree to document presence or absence. Where western Joshua tree were observed, a census was performed in accordance with CDFW instructions, in compliance with the Western Joshua Tree Conservation Act California (California Fish & Game Code § 1927). Survey areas included all work areas where western Joshua tree was previously identified along the alignment; all work areas that occurred within the mapped distribution of western Joshua tree (Figure 3.5-3a and Figure 3.5-3b); and any locations within work areas where western Joshua tree was incidentally observed.

3.5.1.3. Vegetation and Habitat

The term habitat refers to the environmental and ecological conditions where a species is found. Wildlife habitat is generally described in terms of vegetation, though a more thorough explanation includes availability or proximity to water; suitable nesting or denning sites; shade; foraging perches; cover sites to escape from predators; soils that are suitable for burrowing or hiding; limited noise and disturbance; or other factors that are unique to each species. Vegetation reflects many aspects of habitat, including regional climate, physical structure, biological productivity, and food resources (for many wildlife species). Thus, vegetation is a useful overarching description for habitat, and it is one of the primary factors in the assessments of habitat suitability.

Vegetation communities throughout the project route support a diversity of wildlife species including nesting and foraging birds and raptors, mammals (especially rodents), reptiles, amphibians, and invertebrates. Vegetation communities identified during the 2017 and 2018 surveys are presented by segment in Section 3.5.1.6 and shown in detail in the TLRR Sensitive Species and Habitat Reports (SSHR) (Arcadis, 2019a, 2019b) (see Appendix G of the Proponent's Environmental Assessment (PEA), Figure 3 Natural Communities).

Undeveloped lands account for nearly all of the survey area. Shrublands are the dominant vegetation type. The most common shrubland vegetation is dominated by creosote bush and/or white bursage scrub, although numerous other shrubland types also occur (see Section 3.5.1.4). These creosote-dominated shrublands are common in Segments 2, 3N, and 3S, and Segment 1 south of the Haiwee Substation (SCE, 2020). The next dominant vegetation communities are shrublands predominantly comprised of one or more saltbush species including allscale scrub, spinescale scrub, shadescale scrub, fourwing saltbush scrub, quailbush scrub, and Parry's saltbush scrub. Saltbush communities are common from the Control Substation to south of the Haiwee Substation and in lowlands and playas in the survey area (SCE, 2020). The dominant shrubland vegetation communities are summarized as follows:

- **Creosote Bush – White Bursage Scrub.** Creosote bush – white bursage scrub is co-dominated by creosote bush and white bursage, typically located on bajadas, rocky slopes, and well-drained flats below 4,000 feet amsl. Associated woody species include shadscale, allscale saltbush, and Mojave indigo bush. Soils are typically well-drained, alluvial, colluvial, and sandy (Arcadis, 2019a).
- **Creosote Bush Scrub.** Creosote bush scrub is dominated by creosote bush, occurring primarily on sandy flats, alluvial fans, bajadas, upland slopes, and intermittent washes below 4,000 feet amsl. Associated woody species include allscale saltbush, cheesebush, and white bursage. Spring annual forbs and grasses also appear after sufficient rainfall in this community. Soils are typically well drained, and creosote bush is often found on bajadas as well as in sandy substrates (Arcadis, 2019a).
- **Allscale scrub.** Allscale scrub is dominated by allscale saltbush, typically located on alluvial fans, rolling hills, terraces, and edges of large, low gradient washes between 250 and 5,000 feet amsl. Allscale scrub may be dominated by just one shrub species, allscale saltbush, along with spring herbaceous species and shrubs such as cheesebush, white bursage, Cooper's goldenbush, and fourwing saltbush. Soils tend to be sandy, or sandy clay loams that are carbonate rich and alkaline.

Woodland vegetation comprises a small portion of vegetated areas, typically found at higher elevations and along streams and portions of the Owens River, Segment 1. Herbaceous vegetation occupies a small portion of vegetated areas, typically found in moist alkali meadows and freshwater wetlands in the Owens River Valley. Non-native communities occupy less than 2 percent of vegetated areas (SCE, 2020).

Sensitive Natural Communities

Sensitive Natural Communities are identified by CDFW, using ranking that considers rarity, threats, and trends at a global (G) and state level (S). Ranks range from 1 (very rare and threatened) to 5 (demonstrably secure). Natural Communities with ranks of S1-S3 are considered sensitive and rare by CDFW (CDFW,

2023), to be addressed in the environmental review processes of CEQA and its equivalents. S4 communities are defined as sensitive and apparently secure; uncommon, but not rare in the state, with some cause for long-term concern due to declines or other factors.

Sensitive natural communities identified during the 2017 and 2018 surveys are presented by segment in Section 3.5.1.6 and shown in detail in the TLRR Sensitive Species and Habitat Reports (SSHR) (Arcadis, 2019a, 2019b) (see Appendix G of the Proponent's Environmental Assessment (PEA), Figure 3 Natural Communities.

The most widespread sensitive natural community is Joshua tree woodland, found sparsely in Segment 1 in the vicinity of the Haiwee Reservoir. Joshua tree woodland is the dominant woodland community in the survey area (SCE, 2020). Joshua tree woodland is comprised of Joshua trees in varying density with any of several other co-dominant shrubs, occurring primarily on gentle alluvial fans, ridges, and gentle to moderate slopes between 2,460 to 5,906 feet amsl. Joshua tree is an indicator species for the Mojave Desert. Associated woody species found in Joshua tree woodland include black brush, winterfat, species of Ephedra, cheesebush, white bursage, rayless goldenhead, and creosote bush. Soils tend to be coarse sands, sandy loam, gravel, or very fine silt (Arcadis, 2019b).

Desert shrubland sensitive communities identified within the survey area include, but are not limited to, bitter brush scrub, Nevada joint fir - Anderson's boxthorn - spiny hop sage scrub, winterfat scrubland, spiny menodora scrub, and Acton's and Virgin River brittle brush - Net-veined goldeneye scrub.

The Mojave Desert is characterized by dominant perennial plant species that are long lived, where density and cover of long-lived species increases with age of the site surface soils. Natural recovery of desert communities is very slow after disturbance due to the extreme temperatures, intense sun, high winds, limited moisture, and low fertility of desert soils (Lovich and Bainbridge, 1999).

Riparian and wetland sensitive communities identified within the survey area include, but are not limited to Fremont cottonwood forest, mesquite thickets, shining willow grove, water birch thicket, and bush seepweed scrub, along with marsh vegetation such as American bulrush marsh, hardstem bulrush marsh, and yerba mansa (Nutall's sunflower and Nevada goldenrod alkaline wet meadow).

These sensitive natural communities also support special-status wildlife species such as desert tortoise, gilded flicker, bank swallow, Mohave ground squirrel, western burrowing owl, least bittern, Bendire's thrasher, banded gila monster, and Mojave fringe-toed lizard.

Special-status Plant Species

In this analysis, special-status plants include those species classified as one or more of the following:

- Listed, proposed for listing, or candidates for listing as threatened or endangered under the federal Endangered Species Act (ESA)
- Listed as threatened or endangered, or candidates for listing under the California Endangered Species Act (CESA), or listed as rare under the California Native Plant Protection Act
- Designated as CRPR (California Rare Plant Rank) List 1 or 2 by the California Native Plant Society. CRPRs are a ranking system developed by CNPS to define and categorize rarity in the California flora. The CRPRs range from presumed extinct species (CRPR 1A) to limited distribution/watchlist species (CRPR 4)[2]

[2] CRPR (California Rare Plant Rank)
1A: Plants presumed extirpated in California and either rare or extinct elsewhere
1B: Plants rare, threatened, or endangered in California and elsewhere
2A: Plants presumed extirpated in California but common elsewhere
2B: Plants rare, threatened, or endangered in California, but more common elsewhere
3: Plants that need more information

- Designated by BLM as Sensitive Plants
- Considered special-status species in local or regional plans, policies, or regulations

Special-status plant species observed during surveys are summarized below. Descriptions of special-status designations, observed locations, habitat suitability, and likelihood of occurrence are included in Appendix 4, Table 4-1. Mapped observations of special-status plants are shown in Figures 3.5-2a through 3.5-2g (Special Status Species, Observed).

Special-status plant species were observed within the survey area, listed below. One state listed species was observed in Segment 1, the Owens Valley checkerbloom (CE).[3] One proposed state listed species, western Joshua tree (CP), is also present in the project area in Segments 1, 3N, and 3S (Appendix 4, Table 4-3). No other state or federal listed plant species were observed in the survey area. The remaining observed special-status plants were designated with a California Rare Plant Rank (CRPR)[2] by the CNPS.

The habitat and geographic ranges of each observed species are summarized in the paragraphs that follow, based on Arcadis (2019 a, b; 2023a) and additional data sources cited therein.

State and Federally Listed Species

The following state and federally listed species were observed with the survey area.

- **Owens Valley checkerbloom.** Owens Valley checkerbloom is listed as *endangered* under the California Endangered Species Act (CESA). It is a perennial herb, flowering in May and June. It is found in fine sandy to clay loams with alkaline crusts in alkaline flats and at the edge of alkaline meadows and springs at elevations ranging from 3,600 to 4,500 feet amsl. It is endemic to the Owens Valley in Inyo County, and its distribution is limited to along the Owens River and near tributary springs and streams at the base of the eastern Sierra Nevada. It was observed in Segment 1.
- **Western Joshua Tree.** Western Joshua tree is a *candidate* for listing as *threatened* under CESA, and BLM considers them as *sensitive*. Joshua tree is an arborescent shrub that grows on slopes and desert flats within the Mojave, and in the far southern reaches of the Great Basin deserts. It typically flowers from March through June, depending on rainfall and the occurrence of freezing temperatures during winter, but can be readily identified at any time of year. Joshua trees are typically located in settings dominated by sandy soils. It was observed in Segments 1, 3N, and 3S. As a candidate for listing as threatened under CESA, western Joshua tree is given the same protection as a formal listing, and any take of western Joshua tree would need to be mitigated pursuant to CESA and the Western Joshua Tree Conservation Act (WJTCA), and any required Incidental Take Permits (ITPs).

Two additional state and federally listed species were not observed in the survey area but could occur in the proposed route based on availability of suitable habitat, observations at reference sites, and/or CNDDB reports.

- **July gold.** July gold is designated as rare under CESA and has a CRPR designation of 1B.3. It occurs in carbonate soils and limestone cliffs in mountainous desert scrub at elevations ranging from about 4,000 to 7,300 feet amsl. It is endemic to California, found in the mountains east and south of the Sierra Nevada, especially in the Inyo and White Mountains. It has low potential to occur in Segment 1.
- **Lane Mountain milkvetch.** Lane Mountain milkvetch is listed as *endangered* under the federal ESA and has a CRPR designation of 1B.1. It occurs in Joshua tree woodland and desert scrub in granitic sands

4: Limited distribution – a watch list
.1 - Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat); .2 – Fairly endangered in California (20-80% occurrences threatened); .3 – Not very endangered in California (<20% of occurrences threatened or no current threats known).

[3] FE = Federal Endangered; FT = Federal Threatened; FC = Federal Candidate.
CE = California Endangered; CT = California Threatened; CC = California Candidate; CSC = California Species of Concern; CR = California Rare

and gravels from 3,000 to 4,000 feet amsl. It is endemic to northeastern San Bernardino County in the vicinity of Fort Irwin in the Mojave Desert. The only extant population is located north of Barstow, north of the proposed route in the Mud Hills, Lane Mountain, and Tiefort Mountains. Designated critical habitat is located outside the proposed route within 5 miles, north of the Barstow-Yermo area. It has low potential to occur in Segment 3N.

- **Mojave tarplant** (SE, 1B.3, BLM S). Mohave tarplant is listed as *endangered* under CESA, has a CRPR designation of 1B.3, and is considered by BLM as *sensitive*. It occurs in moist sites and openings in chaparral, coastal scrub, and riparian scrub at elevations ranging from 2,100-5,250 feet (640-1,600 meters) amsl. It is known from the southern Sierra Nevada Mountains, San Bernardino Mountains, Peninsular Ranges, San Jacinto Mountains, and the Mojave Desert. It has low potential to occur along Segment 1 south of Little Lake.

CRPR Designated Species

The following CRPR List 1 or 2 species were observed within the survey area.

- **Coyote gilia.** Coyote gilia is an annual herb, flowering between April and June. It is found in open areas of Great Basin scrub and pinyon-juniper woodland, sometimes in sandy substrates, between about 4,000 to 5,600 feet amsl. It occurs in the Owens Valley, in Mono, Inyo, and San Bernardino Counties, extending north through Nevada to southeastern Oregon and southwestern Idaho, and east into New Mexico and Colorado. It was observed in Segment 1.
- **Pink funnel lily.** Pink funnel lily is found in sandy to rocky soils in low-lying areas in creosote bush scrub or other desert scrub at elevations from about 330 to 5,300 feet amsl. It occurs in eastern Inyo County, central and eastern San Bernardino County, and northeastern Riverside County. Its range extends east in the Mojave and Great Basin deserts to Wyoming, Colorado, and New Mexico. It was observed in Segment 2 and has low potential to occur in the other segments.
- **Geyer's milk-vetch.** Geyer's milk-vetch is a perennial herb, flowering between April and June. It occurs in sandy soils in open desert scrub at elevations ranging from 3,900 to 6,600 feet amsl. It occurs in Inyo, Mono, and Lassen counties, with extremely limited distribution in each county. Its range extends east into central and western Nevada, Utah, and Wyoming, and north into Oregon and Idaho. It was observed in Segment 1.
- **Inyo County star-tulip.** Inyo County star-tulip is a perennial bulbous herb, flowering from April to July. It occurs in grassy, alkaline meadows and associated scrub vegetation at the upper margins of rivers and springs at elevations ranging from 4,300 to 6,600 feet amsl. It is endemic to the Owens Valley region of California in Inyo and Mono Counties. It was observed in Segment 1.
- **Desert cymopterus.** Desert cympoterus is an herbaceous perennial, flowering in April. It is found in sandy soils, in low-lying areas in shadescale scrub and creosote bush scrub, or other desert scrub and Joshua tree woodland communities, ranging in elevation from 2,300 to 5,200 feet amsl. It is endemic to California and the western Mojave Desert. Populations occur in eastern Kern County, western San Bernardino County, and northeastern Los Angeles County. It was observed in Segments 3N and 3S and has high potential to occur in Segment 2.
- **Sanicle cymopterus.** Sanicle cymopterus is a perennial herb, flowering from April to June. It is found in sandy to gravelly carbonate soils in Joshua tree woodland and desert scrub vegetation in elevations ranging from 3,300 to 5,300 feet amsl. It is endemic to a small portion of for contiguous counties in California (Inyo) and Nevada (Esmerelda, Lincoln, and Nye). In California, its distribution is limited in the Owens Valley to the north end of Haiwee Reservoir and east of the Inyo Mountains. It was observed in Segment 1.

- **Barstow woolly sunflower.** Barstow woolly sunflower is a diminutive spring-blooming annual. It occurs in sandy and gravelly substrates underlain by caliche soils in shadescale scrub, creosote bush scrub, or other desert scrub communities, and on plays and in chenopod scrub at elevations ranging from 1,600 to 2,600 feet amsl. It often occurs in the more alkaline portions of open areas and playas. It is endemic to California and the western Mojave Desert from the Barstow region to the eastern vicinity of Lancaster and Mojave. It was observed in Segment 3N and has high potential to occur in Segments 2 and 3S.
- **Red Rock poppy.** Red rock poppy is a spring-flowering annual, occurring in volcanic and granitic substrates in creosote bush scrub or desert scrub communities at elevations ranging from 2,200 to 4,000 feet amsl. It is endemic to California and the northwestern Mojave Desert, primarily in the Rand and El Paso Mountains. It was observed in Segment 2.
- **Sagebrush loeflingia.** Sagebrush loeflingia is an annual herb, flowering from April to June. It is found in sandy soils underlain with a hardpan or at the edge of a playa or lakebed in Great Basin shrublands from 2,300 to 5,300 feet amsl. It occurs in the western Mojave Desert in Kern, Los Angeles, and San Bernardino counties. It was observed in Segment 1 and has low potential to occur in other segments.
- **Mojave menodora.** Mojave menodora is a spring-flowering shrub, occurring on andesite gravel, rocky hillsides, and canyons in creosote bush scrub or desert scrub communities at elevations ranging from 2,300 to 6,600 feet amsl. It is endemic to California in Inyo and San Bernardino counties, primarily in the central Mojave Desert near Barstow and the surrounding mountains. It was observed in Segments 3N and 3S.
- **Threetooth blazingstar.** Threetooth blazingstar is a spring-flowering annual that is found in well-drained substrates in desert scrub from 2,300 to 3,800 feet amsl. It occurs in the central Mojave Desert around Barstow, extending north to the Owens Valley and Panamint Range, east to the Colorado River, and south to the Anza Borrego Desert. It was observed in Segments 2 and 3S and has high potential to occur in Segments 1 and 3N.
- **Mojave monkeyflower.** Mojave monkeyflower is a spring-flowering annual, found on gravelly banks of desert washes and in sandy openings in desert scrub and Joshua tree woodland communities, ranging in elevation from about 2,000 to 4,000 feet amsl. It is endemic to California in San Bernardino County, primarily around the Barstow region. It was observed in Segment 3S and has moderate potential to occur in Segment 3N.
- **Nevada oryctes.** Nevada oryctes is an annual herb, flowering in May. It is found in sandy soils and dunes at elevations ranging from 4,000 to 5,000 feet amsl. It occurs between the Bishop area south to the north end of Owens Lake, in the Eureka Valley in Inyo County, with its range extending into western Nevada. It was observed in Segment 1.
- **Beaver Dam breadroot, Indian breadroot.** Beaver Dam breadroot, also known as Indian breadroot, is a spring-flowering herbaceous perennial found in in sandy washes and road cuts in Joshua tree woodland and desert scrub at elevations ranging from 2,000 to 5,000 feet amsl. It occurs in the central Mojave Desert around Barstow, and in locations in Nevada and Arizona. It was observed in Segment 3N and has moderate potential to occur in Segment 3S.
- **Parish's popcornflower.** Parish's popcornflower is an herbaceous annual, flowering between May and June. It is found in moist, alkaline areas in grassland, marshland, and desert shrubland and Joshua tree woodland communities in wet, alkaline seeps at elevations ranging from 2,500 to 4,500 feet amsl. It is endemic to desert areas of California, occurring primarily in the Owens Valley region in Inyo and Mono counties. It was observed in Segment 1.
- **Torrey's blazing star.** Torrey's blazing star is a perennial herb, flowering between June to August. It occurs in sandy, rocky, alkaline, and volcanic soils in Great Basin scrub, Mojavean desert scrub, and

pinyon-juniper woodland at elevations ranging from 3,000 to 6,900 feet amsl. It was observed along Segment 1.

- **Inyo phacelia.** Inyo phacelia is an annual herb, flowering between April to August. It occurs in alkaline substrate in meadows and seeps at elevations ranging from 3,700 to 10,500 feet amsl. It is endemic to California in the Owens Valley. It was observed along Segment 1.

Additional CRPR List 1 or 2 species that were not observed but have potential to occur include the following, as described in detail in Appendix 4, Table 4-1 and in the Project Sensitive Species and Habitat Reports (SSHR) (Arcadis, 2019a, b; 2023a):

- Naked/Shockley's milk- vetch (2B.2) (1)[4]
- Bailey's greasewood (2B.3) (1)
- Ripley's aliciella (2B.3) (1)
- Falcate saltbush (2B.2) (1)
- King's eyelash grass (2B.3) (1)
- Pinyon rockcress (2B.3) (1)
- Fiddleleaf hawksbeard (2B.2) (1)
- Horn's milk-vetch (1B.1, BLM S) (1)
- Intermontane lupine (2B.3) (1)
- Desert shredding primrose (2B.3) (1)
- Hot springs fimbristylis (2B.2) (1)
- Frog's-bit buttercup (2B.1) (1)
- Prairie wedge grass (2B.2) (1)
- Western horned seablite (2B.3) (1)
- Foxtail thelypodium (2B.2) (1)
- Charlotte's phacelia (1B.2, BLM S) (1)
- Narrow leaved cottonwood (2B.2) (1)
- Latimer's woodland-gilia (1B.3, BLM S) (1)
- Great Basin onion (2B.3) (1)
- Parry's monkeyflower (2B.3) (1)
- Pinyon Mesa buckwheat (1B.3, BLM S) (1)
- McGee Meadows lupine (1B.3, BLM S) (1)
- Scribner's wheat grass (2B.3) (1)
- DeDecker's clover (1B.3, BLM S) (1)
- Broad-keeled milk-vetch (2B.2) (1)
- Booth's evening- primrose (2B.3) (1, 2)
- Red Rock Canyon monkeyflower (1B.1, BLM S) (2)
- Clokey's cryptantha (1B.2) (2, 3N)
- California alkali grass (1B.2, BLM S) (3N)
- Hillman's silverscale (2B.2) (1, 3N, 3S)
- Spiny-hair blazing star (2B.2) (3N, 3S)
- Parish's phacelia (1B.1, BLM S) (3N, 3S)

Additional CRPR List 3 or 4 species that were observed or have potential to occur include the following, as described in detail in Appendix 4, Table 4-1 and in the Project Sensitive Species and Habitat Reports (SSHR) (Arcadis, 2019a, b; 2023a):

- Crested onion (Inyo onion) (4.3) (1)
- Great Basin eriastrum (4.3) (1)
- White pygmy-poppy (4.2) (1)
- Mexican mosquito fern (4.2) (1)
- Kern Canyon clarkia (4.2) (1)
- Short-pedicelled cleomella (4.2) (1)
- Clustered-flower cryptantha (4.3) (1)
- Naked stemmed daisy (4.3) (1)
- Pine Creek evening-primrose (4.3) (1)
- White-flowered rabbitbrush (4.2) (1)
- Bailey's woolly buckwheat (4.3) (1)
- Inyo Mountains buckwheat (4.3) (1)
- Mountain meadow wild buckwheat (4.3) (1)
- Berger's monkeyflower (3) (1)
- Nevada wormwood (4.3) (1)
- Stiff lomatium (4.3) (1)
- Coso Mountains lupine (4.3) (1)
- Prickle-leaf (3) (1, 2)
- Kern County evening primrose (4.3) (1, 2)
- Golden goodmania (4.2) (1, 3N)
- Solitary blazing star (4.2) (2)
- Torrey's box-thorn (4.2) (3N, 3S)
- Slender nemacladus (4.3) (3S)
- Joshua Tree poppy (4.3) (3S)
- Mojave fishhook cactus (4.2) (2, 3N, 3S)
- Mojave spineflower (4.2) (2, 3N, 3S)
- Death Valley sandmat (4.2) (1, 2, 3N, 3S)
- Mojave indigo bush (4.3) (1, 2, 3N, 3S)
- Mojave monardella (4.2) (1, 2, 3N, 3S)
- Crowned muilla (4.2) (1, 2, 3N, 3S)
- Borrego milkvetch (4.3) (1, 2, 3N, 3S)
- Desert winged-rockcress (4.3) (1)
- Alkali cord grass (4.2) (1)

[4] Segment number.

3.5.1.4. Special-status Wildlife Species

In this analysis, special-status wildlife include those species classified as one or more of the following:

- Listed, proposed for listing, or candidates for listing as threatened or endangered under the federal Endangered Species Act (ESA)
- Species protected under the Bald and Golden Eagle Protection Act (BGEPA)
- Listed as threatened or endangered, or candidates for listing under the California Endangered Species Act (CESA)
- Designated California State Species of Special Concern or California Protected Furbearing Mammal
- Designated by BLM as Sensitive Animal
- Considered special-status species in local or regional plans, policies, or regulations

Special-status wildlife species observed or detected during surveys or with suitable habitat along the proposed route are summarized below. Detailed descriptions of species designations, observed locations, habitat suitability, and potential to occur are included in Appendix 4, Table 4-1. Mapped locations of special-status wildlife observations are shown in Figures 3.5-2a through 3.5-2g (Special Status Species, Observed).

State or Federally Listed Species

Surveys identified four state and/or federal listed wildlife species.

- **Desert Tortoise.** Desert tortoises are listed as *threatened* under both CESA and the federal Endangered Species Acts (ESA). They are found in arid habitats, in the Mojave and Sonoran deserts in southeastern California, southern Nevada, and southwestern Utah. They are widespread in desert shrublands, including creosote bush scrub and Joshua tree woodland, inhabiting sandy flats, rocky foothills, alluvial fans, washes, and canyons with sandy or gravelly soils. Soils must be loose for den construction, but firm enough that dens do not collapse. Desert tortoises occur at elevations ranging from below sea level to 7,300 feet. They are primarily active between March and June and may become active after summer rains in late summer and early fall. They mate in late March and early April, and lay eggs by late May into July that take three to four months to hatch. Live desert tortoise (16) and sign (carcasses, burrows, scat, pallets, tracks) (139) were observed in Segments 3N and 3S. Desert tortoise sign (carcasses, burrows, scat) (19) was observed in Segments 1 and 2. Suitable habitat was found across the extent of the project area between Little Lake in Segment 1 and the Coolwater Substation at the terminus of Segments 3N and 3S (Arcadis, 2025). There is high potential for desert tortoise to occur in suitable habitat along the proposed route.
- **Western Burrowing Owl.** Western burrowing owls are a California *candidate for listing* under CESA and the BLM considers them as *sensitive*. They are ground-dwelling owls that can be found from British Columbia, throughout North America, and into portions of Central and South America. They winter in southern latitudes and are often year-round residents in Southern California. They typically inhabit grasslands, agricultural fields, deserts, and scrublands with gently sloping to flat, open terrain with associated mammal burrows and low-growing vegetation. Western burrowing owls are generally found at elevations from 200 to 5,000 feet. Breeding season occurs from late February through late August. Suitable burrows may be natural or artificial. Burrowing owls may create or modify existing animal burrows, including those of ground squirrel, coyote, kit fox, badger, and desert tortoise. Artificial burrows may include culverts, concrete pipes, irrigation boxes, wood debris piles, and openings in cement or asphalt. They may also be found along washes where mammals and invertebrates are abundant. Western burrowing owl was observed in Segments 1 and 3N.

- **Swainson's Hawk.** Swainson's hawks are listed as *threatened* under CESA and the BLM considers them to *sensitive*. They occupy grasslands with scattered trees, juniper sagebrush flats, riparian areas, and savannas, as well as agricultural and ranch land groves adjacent to grasslands or fields. Swainson's hawks typically nest in solitary trees in small groves along streams or fields, from late March to late August. In California, Swainson's hawks breed from late March to mid-August, with peak activity from late May to late July, and elevations of occupied areas vary from nearly sea level in the Central Valley to 5,000 feet amsl in the Butte Valley. Swainson's hawk was observed in Segment 1.
- **Bank Swallow.** Bank swallows are listed as *threatened* under CESA and the BLM considers them as *sensitive*. They inhabit vertical cliffs or banks with fine-textured sandy soils along rivers, streams, lakes, and reservoirs, where they nest in large colonies. Bank swallows nest primarily in riparian and other lowland habits. In California, bank swallows nest from late March or early April to late June or early July, and nesting colonies occur from sea level to over 6,500 feet amsl at Crowley Lake, Mono County. Bank swallow was observed in Segment 1.
- **Crotch Bumble Bee.** Crotch bumble bee is a *candidate* for listing as threatened or endangered under CESA. It primarily occurs in southwestern California, along the coast and in western deserts and foothills between San Diego and Redding. It inhabits grasslands and shrublands with preferred foraging plants in the Fabaceae, Apocynaceae, Lamiaceae, Hydophyllaceae, Asclepiadoideae, and Asteraceae families. They have also been observed using plants Asclepias, Chaenactis, Lupinus, Meicago, Phacelia, and Salvia, as food. Nests are often located in underground burrows in abandoned rodent nests, or above ground in tufts of grass, old bird nests, rock piles, or cavities in dead trees. Crotch bumble bee was observed in Segment 1 and has moderate potential to occur along Segments 2, 3N, and 3S. As a candidate for listing as threatened or endangered under CESA, Crotch bumble bee is given the same protection as a formal listing, and any take of Crotch bumble bee would need to be mitigated pursuant to CESA and any required Incidental Take Permit.

The following state or federally listed wildlife species were not observed, but potentially suitable habitat was observed along the proposed route.

- **Western Snowy Plover.** Western snowy plovers are listed as *threatened* under the federal ESA and are designated as a California *Species of Special Concern*. They occur year-round in California. Western snowy plovers inhabit sandy beaches, salt pond levees, and shores of large alkali lakes in sandy, gravelly soils or nesting. They nest in natural or scraped depressions on dry ground and can be lined with pebbles and fragments of shells, fish bones, mud, vegetation, or invertebrate skeletons. Nesting occurs from March to September (Shuford and Gardali, 2008). Western snowy plover has high potential to occur in Segments 1, 3N, and 3S.
- **Western Yellow-billed Cuckoo.** Western yellow-billed cuckoo is listed as *threatened* under the federal ESA, *endangered* under CESA, and the BLM considers them as *sensitive*. Critical habitat for western yellow-billed cuckoo is located near the alignment at the south end of Segment 1, west of Inyokern. They nest in dense riparian forest and can be found along the broad, lower flood-bottoms of larger river systems within willow and cottonwood forests. They nest in willow, often mixed with cotton-woods, with lower story of blackberry, nettles, or wild grape. Western yellow-billed cuckoo has low potential to occur in Segments 1, 3N, and 3S.
- **Mohave Ground Squirrel.** Mohave ground squirrels are listed as *threatened* under CESA and the BLM considers them as *sensitive*. They inhabit relatively flat open terrain in Mojave desert scrub between Owens Lake and Barstow, living and nesting in burrows at the base of shrubs. They can be found in creosote bush scrub, saltbush scrub, and Joshua tree woodland communities between 1,000 to 5,000 feet amsl in sandy, alluvial soils. They are most active between March and July, and dormant between July and September. Mohave ground squirrel has high potential to occur in Segments 1, 2, 3N, and 3S.

- **Sierra Nevada Bighorn Sheep.** Sierra Nevada bighorn sheep are listed as *endangered* under the federal ESA, *endangered* under CESA, and are considered as *fully protected* by CDFW. Critical habitat for Sierra Nevada bighorn sheep is located adjacent to the alignment in Segment 1, though suitable habitat does not occur in the project area. They are endemic to the Sierra Nevada Mountains in California and inhabit sparsely vegetated rocky, steep mountain slopes, and are more likely to be found on high plateaus and meadows. During summer, they occupy high elevations and during winter, they forage at lower elevations. They have low potential to occur along Segment 1.
- **Western Bumble Bee.** Western bumble bee is a candidate for listing as threatened or endangered under CESA. It inhabits semi-arid areas near washes or intermittent streams, including valley-foothill and desert riparian habitat with sandy banks, willows, cottonwoods, and sycamores, especially in the northern half of California from sea level to over 6,500 feet amsl. It typically nests underground in abandoned rodent burrows or other cavities and required host plant genera include *Cirsium*, *Cleome*, *Helianthus*, *Lupinus*, *Chrysothamnus*, and *Melilotus*. The Project is outside of the current and historic species' range. There is low potential to occur in Segment 3S.
- **Monarch Butterfly.** The monarch butterfly is a candidate for federal listing under the ESA. While ESA candidate species have no legal protection (USFWS and NMFS, 1998), they may be present in the Project area. Monarchs exhibit long-distance migration and migratory monarchs in the western population primarily overwinter in groves along the coast of California and Baja California, roosting in eucalyptus, Monterey pines, and Monterey cypress trees. Overwintering habitats provide protection from the elements and moderate temperatures in proximity to nectar and water sources (USFWS, 2022). Adult monarchs feed on nectar from a variety of flowers, which is needed for adults throughout the breeding season, migration, and overwintering; however, reproduction depends on presence of milkweed, which is the only food source for larvae (USFWS, 2022). Breeding habitat typically consists of open areas, fields, and roadside areas where a diversity of suitable blooming nectar sources and milkweed are present. In western North America, nectar and milkweed resources are often associated with riparian corridors, and milkweed may function as the principal nectar source for monarchs in more arid regions (USFWS, 2020b). During migration to overwintering sites, most monarchs are in reproductive diapause but continue to need blooming nectar plants distributed throughout the migratory landscape. Monarch butterfly may migrate through the Project area and feed on native flowering plants. There is high potential to occur along Segments 1 and 2, and moderate potential to occur along Segment 3S. The Project site is outside the monarch's coastal overwintering range.

Bald and Golden Eagle Protection Act

- **Bald Eagle.** Bald eagles are protected by the Federal Bald and Golden Eagle Protection Act (BGEPA), designated as a *fully protected species* by the CDFW, and the BLM considers them as *sensitive*. They nest in large old-growth live trees, with open branches, near large water bodies including ocean shores, lake margins, and river habitats for both nesting and wintering. Bald eagle nesting season in California lasts from January to July or August. Bald eagle was observed in Segment 1.
- **Golden Eagle.** Golden eagles are protected by the Federal BGEPA, designated as a fully protected species by the CDFW, and the BLM considers them as sensitive. They typically inhabit mountainous areas, and may be found in open country with forests, woodlands, grasslands, and deserts in mountainous canyon areas. Golden eagles typically nest on steep cliffs and ledges, and less frequently in large trees adjacent to open areas. Golden eagles are year-round residents throughout most of their range in the western U.S. In the southwest, golden eagles are more common migrating during winter. Golden eagles breed from late January through August, and typically during late winter and early spring in the California deserts. Golden eagle was observed in Segments 1 and 2 and has high potential to occur in all segments.

Special-status Species

The following California species of special concern, California fully protected species, or BLM designated sensitive species were observed:

- **Northern Sagebrush Lizard.** Northern sagebrush lizards are considered *sensitive* by the BLM. They inhabit sagebrush and montane shrublands with scattered low brush and sunny areas for basking. They can occur between 500 to 10,500 feet amsl. They are active from spring through fall and hibernate in winter. Eggs are laid between June and August. Northern sagebrush lizard was observed in Segment 1.
- **Northern Harrier.** Northern harriers are a California *species of special concern*. They inhabit large, undisturbed tracts of wetlands and grasslands with low, thick vegetation. They typically breed from March through August in brackish and freshwater marshes, lightly grazed meadows, old fields, tundra, dry upland prairies, and drained marshlands, typically nesting on or near the ground and foraging in grasslands. They typically breed from below sea level up to 9,000 feet amsl (Shuford and Gardali, 2008). Northern harriers are year-round residents of the Owens Valley. Northern harrier was observed in Segment 1.
- **Loggerhead Shrike.** Loggerhead shrikes are a California *species of special concern*. They are year-round residents throughout California, inhabiting open woodlands, savannah, pinyon-juniper woodland, Joshua tree woodland, riparian woodland, desert oases, scrub, and washes in conjunction with sufficient shrubs, trees, posts, fencelines, or other perches. Loggerhead shrikes prefer open country with perches for hunting, and fairly dense shrubs and brush for nesting. In southern California, they nest from January or February to July, from below sea level to 7,500 feet amsl (Shuford and Gardali, 2008). Loggerhead shrike was observed in all segments.
- **Summer Tanager.** Summer tanagers are a California *species of special concern*. They are summer residents in California deserts, inhabiting cottonwood-willow riparian habitat for nesting and foraging. Summer tanagers prefer older, dense stands along streams. Summer tanagers breed between April and August. Summer tanager was observed in Segment 1.
- **Le Conte's Thrasher.** Le Conte's thrashers are a California *species of special concern*. They are year-round residents in the Mojave and Sonoran deserts in California, southern Nevada, southwestern Utah, western Arizona, and northwestern Mexico. They occur in the San Joaquin Valley below 5,250 amsl. Le Conte's thrashers inhabit accumulated leaf litter under shrubs in a variety of woody desert vegetation, particularly broad desert washes, desert scrub, alkali desert scrub, desert succulent shrub, and Joshua tree woodland communities. They occupy areas dominated by saltbush and cholla, nesting in shaded spiny shrubs or cholla. Le Conte's thrashers breed from late January to early June, with a peak from mid-March to mid-April. Le Conte's thrasher has high potential to occur in Segments 2, 3N, and 3S.
- **Yellow-headed Blackbird.** Yellow-headed blackbirds are a California *species of special concern*. They are primarily migrants and summer residents from April to early October, typically inhabiting the borders of lakes or ponds, and wetlands, prairies, mountain meadows, quaking aspen parklands, shallow areas of marshes, and along rivers. They nest from mid-April to late July in cattails, bulrushes, or reeds in freshwater emergent wetlands with dense vegetation and deep water, from near sea level up to 6,600 feet amsl. Nesting is timed with maximum emergence of large aquatic insects (Shuford and Gardali, 2008). Yellow-headed blackbird was observed in Segment 1.
- **Olive-sided Flycatcher.** Olive-sided flycatchers are a California *species of special concern*. They nest in open mature forests with tall trees, which is not present in the project area. Olive-sided flycatcher was observed near Segment 1 (along the Crater Mountain Realignment Alternative; See Chapter 4).
- **American white pelican.** American white pelicans are a California *species of special concern*. They are widely dispersed during migration but nest primarily in the Klamath Basin. The species was observed flying over Segment 1 over the Owens River.

- **Desert Kit Fox.** Desert kit fox is not recognized as rare, but it is a protected fur-bearing mammal. Title 14 of the California Code of Regulations (CCR), Section 460, stipulates that desert kit fox may not be taken at any time. Desert kit foxes inhabit open shrubland habitat with prey (jackrabbits, desert cottontail, rodents) animal habitat. They require loose sandy and loamy soils for excavating dens. Desert kit fox was observed in Segment 3N.

The following special-status wildlife species were not observed, but potentially suitable habitat was observed along the proposed route.

- **Owens Sucker.** Owens suckers are a California *species of special concern*. They are endemic to the Owens River drainage and most common in areas with long runs and few riffles. They occupy backwaters and warmer, lower, and calmer water. Adults needs gravelly riffles in tributary streams for spawning. It has low potential to occur along the Owens River in Segment 1.
- **Northern Leopard Frog.** Northern leopard frogs are a California *species of special concern*. They are highly aquatic and occur in or near quiet, permanent and semi-permanent water, on shorelines in submerged and emergent aquatic vegetation. Many appear to be introduced. Northern leopard frog has low potential to occur in Segment 1.
- **Mojave Fringe-Toed Lizard.** Mojave fringe-toed lizards are a California *species of special concern,* and the BLM considers them as *sensitive*. They are found in desert dunes, desert washes and desert scrub communities in fine, loose, wind-blown sand in sand dunes, dry lakebeds, riverbanks, desert washes, sparse alkali scrub, and desert scrub. Shrubs or annual plants may be necessary to support prey arthropods. They occur from near sea level to 3,000 feet amsl. Mojave fringe-toed lizard has high potential to occur in Segments 3N and 3S.
- **Least Bittern.** Least bitterns are a California *species of special concern*. They are found in loose colonies in freshwater and brackish marshes with tall, dense emergent vegetation, bordering ponds and reservoirs with ample cover. Nests are built on platforms of low in tule above water. In southern California, populations increase from mid-March to mid-April and decrease from late September to mid-October. The breeding season extends from May through August (Shuford and Gardali, 2008). Least bittern has high potential to occur in Segment 1.
- **Mountain plover.** Mountain plovers are a California *species of special concern,* and the BLM considers them as *sensitive*. It occurs in short grasslands, freshly plowed fields, newly sprouting grain fields, and occasionally in bare ground and flat topography. They prefer grazed areas with burrowing rodents within chenopod scrub and valley and foothill grassland communities. There is high potential for mountain plover to occur in Segment 1 during migration.
- **Pallid Bat.** Pallid bats are a California *species of special concern,* and the BLM considers them as *sensitive*. They are year-round residents throughout California, roosting in crevices, caves, mines, hollow trees, and man-made structures between about 200 feet and 6,700 feet amsl. They forage for insects in open desert, grassland, shrubland, woodland, and forest communities, flying close to the ground to capture prey. Maternity colonies form in May and June, with pups born between May and July. This species is very sensitive to disturbance of roosting sites. Pallid bat has moderate potential to occur in Segments 1 and 2.
- **Townsend's big-eared bat.** Townsend's big-eared bats are a California *species of special concern,* and the BLM considers them as *sensitive*. They are found throughout California below alpine and subalpine habitats, in coniferous and deciduous forests and riparian habitats between about 1,500 to 9,000 feet amsl. They occur in arid areas with a nearby water source. They roost in limestone caves, lava tubes, and man-made structures during warm months, hibernating in caves and mines between October and April. In the Mojave Desert region, they are associated with abandoned mines. Maternity colonies form from March to June, with pups born from May to July. Townsend's big-eared bat has high potential to occur in all segments.

- **Spotted Bat.** Spotted bats are a California *species of special concern* and the BLM considers them as *sensitive*. They are found throughout southern and eastern California in arid deserts, grasslands, and mixed conifer forests to about 10,000 feet amsl. They require rock crevices in cliffs or caves for roosting, and they forage in open water and along washes. Mating occurs in the fall, and single pups are born in June. Spotted bat has low to moderate potential to occur in Segments 1 and 2.
- **Yuma Myotis.** Yuma myotis is considered by BLM as *sensitive*. It is associated with permanent water, typically in rivers and streams in riparian, forests, and arid scrublands and deserts. It roosts in bridges, buildings, cliff crevices, caves, mines, and trees. There is moderate potential for it to roost along Segment 1.
- **Western Small-footed myotis.** Western small-footed myotis is considered by BLM as *sensitive*. It occurs in a wide range of habitats, but mostly in arid wooded and brushy uplands near water. Prefers open stands in forests and woodland for foraging and roosts in caves, buildings, mines, and rock crevices. The species' range includes the Owens Valley and northwestern and eastern parts of the Mojave Desert. There is moderate potential for the species to roost in suitable habitat along Segment 1 and Segment 2.
- **Fringed myotis.** Fringed myotis is considered by BLM as *sensitive*. Roosting sites consist primarily of abandoned mines, but include tree snags, rock outcrops, and natural caves. It forages in desert-scrub to fir-pine vegetation communities. Its range includes much of California, including the Owens Valley, but excludes most of California's deserts. There is moderate potential for it to roost along Segment 1.
- **Owens Valley vole.** Owens Valley voles are a California *species of special concern,* and the BLM considers them as *sensitive*. They inhabit rush/sedge meadows, native meadows, riparian scrub, and pastures with friable soils in the Owens Valley. The historic range of the species is confined to the Owens Valley from Bishop to Little Lake. Owens Valley vole has high potential to occur in Segment 1.
- **Mohave River vole.** Mohave river voles are a California *species of special concern*. They occur only in weedy herbaceous growth in wet areas along the Mojave River and may be found in some irrigated pastures, using soft soils for burrowing. There is moderate potential for Mohave River voles to occur along Segments 3N and 3S, where suitable habitat is adjacent to or crossing the Mojave River and connected washes.
- **Western white-tailed jackrabbit.** Western white-tailed jackrabbits are a California *species of special concern*. They occur in sagebrush, subalpine conifer, juniper, alpine dwarf shrub and perennial grassland. Suitable habitat includes open areas with scattered shrubs and exposed flat-topped hills with open stands of trees, brush and herbaceous understory. There is moderate potential for them to occur along Segment 1 north of Tinemaha Reservoir.
- **American badger.** American badgers are a California *species of special concern*. They are found in drier, open stages of shrub, forest, and herbaceous vegetation communities with friable soils up to 12,000 feet amsl. They birth 1 to 5 cubs in March. American badger has high potential to occur in Segments 2, 3N, 3S.
- **San Emigdio blue butterfly.** San Emigio blue butterflies have a CDFW state rank of S1S2 (critically imperiled/imperiled). They are found along the Mojave River near Victorville, and a disjointed population may occur in the southern Owens Valley. Their host plant is four-wing saltbush, which is widespread in arid California and occurs along the proposed route. San Emigdio blue butterfly has high potential to occur in Segment 1.
- **Wong's springsnail.** Wong's springsnails have a CDFW state rank of S2 (imperiled). They inhabit freshwater seeps, headsprings, and spring-fed streams in the Owens Valley. Wong's springsnail has high potential to occur in Segment 1.

CDFW watch list species that were observed or have potential to occur near the project area include Cooper's hawk, Ferruginous hawk, prairie falcon, osprey, white-faced ibis, and black-tailed gnatcatcher. Other notable species include Tule elk, with a state rarity rank of S3, and Costa's hummingbird, a USFWS Bird Species of Conservation Concern, which were observed near Segment 1.

Critical Habitat and Conservation Areas

The USFWS has designated critical habitat for certain federally listed threatened or endangered species. Designated critical habitat for wildlife includes occupied and unoccupied sites for feeding, roosting, cover, shelter, breeding and rearing, and movement or migration and must be managed to protect existing environmental resources tied to the survival and recovery of the listed species.

Critical habitat for desert tortoise overlaps the project alignment, occurs within 5 miles, and suitable habitat is located in the project area. Critical habitat for Sierra Nevada bighorn sheep occurs within 5 miles but does not overlap the alignment and suitable habitat is not present in the project area, as shown on Figures 3.5-4a through 3.5-4c, Critical Habitat and Conservation Areas. Other species with Critical Habitat in the vicinity, outside the 5-mile buffer, include fisher, mountain yellow-legged frog, Sierra Nevada yellow-legged frog, Yosemite toad, Kern Canyon slender salamander, Little Kern golden trout, yellow-billed cuckoo, Inyo California towhee, Lane Mountain milk-vetch, and Southwestern willow flycatcher. Suitable habitat for these species does not occur in the project area.

BLM designated a Mohave Ground Squirrel (MGS) Conservation Area (CDFW, 2019) for the long-term survival of the State threatened Mohave ground squirrel. The project area overlaps with the MGS Conservation Area in all segments (Figures 3.5-4a through 3.5-4c, Critical Habitat and Conservation Areas).

Wildlife Movement

Wildlife migration corridors and movement routes are areas that connect suitable habitat in a region that may otherwise be fragmented by human disturbance, difficult terrain, or unsuitable vegetation. Natural features, including drainages, ridgelines, or contiguous natural habitat may provide routes or corridors for wildlife movement. Wildlife movement routes are critical to survival and reproduction for wildlife species, as they provide expanded access to mates, food, and water across broad geographic areas; allow for dispersal from high-density areas; and facilitate gene flow among populations.

The project route is located along 262 miles of varied terrain primarily in an undeveloped landscape. The California Essential Habitat Connectivity Project identified areas along the proposed route in the Owens Valley and Mojave Desert as Natural Landscape Blocks and Essential Connectivity Areas (Spencer et al., 2010) (see Figures 3.5-5a through 3.5-5c, Wildlife Movement). Natural Landscape Blocks are large, relatively natural habitat blocks that support native diversity. Essential Connectivity Areas are areas essential for ecological connectivity between them.

On BLM-administered lands, Areas of Environmental Concern (ACECs) are designated as part of land use planning to identify where important historic, cultural, scenic, biological, or other natural resources require protection. ACECs may provide opportunities for wildlife movement in protected and managed areas. ACECs overlap the project area in all segments; see discussion in Section 3.13 (Land Use and Planning). The BLM Desert Renewable Energy Conservation Plan (DRECP) identifies a desert linkage network within Plan boundaries that maintains ecological connectivity in areas essential for conserving the unique biological diversity of California's deserts and informs land management and restoration in connectivity zones (Penrod, 2012). Linkage areas are identified throughout the project area, overlapping with all segments.

Existing towns, solar facilities, and associated roads and development along the proposed route may impede movement in these areas. The proposed route in Segments 1 and 2 parallels highways that currently impede wildlife movement between undisturbed native vegetation on either side of these roads.

3.5.1.5. Jurisdictional Waters

Arcadis (2019c, 2019d, 2023b) conducted jurisdictional delineations identifying wetlands and non-wetland Waters of the State and Waters of the U.S. along the project route and alternative alignments that are potentially under the jurisdiction of the USACE, CDFW, and RWQCB. Major rivers include the Owens and Mojave Rivers. Wetland habitats that occur in Segments 1 and 2 include emergent freshwater wetlands, scrub-shrub wetlands, and forested/woodland wetlands. In Segment 1, Little Lake and Haiwee Reservoir support major surface waters along the proposed route. Potentially jurisdictional waters in Segments 3N and 3S are classified as non-vegetated rivers, streams, and washes, consisting of ephemeral dry washes that carry water for short periods of time as the result of seasonal precipitation. There are no major surface waters in Segments 3N and 3S.

Jurisdictional waters are shown in detail in the Wetlands and Other Waters Jurisdictional Delineation Reports for the Project (Arcadis 2019c, 2019d) (see Appendix I of the Proponent's Environmental Assessment (PEA), Attachments E and F. Additional features were mapped in 2023 for the alternative alignments in Segment 1 (Arcadis, 2023b) (refer to Chapter 4).

Since the jurisdictional delineations in 2017, the definition of federally jurisdictional wetlands and "waters of the U.S." (WOTUS) have changed several times. The latest interpretation is discussed in Section 3.5.2. Considering the changing CWA interpretations and substantial rain events in the project area in recent years, a desktop review of jurisdictional waters was performed in February 2025 to inform the analysis. Based on this desktop review, in addition to the previously mapped features, a total of 281 ephemeral drainages, 14 perennial drainages, and 1 wetland may now be considered jurisdictional.

A current assessment of jurisdictional waters would be required prior to construction to support permit applications to USACE, CDFW, and RWQCB.

3.5.1.6. Environmental Setting by Segment

The following descriptions summarize biological resources by project segment, including:

- Vegetation and Habitat
- Sensitive Natural Communities
- Special-Status Plants
- Special-Status Wildlife
- Critical Habitat
- Wildlife Migration Corridors
- Jurisdictional Waters

Refer to Figures 3.5-1 through 3.5-5 for mapped locations for biological resources. Refer to Appendix 4, Table 4-1 for a summary table with details of special-status species occurrence.

Segment 1: Bishop to Inyokern

The occurrences of each community and special-status species in Segment 1 are summarized below based on the information provided in Section 3.5.1.3.

Vegetation and Habitat

Dominant communities in Segment 1 are allscale scrub, creosote bush-white bursage scrub, shadescale scrub, and greasewood scrub. Developed land is also a dominant land use.

- **Allscale scrub.** Allscale scrub is described in Section 3.5.1.1.
- **Creosote bush – white bursage scrub.** Creosote bush – white bursage scrub is described in Section 3.5.1.1.
- **Shadescale scrub.** Shadescale scrub is dominated by shadescale, located on bajadas, flats, lower slopes, rocky hills, valleys, washes, and edges of playas between 1,500 and 8,200 feet amsl. Associated species may include cheesebush, allscale saltbush, Parry's saltbush, greasewood, Mojave indigo bush, and saltgrass. Soils are variable and may be clay rich, carbonate rich, or sandy.

- **Greasewood scrub.** Greasewood scrub is dominated by greasewood, located in dry lake beds, margins of alkaline wetlands, and "sinks" with high water tables and a "salty" soil crust. Soils are typically alkaline or saline. Associated species may include allscale saltbush, Mojave indigo bush, quailbush, Torrey's saltbush, bush seepweed, and saltgrass.

Sensitive Natural Communities

Sensitive natural communities were most prevalent in areas with a high-water table associated with the Owens River drainage, especially near Little Lake, Owens Lake, and between Lone Pine and Big Pine; near streams, rivers, marshes, and washes along the alignment; in rocky upland habitats; and on special substrates such as lava flows. Many sensitive natural communities are located in Segment 1, including Fremont cottonwood forest, Joshua tree woodland, various desert scrub communities, and marsh and meadow communities. CDFW Sensitive Natural Communities are shown in Appendix 4, Table 4-2.

Special Status Plant Species

The following listed threatened or endangered and CRPR list 1 and 2 plant species were observed along the proposed route in Segment 1 or have potential to occur. Special status plant species are described in Section 3.5.1.3. Potential to occur, locations of occurrence, and CRPR list 4 species are described in detail in Appendix 4, Table 4-1.

- Western Joshua tree (CC, BLM S)
- Coyote gilia (2B.2)
- Geyer's milk- vetch (2B.2)
- Inyo County star- tulip (1B.1)
- Sanicle cymopterus (1B.2)
- Sagebrush loeflingia (2B.2)
- Nevada oryctes (2B.1)
- Parish's popcornflower (1B.1)
- Owens Valley checkerbloom (CE, 1B.1)
- July gold (CR, 1B.3)
- Naked/Shockley's milk- vetch (2B.2)
- Bailey's greasewood (2B.3)
- Ripley's aliciella (2B.3)
- Falcate saltbush (2B.2)
- King's eyelash grass (2B.3)
- Pinyon rockcress (2B.3)
- Fiddleleaf hawksbeard (2B.2)
- Horn's milk-vetch (1B.1, BLM S)
- Intermontane lupine (2B.3)
- Desert shredding primrose (2B.3)
- Hot springs fimbristylis (2B.2)
- Frog's-bit buttercup (2B.1)
- Prairie wedge grass (2B.2)
- Western horned seablite (2B.3)
- Foxtail thelypodium (2B.2)
- Charlotte's phacelia (1B.2, BLM S)
- Narrow leaved cottonwood (2B.2)
- Latimer's woodland-gilia (1B.3, BLM S)
- Great Basin onion (2B.3)
- Parry's monkeyflower (2B.3)
- Pinyon Mesa buckwheat (1B.3, BLM S)
- McGee Meadows lupine (1B.3, BLM S)
- Scribner's wheat grass (2B.3)
- DeDecker's clover (1B.3, BLM S)
- Broad-keeled milk-vetch (2B.2)
- Booth's evening- primrose (2B.3)
- Hillman's silverscale (2B.2)

Special Status Wildlife Species

The following special-status wildlife species were observed or have potential to occur along the proposed route in Segment 1. Special-status wildlife species are described in detail in Section 3.5.1.4.

California and federally-listed species observed or potentially occurring, include:

- Desert tortoise (FT, CT)
- Swainson's hawk (CT, BLM S)
- Western yellow-billed cuckoo (FT, SE, BLM S)
- Bank swallow (CT, BLM S)
- Western snowy plover (FT, CSC)
- Sierra Nevada bighorn sheep (FE, SE, FP)
- Mohave ground squirrel (CT, BLM S)
- Crotch bumble bee (CC)
- Monarch butterfly (FC)

California Fully Protected Species, Species of Special Concern, and BLM Sensitive Species observed or potentially occurring, include:

- Northern leopard frog (CSC)
- Owens sucker (CSC)
- Bald eagle (FP, BLM S)
- Golden eagle (FP/WL, BLM S)
- Northern sagebrush lizard (BLM S)
- Western burrowing owl (CC, CSC, BLM S)
- Northern harrier (CSC)
- Loggerhead shrike (CSC)
- Summer tanager (CSC)
- Yellow-headed blackbird (CSC)
- Olive-sided flytcatcher (CSC)
- American white pelican (CSC)
- Least bittern (CSC)
- Mountain plover (CSC, BLM S)
- Pallid bat (CSC, BLM S)
- Townsend's big-eared bat (CSC, BLM S)
- Spotted bat (CSC, BLM S)
- Yuma myotis (BLM S)
- Western small-footed myotis (BLM S)
- Fringed myotis (BLM S)
- Owens Valley vole (CSC, BLM S)
- Western white-tailed jackrabbit (CSC)
- American badger (CSC)
- San Emigdio blue butterfly (S1S2)
- Wong's springsnail (S2)

Critical Habitat

Critical habitat for Sierra Nevada yellow-legged frog and Sierra Nevada bighorn sheep is located west of the project alignment in Segment 1; however suitable habitat does not occur in the project area. Critical habitat for Sierra Nevada yellow-legged frog is designated within 5 miles of the Project alignment southwest of the Control Substation in Segment 1. Critical habitat for Sierra Nevada bighorn sheep is designated adjacent to the project alignment in Segment 1, north of Haiwee Substation. The BLM MGS Conservation Area overlaps the project area around the Haiwee and Coso Substations.

Wildlife Migration Corridors

In Segment 1, contiguous riparian and wetland vegetation occupy the margins of the Owens River from Tinemaha Reservoir to Little Lake. Upland shrublands and woodlands provide cover and foraging habitat along the proposed route. A diverse array of wildlife utilize the rich habitat diversity in the Owens Valley and surrounding mountains, including tule elk *(Cervus elaphus nannodes)* and the Round Valley herd of mule deer *(Odocoileus hemionus)*.

The project route is located along the Pacific Flyway, which links bird breeding grounds in Alaska to wintering areas in tropical climates from Mexico to northern South America. Many migratory bird species use the north-south corridor provided by the Owens Valley in Segment 1 due to the altitude of the surrounding north-south trending Sierra Nevada, White, and Inyo Mountain ranges. Migratory birds use wetlands along the proposed route in Owens Valley as stopover areas along the Flyway.

The California Essential Habitat Connectivity Project identified areas along Segment 1 as Natural Landscape Blocks (Spencer et al., 2010). These areas encompass the foothills and mountainous areas on both sides of the proposed route in the Sierra Nevada and Inyo Mountains between the Control Sub-station to Owens Lake, the west side of the proposed route from Owens Lake to the Inyokern Substation, and the Haiwee Reservoir. An Essential Connectivity Area was identified surrounding the east side of Owens Lake and extending southeast, encompassing the Panamint Range in Death Valley National Park and portions of the Inyo Mountains. The project route occasionally overlaps with Natural Landscape Blocks in Segment 1 north of the Haiwee Reservoir.

ACECs and wildlife linkages surround the project area in Segment 1, primarily south of Lone Pine.

The proposed route in Segment 1 parallels existing highways, which may impede wildlife movement between undisturbed native vegetation on either side of these roads.

Jurisdictional Waters

In Segment 1, wetlands are hydrologically connected or adjacent to the Owens River or lakes in the Owens Valley, which are considered jurisdictional under CWA Sections 404 and 401. Wetland habitats that occur in Segment 1 include emergent freshwater marsh wetlands, scrub-shrub wetlands, and riparian forested/ woodland wetlands. Owens River, Owens Lake, Little Lake, and Haiwee Reservoir support major surface waters. Drainages are unnamed ephemeral non-RPWs or intermittent to perennial RPWs (Relatively Permanent Waters), including the Owens River (Arcadis, 2019c).

For the purposes of delineation, the survey area consisted of a 75-foot buffer on each side of the route centerline, and a 100-foot buffer around each existing tower. Potentially jurisdictional wetlands, USACE and RWQCB jurisdictional non-wetland waters, and CDFW jurisdictional drainages were delineated in the survey area along Segment 1 (Arcadis, 2019c). Allscale saltbush and greasewood, which are dominant along the proposed route in Segment 1, have a wetland indicator status of facultative upland (FACU), a facultative upland plant that typically occurs in non-wetland habitats but may occur in standing water or saturated soils.

Details on jurisdictional waters along the proposed route are included in the Project Jurisdictional Delineation Report (Control-Haiwee) (Arcadis, 2019c).

Segment 2: Inyokern to Kramer Junction

The occurrences of each community and special-status species in Segment 2 are summarized below based on the information provided in Sections 3.5.1.3 and 3.5.1.4 above.

Vegetation and Habitat

Creosote bush scrub is the dominant community in Segment 2. Sub-dominant communities are spinescale scrub and creosote bush – white bursage scrub. Developed land is also a sub-dominant land use. Creosote bush scrub and creosote bush – white bursage scrub are described in section 3.5.1.1.

- **Spinescale scrub.** Spinescale scrub is dominated by spiny saltbush, occurring on alluvial fans, sandy flats, old lake beds perched above drainages from about 160 to 2,600 feet amsl in the Mojave Desert, Carrizo Plain, and San Joaquin Valley. Soils are typically fine, silty clays to moderately sandy clay loams that may be carbonate rich.

Sensitive Natural Communities

Sensitive natural communities were most prevalent in washes, playas, and along the Mojave River along portions of the entire alignment; and on special substrates such as sandy areas and desert pavement. Sensitive communities in Segment 2 are cheesebush – sweetbush scrub, creosote bush – white bursage scrub, creosote bush scrub, fourwing saltbush scrub, spinescale scrub, and winterfat scrubland.

Special Status Plant Species

The following listed threatened or endangered or CRPR List 1 and 2 plant species were observed or have potential to occur along the proposed route in Segment 2. Special status plant species are described in detail in Section 3.5.1.3. Potential to occur, locations of occurrence, and CRPR list 4 species are described in detail in Appendix 4, Table 4-1.

- Pink funnel lily (2B.2)
- Desert cymopterus (1B.2)
- Barstow woolly sunflower (1B.2)
- Red Rock poppy (1B.2)
- Booth's evening- primrose (2B.3)
- Red Rock Canyon monkeyflower (1B.1, BLM S)
- Clokey's cryptantha (1B.2)

Special Status Wildlife Species

The following special-status wildlife species were observed or have potential to occur along the proposed route in Segment 2. Special-status wildlife species are described in detail in Section 3.5.1.4.

California and federally-listed species observed or potentially occurring, include:

- Desert tortoise (FT, CT)
- Crotch bumble bee (CC)
- Mohave ground squirrel (CT, BLM S)
- Monarch butterfly (FC)

California Fully Protected Species, Species of Special Concern, and BLM Sensitive Species observed or potentially occurring, include:

- Golden eagle (FP/WL, BLM S)
- Loggerhead shrike (CSC)
- Le Conte's thrasher (CSC)
- Pallid bat (CSC, BLM S)
- Townsend's big-eared bat (CSC, BLM S)
- Western small-footed myotis (BLM S)
- Spotted bat (CSC, BLM S)
- American badger (CSC)

Critical Habitat

In Segment 2, desert tortoise critical habitat is located in the area surrounding Randsburg Substation and extends south on the east side of the proposed route to the Kramer Substation, in the Fremont-Kramer Critical Habitat Unit. The BLM MGS Conservation Area overlaps the majority of Segment 2.

Wildlife Migration Corridors

Segment 2 crosses remote desert areas with unimpeded corridors connecting undisturbed desert scrub vegetation. Mountain ranges along the proposed route provide contiguous habitat linkages to other more distant mountain ranges in eastern Nevada. Likewise, surrounding undeveloped native vegetation and drainages provide corridors to the more distant Colorado River. The proposed route in Segment 2 parallels existing highways, which may impede wildlife movement between undisturbed native vegetation on either side of these roads.

The California Essential Habitat Connectivity Project identified one area along Segment 2 as an Essential Connectivity Area (Spencer et al., 2010). The project route overlaps the eastern edge of the Essential Connectivity Area encompassing the Rand and El Paso Mountains. ACECs and linkages surround the project area in Segment 2.

Jurisdictional Waters

For the purposes of delineation, the survey area consisted of a 75-foot buffer on each side of the route centerline, and a 100-foot buffer around each existing tower. In Segment 2 drainages are unnamed ephemeral non-RPWs; ephemeral washes characterized as single, low-flow, meandering channels within a wider braided channel network. These drainages cross upland Mojave Desert habitats and are both vegetated and unvegetated within the channels. No wetlands were identified (Arcadis, 2019d).

Spiny saltbush, which is dominant along the proposed route in Segment 2, has a wetland indicator status of facultative (FAC), a facultative species that is equally likely to occur in wetlands as in non-wetlands.

Details on jurisdictional waters are included in the Project Jurisdictional Delineation Report (Ivanpah-Coolwater-Kramer-Inyokern) (Arcadis, 2019d).

Segment 3N: Kramer Junction to Daggett

The occurrences of each community and special-status species in Segment 3N are summarized below based on the information provided in Sections 3.5.1.3 and 3.5.1.4 above.

Vegetation and Habitat

Creosote bush scrub is the dominant community in Segment 3N. Sub-dominant communities are spinescale scrub and creosote bush – white bursage scrub. Developed land is also a sub-dominant land use. Creosote bush scrub and creosote bush – white bursage scrub are described in section 3.5.1.1. Spinescale scrub is described under Segment 2.

Sensitive Natural Communities

Sensitive natural communities were most prevalent in washes, playas, and along the Mojave River along portions of the entire alignment; and on special substrates such as sandy areas and desert pavement. Sensitive communities in Segment 3N are cheesebush – sweetbush scrub, creosote bush – white bursage scrub, creosote bush scrub, fourwing saltbush scrub, shadescale scrub, spinescale scrub, and big galleta shrub-steppe.

Special Status Plant Species

The following listed threatened or endangered or CRPR List 1 or 2 plant species were observed or have potential to occur along the proposed route in Segment 3N. Special status plant species are described in detail in Section 3.5.1.3. Potential to occur, locations of occurrence, and CRPR list 4 species are described in detail in Appendix 4, Table 4-1.

- Western Joshua tree (CC, BLM S)
- Desert cymopterus (1B.2)
- Barstow woolly sunflower (1B.2)
- Mojave menodora (1B.2)
- Threetooth blazingstar (1B.3)
- Mojave monkeyflower (1B.2)
- Beaver Dam breadroot, Indian breadroot (1B.2)
- Lane Mountain milkvetch (FE, 1B.1)
- Clokey's cryptantha (1B.2)
- California alkali grass (1B.2, BLM S)
- Hillman's silverscale (2B.2)
- Spiny-hair blazing star (2B.2)
- Parish's phacelia (1B.1, BLM S)

Special Status Wildlife Species

The following special-status wildlife species were observed or have potential to occur along the proposed route in Segment 3N. Special-status wildlife species are described in detail in Section 3.5.1.4.

California and federally-listed species observed or potentially occurring, include:

- Desert tortoise (FT, CT)
- Western snowy plover (FT, CSC)
- Western yellow-billed cuckoo (FT, SE, BLM S)
- Mohave ground squirrel (CT, BLM S)
- Crotch bumble bee (CC)

California Fully Protected Species, Species of Special Concern, and BLM Sensitive Species observed or potentially occurring, include:

- Mojave fringe-toed lizard (CSC, BLM S)
- Western burrowing owl (CC, CSC, BLM S)
- Loggerhead shrike (CSC)
- Le Conte's thrasher (CSC)
- Mohave River vole (CSC)
- Townsend's big-eared bat (CSC, BLM S)
- Desert kit fox (Fur-bearing mammal, CCR 14 § 460)
- American badger (CSC)

Critical Habitat

In Segment 3N, desert tortoise critical habitat overlaps the western end of the proposed alignment in the Fremont-Kramer Critical Habitat Unit and at the eastern end of the alignment in the Superior-Cronese Critical Habitat Unit. Critical habitat for Lane Mountain milk-vetch is located north of Segment 3N, north of the Tortilla Substation.

Wildlife Migration Corridors

Segment 3N crosses a large plain of native desert vegetation, where agricultural, residential, and solar facility uses are sparsely interspersed along the proposed route. A solar facility is located in the western portion of Segment 3N, north of the proposed route. The town of Yermo lies east of the eastern end of Segment 3N. Nearby natural open areas include the Calico Mountains to the east, Harper Lake to the north, and the Waterman Hills and Michel Range to the south. The Mojave River flows east, crossing Segment 3S west of Barstow, and flowing between Segments 3N and 3S. It crosses Segment 3N near the eastern junction with Segment 3S (Coolwater Substation).

The eastern half of Segment 3N between Hinkley and the Coolwater Substation occurs within an Essential Connectivity Area, located north to south between the San Bernardino and Calico Mountains (Spencer et al., 2010). A second Essential Connectivity Area, located east to west between the New York and Calico Mountains, slightly overlaps the proposed route near the Waterman Hills. ACECs and linkages surround the project area in Segment 3N.

The BLM MGS Conservation Area overlaps the majority of Segment 3N, except for the eastern end east of Barstow.

Jurisdictional Waters

For the purposes of delineation, the survey area consisted of a 75-foot buffer on each side of the route centerline, and a 100-foot buffer around each existing tower. The Mojave River crosses Segment 3N at the very eastern terminus. It is the major surface water feature along the proposed route (Arcadis, 2019c). Except for the Mojave River, waters in Segment 3N are unnamed ephemeral non-RPWs; ephemeral washes characterized as single, low-flow, meandering channels within a wider braided channel network that carry water for short periods of time as the result of seasonal precipitation (Arcadis, 2019c). These drainages cross upland Mojave Desert habitats and are both vegetated and unvegetated within the channels. No wetlands were identified (Arcadis, 2019d).

Spiny saltbush, which is dominant along the proposed route in Segment 2, has a wetland indicator status of facultative (FAC), a facultative species that is equally likely to occur in wetlands as in non-wetlands (Arcadis, 2019a).

Details on jurisdictional waters are included in the Project Jurisdictional Delineation Report (Ivanpah-Coolwater-Kramer-Inyokern) (Arcadis, 2019d).

Segment 3S: Kramer Junction to Barstow to Daggett

The occurrences of each community and special-status species in Segment 3S are summarized below based on the information provided in Sections 3.5.1.3 and 3.5.1.4 above.

Vegetation and Habitat

Creosote bush – white bursage scrub is the dominant community in Segment 3S. Creosote bush scrub is the sub-dominant community. Developed land is also a sub-dominant land use. Creosote bush scrub and creosote bush – white bursage scrub are described in section 3.5.1.1.

Sensitive Natural Communities

Sensitive natural communities were most prevalent in washes, playas, and along the Mojave River along portions of the entire alignment; and on special substrates such as sandy areas and desert pavement. Sensitive communities in Segment 3S are California joint fir – longleaf joint-fir scrub, cheesebush – sweetbush scrub, creosote bush – white bursage scrub, creosote bush scrub, fourwing saltbush scrub, and spinescale scrub.

Special Status Plant Species

The following listed threatened or endangered or CRPR List 1 or 2 plant species were observed or have potential to occur along the proposed route in Segment 3S. Special status plant species are described in detail in Section 3.5.1.3. Potential to occur, locations of occurrence, and CRPR list 4 species are described in detail in Appendix 4, Table 4-1.

- Western Joshua tree (CC, BLM S)
- Desert cymopterus (1B.2)
- Barstow woolly sunflower (1B.2)
- Mojave menodora (1B.2)
- Threetooth blazingstar (1B.3)
- Mojave monkeyflower (1B.2)
- Beaver Dam breadroot, Indian breadroot (1B.2)
- Hillman's silverscale (2B.2)
- Spiny-hair blazing star (2B.2)
- Parish's phacelia (1B.1, BLM S)

Special Status Wildlife Species

The following special-status wildlife species were observed or have potential to occur along the proposed route in Segment 3S. Special-status wildlife species are described in detail in Section 3.5.1.4.

California and federally-listed species observed or potentially occurring, include:

- Desert tortoise (FT, CT)
- Western snowy plover (FT, CSC)
- Western yellow-billed cuckoo (FT, SE, BLM S)
- Mohave ground squirrel (CT, BLM S)
- Crotch bumble bee (CC)
- Western bumble bee (CC)

California Fully Protected Species, Species of Special Concern, and BLM Sensitive Species observed or potentially occurring, include:

- Mojave Fringe-Toed Lizard (CSC, BLM S)
- Loggerhead Shrike (CSC)
- Le Conte's Thrasher (CSC)
- Mohave River vole (CSC)
- Townsend's big-eared bat (CSC, BLM S)
- Desert Kit Fox (Fur-bearing mammal, CCR 14 § 460)
- American Badger (CSC)

Critical Habitat

In Segment 3S, desert tortoise critical habitat overlaps the alignment at the western end of the route in the Fremont-Kramer Critical Habitat Unit and south of the eastern end of the route between the Tortilla and Coolwater Substations in the Ord-Rodman Critical Habitat Unit. The BLM MGS Conservation Area overlaps the western half of Segment 3S.

Wildlife Migration Corridors

Segment 3S crosses a large plain of native desert vegetation in the western half, with heavier anthropogenic uses in the eastern half of the proposed route, including the cities of Hinkley, Barstow, and Daggett where residential and agricultural uses, roads and railroad tracks cross or are adjacent to the proposed route. Nearby natural areas include the Michel Range, located north of the proposed route, north of Barstow, and Daggett Ridge to the south. The Mojave River flows east, crossing Segment 3S west of Barstow, and flowing between Segments 3N and 3S. It crosses Segment 3N near the very eastern junction with Segment 3S (Coolwater Substation). The native desert plain and the surrounding mountain ranges and Mojave River provide unimpeded wildlife movement corridors along the proposed route.

The eastern half of Segment 3S between Hinkley and the Coolwater Substation occurs within an Essential Connectivity Area, located north to south between the San Bernardino and Calico Mountains (Spencer et al., 2010). A Natural Landscape Block occurs to the south, bordering Segment 3S between Barstow and the Coolwater Substation. ACECs and linkages surround the project area in Segment 3S.

Jurisdictional Waters

For the purposes of delineation, the survey area consisted of a 75-foot buffer on each side of the route centerline, and a 100-foot buffer around each existing tower. As mentioned above, the Mojave River flows east, crossing Segment 3S west of Barstow and flowing between the eastern end of Segments 3N and 3S. It is the major surface water feature along the proposed route (Arcadis, 2019c). As in Segment 3N, except for the Mojave River, waters in Segment 3S are unnamed ephemeral non-RPWs; ephemeral washes characterized as single, low-flow, meandering channels within a wider braided channel network that carry water for short periods of time as the result of seasonal precipitation (Arcadis, 2019c). These drainages cross upland Mojave Desert habitats and are both vegetated and unvegetated within the channels. No wetlands were identified (Arcadis, 2019d).

Details on jurisdictional waters are included in the Project Jurisdictional Delineation Report (Ivanpah-Coolwater-Kramer-Inyokern) (Arcadis, 2019d).

3.5.2. Applicable Regulations, Policies, and Standards

The following federal, state, and local laws, ordinances, regulations, and standards apply to biological resources.

3.5.2.1. Federal Regulations, Policies and Standards

Federal Endangered Species Act. The Endangered Species Act (ESA) (16 USC 1531 *et seq.*) establishes legal requirements for the conservation of endangered and threatened species and the ecosystems upon which they depend.

- ***Section 9.*** Section 9 of the ESA lists those actions that are prohibited under the ESA, including take (i.e., to harass, harm, pursue, hunt, wound, or kill) of listed species without special exemption. “Harm” is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or shelter. “Harass” is further defined as actions that create the likelihood of injury to listed species to an extent as to significantly disrupt normal behavior patterns which include breeding, feeding, and shelter.
- ***Section 10.*** Section 10 allows for the "incidental take" of endangered and threatened species by non-Federal entities. Incidental take is defined by the ESA as take that is "incidental to, and not the purpose of, the carrying out of an otherwise lawful activity." Section 10 requires an applicant for an incidental take permit to submit a habitat conservation plan that specifies, among other things, the impacts that are likely to result from the taking and the measures the applicant will undertake to minimize and mitigate such impacts.
- ***Critical Habitat.*** Designation of an area as critical habitat provides a means by which the habitat of an endangered or threatened species can be protected from adverse changes or destruction resulting from federal activities or projects. A critical habitat designation does not set up a preserve or refuge and usually applies only when federal funding, permits, or projects are involved.

Clean Water Act. The Clean Water Act (33 USC 1251 *et seq.*) establishes legal requirements for the restoration and maintenance of the chemical, physical, and biological integrity of the nation’s waters.

- ***Section 401.*** Section 401 requires that an applicant for a federal license or permit that allows activities resulting in a discharge to waters of the United States must obtain a State certification that the discharge complies with other provisions of the Clean Water Act. The Regional Water Quality Control Boards (RWQCBs) administer the certification program in California.
- ***Section 404.*** Section 404 of the CWA regulates the discharge of dredged material, placement of fill material, or certain types of excavation within “waters of the U.S.” (resulting in more than incidental fallback of material) and authorizes the Secretary of the Army, through the Chief of Engineers, to issue

permits for such actions. Implementing regulations by the USACE are found at 33 CFR Parts 320 330. Guidelines for implementation are referred to as the Section 404(b)(1) Guidelines and were developed by the EPA in conjunction with the USACE (40 CFR Parts 230). The Guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative that would have less adverse impacts. In 1989 the USACE and federal Environmental Protection Agency entered into a Memorandum of Agreement to establish a no-net-loss of wetlands policy applicable to mitigation requirements under the Section 404 permitting program.

The definition of federally jurisdictional wetlands and "waters of the U.S." have changed several times recently and the latest interpretation of the CWA is discussed below. In 2020, the US Environmental Protection Agency (USEPA) updated the CWA and its definition of navigable waters (USACE and USEPA, 2020). The Navigable Waters Protection Rule revised the definition of "Waters of the U.S." to encompass traditional navigable waters; perennial and intermittent tributaries that contribute surface water flows to such waters; certain lakes, ponds, and impoundments of jurisdictional waters; and wetlands adjacent to other jurisdictional waters. Ephemeral waters were not included in the Navigable Waters Protection Rule definition of "Waters of the U.S.". In 2021, the USEPA and USACE were directed by the Biden Administration and the U.S. District Court to vacate the 2020 Navigable Waters Protection Rule and revert to the pre-2020 rule. On January 18, 2023, the USEPA published the "Revised Definition of 'Waters of the United States'" (the January 2023 Rule), with a definition of "Waters of the U.S." that reutilized the 2007 Rapanos ruling's permanent and significant nexus standards.

Most recently on May 25, 2023, the U.S. Supreme Court decision in Sackett v. Environmental Protection Agency concluded that the significant nexus standard is inconsistent with the CWA. On August 29, 2023, the USACE and USEPA issued a prepublication of the final rule to amend the January 2023 Rule and define "Waters of the U.S." as follows, once again not including ephemeral waters:

- Traditional navigable waters, the territorial seas, and interstate waters (referred to as "(a)(1) waters");
- Impoundments of "Waters of the US", other than impoundments of waters identified under paragraph (a)(5) (referred to as "(a)(2) waters");
- Tributaries to traditional navigable waters, the territorial seas, and interstate waters that are relatively permanent, standing or continuously flowing bodies of water (referred to as "(a)(3) waters" or "jurisdictional tributaries");
- Wetlands adjacent to and having a continuous surface connection with (a)(1) waters or relatively permanent, standing or continuously flowing (a)(2) waters (referred to as "jurisdictional adjacent wetlands"); or
- Intrastate lakes and ponds not identified as (a)(1) through (4) waters that are relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection to (a)(1) or (a)(3) waters.

This issue is still in flux. On November 20, 2025, the USEPA and USACE published its proposed amended rule, Updated Definition of "Waters of the United States" (USEPA – USACE, 2025). The Federal Register notice states that the proposed rule is intended to implement the overall objective of the Clean Water Act to restore and maintain the quality of the Nation's waters while respecting State and Tribal authority over their own land and water resources. Comments are due on January 5, 2026.

Migratory Bird Treaty Act. The Migratory Bird Treaty Act (MBTA) (16 USC 703 711) is a treaty signed by the United States, Canada, Mexico, and Japan that prohibits take of any migratory bird, including eggs or active nests, except as permitted by regulation (e.g., hunting waterfowl or upland game species). Under the MBTA, "migratory bird" is broadly defined as "any species or family of birds that live, reproduce or migrate within or across international borders at some point during their annual life cycle" and thus

applies to most native bird species. The US Department of Interior has recently issued a memorandum interpreting the MBTA prohibitions as being inapplicable to "incidental take."

Bald and Golden Eagle Protection Act. The BGEPA (16 USC, 668, enacted by 54 Stat. 250) protects bald and golden eagles by prohibiting the taking, possession, and commerce of such birds and establishes civil penalties for violation of this act. Under BGEPA, take includes "disturb," which means "to agitate or bother a bald eagle or a golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

Plant Protection Act of 2000. Prevents importation, exportation, and spread of pests that are injurious to plants, and provides for the certification of plants and the control and eradication of plant pests. The Act consolidates requirements previously contained within multiple federal regulations including the Federal Noxious Weed Act, the Plant Quarantine Act, and the Federal Plant Pest Act.

Desert Renewable Energy Conservation Plan. The purpose of the BLM DRECP is to conserve and manage plant and wildlife communities on BLM lands in the desert regions of California, while facilitating the timely permitting of compatible renewable energy projects. The DRECP LUPA covers over 10 million acres of BLM land. The DRECP LUPA includes plan decisions necessary to adopt a conservation strategy and a streamlined process for the permitting of renewable energy and transmission development on BLM-managed lands, while integrating other uses and resources. This is achieved through the designation of land use allocations for Ecological and Cultural Conservation, Recreation, and Development, and adopting CMAs for resources on public BLM lands throughout the LUPA Decision Area. At the broadest level, the LUPA includes the following components: Development Focus Areas (DFAs), Variance Process Lands (VPLs), General Public Lands, BLM Conservation Areas, and BLM Recreation Areas (BLM, 2016). The DRECP was developed as an interagency plan in 2016, and DFAs, where renewable energy development should be concentrated, were designated by the BLM, in coordination with the U.S. Fish and Wildlife Service (USFWS), California Energy Commission (CEC), and California Department of Fish and Wildlife (CDFW). The BLM ROD for the DRECP was issued in September 2016.

Federal Executive Orders (EO)

- EO 13112 requires federal agencies to use authorities to prevent introduction of invasive species, respond to and control invasions, and provide for restoration of native species and habitat conditions in invaded ecosystems; also established the Invasive Species Council, which prepares a National Invasive Species Management Plan that details and recommends performance-oriented goals and objectives and measures of success for federal agencies.
- EO 13158 requires federal agencies to (1) identify actions that affect natural or cultural resources that are within an MPA; and (2) in taking such actions, to avoid harm to the natural and cultural resources that are protected by an MPA.
- EO 13186 sets forth responsibilities of federal agencies to protect migratory birds.

3.5.2.2. State Regulations, Policies and Standards

California Endangered Species Act. The California Endangered Species Act (CESA) (Fish and Game Code 2050 *et seq.*) establishes the policy of the state to conserve, protect, restore, and enhance threatened or endangered species and their habitats. CESA mandates that state agencies do not approve projects that would jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. For projects that affect a species listed under both CESA and the federal ESA, compliance with the federal ESA will satisfy CESA if CDFW determines that the federal incidental take authorization is consistent with CESA under Fish and Game Code Section 2080.1.

For projects that will result in take of a species listed under CESA but not under the federal ESA, the applicant must apply for a take permit under Section 2081(b).

Fully Protected Designations – California Fish and Game Code Sections 3511, 4700, 5515, and 5050. Prior to enactment of CESA and the federal ESA, California enacted laws to "fully protect" designated wildlife species from take, including hunting, harvesting, and other activities. Unlike the subsequent CESA and ESA, there was no provision for authorized take of designated fully protected species. Currently, 36 fish and wildlife species are designated as fully protected in California, including golden eagle.

California Senate Bill 618 (signed by Governor Brown in October 2011) authorizes take of fully protected species, where pursuant to a Natural Conservation Community Plan, approved by CDFW. The legislation gives fully protected species the same level of protection as is provided under the Natural Community Conservation Planning Act for endangered and threatened species.

Native Birds – California Fish and Game Code Sections 3503 and 3513. California Fish and Game Code Section 3503 prohibits take, possession, or needless destruction of bird nests or eggs except as otherwise provided by the Code; Section 3503.5 prohibits take or possession of birds of prey or their eggs except as otherwise provided by the Code; and Section 3513 provides for the adoption of the MBTA's provisions (above). With the exception of a few non-native birds such as European starling, the take of any birds or loss of active bird nests or young is regulated by these statutes. Most of these species have no other special conservation status as defined above. The administering agency for these sections is the CDFW. As with the MBTA, these statutes offer no statutory or regulatory mechanism for obtaining an incidental take permit for the loss of non-game migratory birds.

California Native Plant Protection Act – California Fish and Game Code Sections 1900 *et seq.* Prior to enactment of CESA and the federal ESA, California adopted the Native Plant Protection Act (NPPA). CESA (above) generally replaces the NPPA for plants originally listed as endangered under the NPPA. However, plants originally listed as rare retain that designation, and take is regulated under provisions of the NPPA. The California Fish and Game Commission has adopted revisions to the NPPA allowing CDFW to issue incidental take authorization for listed rare plants, effective January 1, 2015.

Lake and Streambed Alteration Agreements – California Fish and Game Code Sections 1600-1616. Under these sections of the Fish and Game Code, an applicant is required to notify CDFW prior to constructing a project that would divert, obstruct, or change the natural flow, bed, channel, or bank of a river, stream, or lake. Preliminary notification and project review generally occur during the environmental review process. When a fish or wildlife resource may be substantially adversely affected, CDFW is required to propose reasonable project changes to protect the resource. These modifications are formalized in a Lake and Streambed Alteration Agreement (LSAA) that becomes part of the plans, specifications, and bid documents for the Project. CDFW jurisdiction is determined to occur within the water body of any natural river, stream, or lake. The term "stream," which includes creeks and rivers, is defined in Title 14, CCR, Section 1.72.

California Porter-Cologne Water Quality Control Act. Pursuant to the California Porter-Cologne Water Quality Control Act, the State Water Resources Control Board (SWRCB) and the nine RWQCB may require permits ("waste discharge requirements") for the fill or alteration of "Waters of the State." The term "Waters of the State" is defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code, Section 13050[e]). Although "waste" is partially defined as any waste substance associated with human habitation, the SWRCB interprets this to include fill discharge into water bodies. The SWRCB and the RWQCB have interpreted their authority to require waste discharge requirements to extend to any proposal to fill or alter "Waters of the State," even if those same waters are not under the jurisdiction of the USACE.

Pursuant to this authority, the SWRCB and the RWQCB may require the submission of a "report of waste discharge" under Water Code Section 13260, which is treated as an application for a waste discharge requirement.

3.5.2.3. Local Regulations, Policies and Standards

Inyo County (Segment 1), Kern County (Segments 1, 2), and San Bernardino County (Segments 2, 3N, and 3S) General Plans have goals and policies related to biological resources. Chapter 88.01 of the San Bernardino County Development Code outlines Plant Protection and Management ordinances.

Pursuant to General Order 131-E, the Project is not subject to local land use authority because the CPUC has exclusive jurisdiction over the siting, design and construction of electric power line projects, distribution lines, substations, and electric facilities constructed by public utilities subject to CPUC jurisdiction. Public utilities are directed to consider local regulations and consult with local agencies; however, county and city regulations are not applicable as they do not have jurisdiction over the Project. Further, Section 88.01.030 (Exempt Activities) in the San Bernardino County Development Code states that the provisions of the County's Plant Protection and Management ordinances (Chapter 88.01) shall not apply to the "removal [of regulated trees or plants] by a public utility subject to jurisdiction of the Public Utilities Commission."

3.5.3. Environmental Impacts of the Proposed Project

3.5.3.1. Impact Analysis Approach

The impact assessment presented in this EIR was conducted to identify and disclose potential direct and indirect impacts of the Proposed Project. Examples of potential direct impacts to biological resources include mortality, injury, or displacement of special-status plants or animals; loss or degradation of native habitat; interference with wildlife movement or migration; and disturbance to plants, animals, and habitat from noise, light, or dust. Examples of potential indirect impacts that occur later in time or farther removed in distance, include erosion, sedimentation, intro-duction of invasive species, or increased predation on native wildlife due to habitat alterations (e.g., perch sites or "subsidies" for predators).

The analysis presented in Section 3.5.3.3 (Impacts and Mitigation Measures) is based on the biological resources on the project site, described in Section 3.5.1 (Environmental Setting) and in the Sensitive Species and Habitat Reports (SSHRs) (Arcadis 2019a, 2019b), and on the description of the Proposed Project and alternatives (Chapter 2 of this EIR). In addition, written and oral comments regarding the Project's potential impacts to biological resources during the scoping process, as summarized in the introduction to this Section 3.5, were reviewed to inform the analysis.

The analysis identifies and describes the Proposed Project's expected impacts to biological resources. Acres of impact to vegetation communities and jurisdictional waters are presented to identify the type and scale of effect to habitat. Special-status species with potential to be impacted directly or indirectly by the Project are described. Impacts to biological resources are evaluated based on the assumption that SCE would implement certain protective measures as part of its construction and operations process to reduce impacts to less than significant. These measures include:

- Applicant Proposed Measures (APMs) defined in SCE's application to the CPUC
- Mitigation measures recommended in this EIR, as adopted by the CPUC at the time of project approval, if the Project is approved

These measures are summarized in the analysis of each impact. Chapter 4 provides similar analyses of alternatives to the Proposed Project. Potential impacts on biological resources that may be individually limited, but cumulatively considerable are addressed in Chapter 5.

Applicant Proposed Measures for Biological Resources

The Applicant Proposed Measures (APMs) relevant to potential effects on biological resources are listed in Table 3.5-1. The full text of these measures is presented in Section 2.8 (Project Description); they are summarized in this section due to the length of the APMs for biological resources. Where impact analysis concludes that a mitigation measure (MM) is required and supersedes an APM, the mitigation measure number is noted in Table 3.5-1. Implementation of these APMs is considered part of the Proposed Project for purposes of the evaluation of environmental impacts.

Table 3.5-1. Applicant Proposed Measures – Biological Resources APM

APM Description (summarized; see Section 2.8 for complete text)	
Biological Resources	
APM WEAP ***(Superseded by BIO-1a)***	**Worker's Environmental Awareness Training Program.** [APM requirements include specifics related to the following:] All workers on the 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. **Implementation locations:** Project-wide.
APM BIO-GEN-1 ***(Superseded by BIO-1b)***	**Pre-construction Biological Clearance Surveys and Monitoring**. [APM requirements include specifics related to the following:] 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 previously CPUC approved biologists, 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. **Implementation locations:** Project-wide.
APM BIO-AVI-1	**Nesting Bird Management Plan.** [APM requirements include specifics related to the following:] SCE will prepare a Nesting Bird Management Plan (NBMP) in coordination with CPUC, BLM, CDFW, and USFWS to describe methods to minimize impacts to nesting birds and avoid any potential for unauthorized take. Construction and pre-construction activities would not proceed within 300 feet of active common nests or 500 feet of active raptor nests or nests of special-status bird species without prior approval from by CPUC and BLM in consultation with CDFW and USFWS. Pre-construction nest surveys will be conducted prior to any construction activities scheduled during the breeding period (January 1 through August 31). The NBMP will identify nest buffers and define methods to clearly demarcate and protect buffered areas. Procedures for buffer modification, communication, monitoring and reporting would be defined. The NBMP shall provide a procedure and timing requirements for notifying CPUC, BLM, CDFW, and USFWS of any planned adjustments to nest buffers. Buffer modifications will be reviewed and recommended by a qualified avian biologist, who has been approved by CPUC and BLM in consultation with the CDFW and USFWS. Data on nest locations, project activities in the vicinity of nests, 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). **Implementation locations:** Project-wide.
APM BIO-AVI-2	**Burrowing Owl.** [APM requirements include specifics related to the following:] Pre-construction surveys for burrowing owl will be performed in suitable habitat in accordance with CDFW protocols (CDFG, 2012; or updated) and buffers will be maintained around active burrows. If owls require relocation, a Burrowing Owl Passive Relocation Plan would be developed and implemented to identify locations of burrows, relocation methods, and monitoring and reporting requirements. Relocation would not be permitted during breeding season, unless authorized by CDFW. **Implementation locations:** In suitable habitat, in coordination with CDFW.

APM Description (summarized; see Section 2.8 for complete text)	
APM BIO-AVI-3	**Yellow-billed cuckoo.** [APM requirements include specifics related to the following:] Ground disturbing activities will be avoided within habitat for yellow-billed cuckoo during the nesting season. If habitat cannot be avoided between March 15-September 30, a USFWS approved biologist will perform pre-construction surveys. If a breeding territory or nest is confirmed, USFWS and CDFW will be notified, and an exclusion buffer will be established around the nest in coordination with the agencies. Construction in occupied habitat will be monitored by a full-time agency approved biologist.
APM BIO-AVI-4 ***(Superseded by BIO-1n)***	**Golden Eagle.** [APM requirements include specifics related to the following:] Golden eagle nest surveys will be performed when construction activities are scheduled to occur in or near golden eagle nesting habitat from January 1-July 31. Nesting surveys will determine if any eagle nests are active within a 1-mile radius. An active golden eagle nest shall receive a 1-mile buffer if in line of sight, or 0.5-mile buffer if no line of sight, in coordination with USFWS. **Implementation locations:** In suitable habitat, in coordination with USFWS and CDFW.
APM BIO-HERP-1 ***(Superseded by BIO-1i)***	**Desert Tortoise.** [APM requirements include specifics related to the following:] Pre-activity surveys and construction monitoring for desert tortoise will be performed in suitable habitat. Surveys will be performed by a qualified and approved biologist in all work areas within suitable habitat and a 300-foot buffer. Vacant burrows would be excavated, and desert tortoises will be avoided. If unavoidable, desert tortoises will be allowed to move from harm's way or will be moved only by an agency-approved biologist with authorization from USFWS and CDFW. Construction staff will be required to check under vehicles for tortoises, maintain approved speed limits, and manage wildlife hazards including trash, water, pets, and entrapment threats. **Implementation locations:** In suitable habitat, in coordination with USFWS and CDFW.
APM BIO-HERP-9	**Northern Leopard Frog.** [APM requirements include specifics related to the following:] Pre-activity surveys and construction monitoring for northern leopard frog would be performed in suitable habitat. Construction staff would maintain approved speed limits and manage hazardous fuels to avoid contamination of suitable aquatic habitats. **Implementation locations:** In suitable habitat, in coordination with CDFW.
APM BIO-MAM-1 ***(Supplemented by Bio-1k)***	**Mohave Ground Squirrel.** [APM requirements include specifics related to the following:] To protect the Mohave Ground Squirrel (MGS), SCE would coordinate with CDFW and obtain an incidental take permit (ITP). Typical permit conditions require the preparation of a relocation plan to be approved by CDFW, identifying trapping, handling, and release methods. Pre-construction MGS surveys and construction monitoring would likely be required in suitable habitat by a qualified biologist and MGS burrows would be required to be demarcated and avoided. Regardless of permit conditions, construction staff will be required to maintain approved speed limits, and manage wildlife hazards including trash, water, pets, and entrapment threats to reduce on-site hazards. **Implementation locations:** In suitable habitat, in coordination with CDFW.
APM BIO-MAM-5	**Bighorn Sheep – Nelson's/Desert Bighorn Sheep.** [APM requirements include specifics related to the following:] Pre-construction surveys and construction monitoring for bighorn sheep would be performed in suitable habitat in coordination with resource agencies. Construction and helicopter use near bighorn sheep lambing and watering areas would be avoided seasonally during restricted time periods. Construction staff would manage wildlife hazards including trash, water, and pets. **Implementation locations:** In suitable habitat.
APM BIO-MAM-6 ***(Superseded by BIO-1m)***	**Bats, Common and Sensitive Species.** [APM requirements include specifics related to the following:] Pre-construction surveys to identify active bat roosting or maternity colonies would be performed in suitable habitat. Buffers will be established around active maternity roosts and roosts will be monitored. Removal of roosting structures in the project area will be avoided during the maternity season **Implementation locations:** In suitable habitat.

APM Description (summarized; see Section 2.8 for complete text)	
APM BIO-RES-1	**Develop and Implement Habitat Restoration Plan (HRP).** [APM requirements include specifics related to the following:] SCE will develop and implement a plan to direct revegetation of temporarily disturbed areas, manage dust and erosion control measures, outline criteria for successful restoration, and describe adaptive management. Seeding and revegetation, soil decompaction, erosion control, and non-native control would stabilize soils and improve habitat values in the project area. **Implementation locations:** Project-wide.
APM BIO-RES-2	**Develop Invasive Plant Management Plan (IWMP).** [APM requirements include specifics related to the following:] SCE will manage and control the introduction of non-native weeds after ground disturbance. The IWMP will specify weed species occurring or potentially occurring in the project area, the means to prevent their introduction or spread, monitoring methods to identify infestations, timely implementation of suppression and containment measures, and a reporting schedule. In addition, the IWMP will identify herbicides that may be used for control or eradication, and avoid herbicide use in or around any environmentally sensitive areas. **Implementation locations.** Project-wide.
APM BIO-BOT-1	**Special-status Herbaceous Plants.** [APM requirements include specifics related to the following:] Pre-construction focused surveys for listed threatened or endangered or other special-status plants (i.e., CRPR 1A, 1B, and 2 ranked species; BLM sensitive species) would be performed in suitable habitat during the appropriate blooming season. Avoidance buffers would be established based on locations of surveyed special-status plants. If individuals cannot be avoided, the loss will be mitigated through salvage or off-site compensation. **Implementation locations.** In suitable habitat for special-status plants.
APM BIO-BOT-2	**Special-status Perennial Plants and Other Species.** [APM requirements include specifics related to the following:] Pre-construction surveys will be performed to identify any special-status perennial species or other species of tree, shrub, cactus, or yucca (i.e., Joshua tree; Mohave yucca) in the project area that require restoration or mitigation. Fifty-foot avoidance buffers will be established around the plants. If individuals of special-status species cannot be avoided, a Habitat Restoration Plan (HRP) shall address removal or salvage methods, number of individuals to be impacted, and restoration. For native cacti and shrubby Yucca species, salvage and transplant of impacted individuals may be implemented for mitigation, in accordance with an approved salvage and transplant plan. If restoration is not feasible, compensation lands would be provided that consist of habitat occupied by the impacted sensitive species at a 1:1 ratio of individuals or acreage. **Implementation locations.** In suitable habitat for identified special-status trees, shrubs, cacti, or yucca.
APM BIO-CNDDB-1	**Data Entry.** [APM requirements include specifics related to the following:] Special status species occurrence data will be entered into the California Natural Diversity Database (CNDDB) within one year of project completion. **Implementation locations:** Project-wide.
APM WET-1	**Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats.** [APM requirements include specifics related to the following:] Avoidance and minimization of impacts to all state and federally jurisdictional waters, wetlands, and riparian habitat that occur within the project area to the maximum extent feasible. Implementation of BMPs. If permanent impacts to waters, wetlands, and riparian habitats are unavoidable, they shall be mitigated for at a minimum of a 1:1 ratio. **Implementation locations:** Project-wide.

APM Description (summarized; see Section 2.8 for complete text)	
APMs for Other Resources	
APM AES-8	**Night Lighting during Construction of Facilities.** [APM requirements include specifics related to the following:] If associated with a significant aesthetic impact, night lighting for construction shall be the minimum necessary to ensure safety and security for nighttime activities and operations. All night lighting shall orient lights downward and be shielded to eliminate off-site light spill. Lighting will be either motion-activated or on timers to reduce impact of light pollution at night. **Implementation locations:** Project-wide.
APM HAZ-1	**Prepare a Hazardous Materials Management Plan.** [APM requirements include specifics related to the following:] Herbicides used for non-native removal and fuels used for equipment and vehicles would be managed through implementation of a Hazardous Materials Management Plan. The plan will outline proper hazardous materials handling, use, storage and disposal requirements, as well as hazardous waste management procedures. Procedures for containment and cleanup of spills and restrictions on refueling would be identified. If on site refueling is necessary, BMPs shall be implemented in accordance with the project SWPPP. **Implementation locations:** Project-wide.
APM NOI-1	**Noise Control.** [APM requirements include specifics related to the following:] Construction activities will be confined to daytime, weekday and weekend hours established by the applicable local jurisdiction. Construction equipment will use noise reduction features (e.g., mufflers and engine shrouds). Unnecessary construction vehicle use and idling time will be minimized. **Implementation locations:** Project-wide.

Mitigation Measures

This analysis considers whether the APMs are sufficient to reduce impacts to less than significant levels. Five of the APMs are superseded by specific mitigation measures (as noted in Table 3.5-1) because the analysis in this section concludes that the impacts would remain significant after implementation of the APM. The rationale for superseding APMs with mitigation measures, where this occurs, is presented in the analysis that follows. Other mitigation measures are also recommended to further reduce impacts to less than significant levels. The full text of all mitigation measures is presented for all impacts in Section 3.5.5.

BLM POD and CMAs

Where the Project is implemented on BLM lands, SCE must comply with the requirements of the California Desert Conservation Area (CDCA) Plan (BLM, 2002) and the Bishop Resource Management Plan (RMP) (BLM, 1993). These plans incorporate the relevant requirements of the Desert Renewable Energy Conservation Plan (DRECP) Land Use Plan Amendment (LUPA) (BLM, 2016). The LUPA represents the public-lands component of the DRECP, identifying areas appropriate for renewable energy development, as well as areas important for biological, environmental, cultural, recreation, social, and scenic conservation. The LUPA Area includes the CDCA and portions of the Bishop and Bakersfield RMPs. It also encompasses the Mojave Desert and the Colorado/Sonoran Desert ecoregion subareas in California, including lands in portions of Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego Counties.

The CDCA covers over 10 million acres of BLM land in California and addresses the conservation and management of plant and wildlife communities in the desert regions while facilitating the timely permitting of compatible renewable energy projects. The Bishop RMP was developed to manage approximately 760,000 acres of BLM-administered public land, including surface and federal mineral estate in the Bishop

Resource Area, in the eastern Sierra region, Inyo and Mono Counties, California. The Bishop RMP identifies issue areas including recreation, wildlife, minerals, land ownership, and grazing.

The DRECP identified detailed Conservation Management Actions (CMAs) that must be implemented on BLM-administered lands to avoid and minimize impacts to environmental resources, and that are incorporated into the CDCA and Bishop RMP. As part of SCE's Plan of Development (POD) submitted to the BLM, SCE included the APMs listed in Table 3.5-1 to comply with DRECP CMAs. The mitigation measures recommended in this section for the Proposed Project, as detailed in Section 3.5.5, encompass and are consistent with the requirements of the CMAs.

3.5.3.2. Impact Significance Criteria

A significant impact is defined under CEQA as "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 CEQA Guidelines define direct impacts as those impacts that result from the Project and occur at the same time and place. Indirect impacts are caused by the Project but can occur later in time or farther removed in distance and are still reasonably foreseeable and related to the operation of the Project.

The impact analysis in this section evaluates the potential direct and indirect effects to biological resources due to implementation of the Proposed Project. It further describes mitigation measures as feasible to reduce these impacts to less than significant levels.

Significance Criteria

CPUC reviewed the significance criteria for biological resources from the Environmental Checklist form in Appendix G of the CEQA Guidelines and section 15065 of the Guidelines ("mandatory findings of significance") which are used to determine whether a project or alternatives would result in significant impacts to biological resources as defined by CEQA. For purposes of this EIR, based on the CEQA significance criteria, the following impact definitions were developed to determine if the Project would result in a significant biological impact(s). Further, these impact definitions reflect the unique aspects of transmission line projects such as avian electrocution (see Impact BIO-6 below). An impact would be considered significant, and mitigation would be required if construction or operations and maintenance would:

- **Impact BIO-1:** 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 Wildlife or U.S. Fish and Wildlife Service.
- **Impact BIO-2:** 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 Wildlife or U.S. Fish and Wildlife Service.
- **Impact BIO-3:** Substantially impact jurisdictional wetlands, waters of the U.S., or waters of the state.
- **Impact BIO-4:** 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 BIO-5:** Cause take of protected nesting birds, including nestlings or eggs, through direct impacts to the nest or substantial nearby disturbance which could cause nest abandonment.
- **Impact BIO-6:** Create a substantial collision and electrocution risk for birds or bats.
- **Impact BIO-7:** Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- **Impact BIO-8:** Conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.

3.5.3.3. Impacts and Mitigation Measures

The Cal City Options defined in Section 2.1.1 and illustrated in Figure 2-2 would have no different impacts from those defined for Impacts BIO-1 through BIO-5, because the extent of ground disturbance required for the Proposed Project would be the same as that required for any of the Cal City Options.

Impact BIO 1: 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 Wildlife or U.S. Fish and Wildlife Service.

Potential effects on special-status plants and wildlife could result from construction or operations and maintenance of the Proposed Project. Modifications to habitat may occur from ground disturbance during project construction and operations and maintenance. Individual plants may be directly removed or crushed by equipment and vehicles. Individual animals may be directly predated, injured, or killed by equipment, vehicles, interaction with built facilities, and opportunistic predators.

Potential direct and indirect impacts and mitigation are defined separately for the following components of special status species and their habitat:

- Vegetation and habitat
- Special-status plants
- Special-status wildlife

Construction impacts are described first, followed by impacts of operations and maintenance.

Construction

Vegetation and Habitat

Impact Description. *LESS THAN SIGNIFICANT WITH MITIGATION*. Dominant plant communities are described by segment in Section 3.5.1.3 (Environmental Setting, Vegetation and Habitat) and disturbance acres are shown in Appendix 4, Table 4-2. Potential impacts to riparian and sensitive communities, including Joshua tree woodland, are discussed under Impact BIO-2, and potential impacts to wetlands and jurisdictional waters of the U.S. are discussed under Impact BIO-3.

Project construction would require the installation of new and replacement structures, removal of old structures, preparation and use of work and staging areas, and rehabilitation and construction of roads. These activities would result in ground disturbance and direct and indirect impacts to vegetation and habitat. Project construction would also trim, cut, crush, bury or uproot vegetation, damage roots, or disturb the existing seed bank of native habitats. Removing or damaging seeds or dormant bulbs, corms, and rhizomes would impact plant reproduction and survival of sustainable vegetation communities that support wildlife.

Soils would be affected by ground disturbance, which may result in subsequent erosion or compaction. Topsoil that is impacted may also contain nutrients or mycorrhizae necessary for the health, growth, and reproduction of plant colonies. Fugitive dust from construction activities could accumulate on plant leaves, which could diminish gas exchange or photosynthesis and reduce the growth and vigor of vegetation. Altered hydrology from site preparation or disturbance could directly or indirectly affect native habitats by increasing stormwater runoff, increasing erosion or sedimentation, and degrading habitat conditions. Disturbance to soils and vegetation, in turn, would affect special-status plants in work areas and habitat for special-status wildlife that may be present.

Disturbance of soils may indirectly impact native vegetation and habitat through the incidental introduction and spread of non-native weeds, which may outcompete native species, degrade habitat, and increase fire risk.

While chemical control with herbicides may be necessary to minimize the spread of non-native invasive species following construction, adjacent non-target vegetation and wildlife in treatment areas may be exposed to herbicides in the vicinity. Accidental spills and herbicide drift from treatment areas could be particularly damaging to non-target vegetation. Fuel and oil spills from construction equipment and vehicles could pollute the surrounding environment and degrade vegetation and habitat.

The Proposed Project would result in permanent and temporary loss of vegetation and habitat. The total acres of project ground disturbance within each natural community is provided in Appendix 4, Table 4-2. Permanent impacts would occur in areas that are graded, modified, and permanently dedicated to project use including tower sites, facility sites, and access roads. Temporary impacts would occur in areas that are disturbed and subsequently revegetated such as work areas, staging yards, and helicopter landing zones.

Due to the slow recovery of impacted ecosystems from disturbance, even with restoration of impacted habitats, temporary impacts could lead to long-term or permanent loss or degradation of habitat or other biological resources. For example, in desert shrublands creosote bushes can re-sprout a full canopy within five years after damage from heavy vehicle traffic (Gibson et al., 2004). More severe damage involving vegetation removal and soil disturbance can take from 50 to 300 years for partial recovery. Complete ecosystem recovery may require much longer (Lovich and Bainbridge, 1999). In Joshua tree woodland, complete recovery after disturbance in desert communities can take centuries or millennia (Gucker, 2006). All construction-related impacts are therefore conservatively considered to result in permanent loss of habitat.

In Segments 1 and 2 the entire existing subtransmission line would be removed and replaced (as described in Section 2.2.1), which would result in a relatively greater amount of disturbance. Impacts in Segments 3N and 3S would be less severe, as work areas in the surveyed area would be located at more discrete, distributed, and isolated sites.

Application of APMs. The loss and modification of native desert shrubland vegetation and habitat as a result of project construction could significantly affect special-status species on the project site or in the vicinity. Implementation of the following APMs, which were developed as part of the Project, would address impacts related to vegetation and habitat loss (full text of APMs is presented in Section 2.8 and they are summarized in Table 3.5-1).

- **APM BIO-RES-1 (Develop and Implement Habitat Restoration Plan).**
- **APM BIO-RES-2 (Develop Invasive Plant Management Plan).**
- **APM HAZ-1 (Prepare a Hazardous Materials and Waste Management Plan).**

These APMs implement seeding and revegetation, soil decompaction, erosion control, and non-native control, which would stabilize soils and improve habitat values in the project area. Implementation of the IWMP would improve habitat values and promote recovery of native vegetation in areas disturbed by construction. Procedures for containment and cleanup of spills and restrictions on refueling would minimize the exposure of vegetation and habitat to hazardous materials. However, even with application of APMs, impacts would be significant without mitigation.

Permit Conditions. Impacts to native habitat would be reduced by SCE's compliance with conditions included in permits from USACE, CDFW, and RWQCB. If the Project were approved, SCE would be required to obtain permits to maintain air and water quality and to implement specific requirements to minimize impacts to habitat from fugitive dust, runoff, erosion, and sedimentation in and around work areas.

Mitigation. Even with implementation of APMs and permit conditions, impacts would be significant without mitigation. Mitigation measures are recommended below to avoid and minimize significant impacts and compensate for habitat loss. As defined below and in Table 3.5-1, certain APMs are super-seded by recommended mitigation measures to ensure that impacts to vegetation and habitat would be

less than significant. The full text of these mitigation measures is presented in Section 3.5.5; summaries of the mitigation measures are as follows:

- **Mitigation Measure BIO-1a (Worker Environmental Awareness Program; supersedes APM WEAP).** The mitigation measure provides greater detail and specificity related to the contents of on-site training for construction staff, training to identify and avoid sensitive biological resources, coordination with the project biologists, and abbreviated and refresher trainings. Comprehensive training of on-site workers would ensure that they limit ground disturbance to work areas and that sensitive habitats are avoided.
- **Mitigation Measure BIO-1b (Biological Monitoring; supersedes APM BIO-GEN-1).** The mitigation measure provides greater detail and specificity related to biologist qualifications and responsibilities, and survey, monitoring, and reporting methods and schedules. Qualified biologists would ensure compliance with all biological resource measures and permitting requirements. Biological monitoring would avoid ground and vegetation disturbance outside of approved work areas.
- **Mitigation Measure BIO-1c (Minimization of Vegetation and Habitat Impacts)** would require pre- and post-construction GIS mapping of all disturbance areas to accurately identify the baseline condition and final impacts to vegetation. Work area boundaries would be clearly demarcated with staking, flagging, or other appropriate materials that are readily visible and durable, and approved by the project biologist and the biological monitors prior to construction. Mapping and demarcation of work areas would avoid ground, soil, and vegetation disturbance outside of approved boundaries, minimizing impacts to habitat in the vicinity of work areas.
- **Mitigation Measure BIO-1d (Compensation for Habitat Loss)** would require that SCE prepare a Habitat Compensation Plan that identifies the ratios of compensation for permanent impacts to habitat and the means of compensation, either through off-site habitat acquisition and management or participation in an approved in-lieu fee mitigation bank. The plan would include compensation for any permanent impacts to desert scrub, ESA listed species habitat, USFWS designated critical habitat, sensitive natural communities and riparian habitat (as defined in Impact BIO-2), and jurisdictional waters (defined in Impact BIO-3). Compensation may be nested for habitats common to multiple types or species (i.e., riparian communities that are also sensitive natural communities; desert tortoise habitat types that are also habitat for burrowing owl). Compensation for permanent impacts would offset habitat loss due to project construction activities.

These mitigation measures would ensure that disturbance of vegetation and habitat is minimized and restricted to designated and demarcated work areas, and that habitat loss would be offset. Mitigation measures recommended in other sections of this EIR would also reduce the severity of construction impacts to vegetation and habitat, including:

- **Mitigation Measure AQ-2b (Control Fugitive Dust Emissions)** (see full text in Section 3.4.3.3, Air Quality)
- **Mitigation Measure HW-1a (Drainage Erosion and Sedimentation Control Plan)** (see full text in Section 3.12.3.3, Hydrology and Water Quality)

These mitigation measures would ensure that dust generated from construction, which could accumulate on plants and impact growth, is suppressed and minimized. Erosion resulting from vegetation removal and disturbance of soils would be managed through erosion BMPs, which would prevent loss of soils and protect surrounding vegetation and habitat from degradation.

Impact Conclusion. With implementation of mitigation measures defined above, construction impacts to vegetation and habitat would be less than significant.

Special-Status Plants

Impact Description. *LESS THAN SIGNIFICANT WITH MITIGATION.* Special-status plants that may be present in the project area are listed in Section 3.5.1.3 (Environmental Setting, Vegetation and Habitat), and described in detail in Appendix 4, Table 4-1. Special-status plants were observed during surveys in all segments of the Project (see Section 3.5.1.3). Due to the seasonality of plant occurrences and dependence on fluctuations in annual rainfall, special-status plants not observed, but with potential to occur, may still be present. Unobserved plants may be present as dormant seed, bulbs, or below-ground rootstocks within project footprint sites. Species with moderate to high potential could be found during future surveys of the proposed footprint.

Two state listed plant species were observed in the project area: State endangered Owens Valley checker-bloom and state candidate for listing, western Joshua tree. Owens Valley checkerbloom was observed in one colony along Segment 1 in Baltic and Mexican Rush Marsh vegetation southeast of Independence.

Western Joshua tree distribution overlaps with the project area in Segment 1 near Lone Pine and Owens Lake and near the Haiwee Reservoir; Segment 2 near Ridgecrest; Segments 2, 3N, and 3S at Kramer Junction; and Segment 3N north of Barstow (USFWS, 2018) (Figure 3.5-3a and Figure 3.5-3b). Western Joshua tree woodland was mapped along the project alignment during 2017 and 2018 surveys. Joshua tree woodland occurs along the alignment near the north end of the Haiwee Reservoir and further south near Red Hill, just north of Little Rock in Inyo County, at appropriate elevations on slopes and alluvial fans (Arcadis, 2019a).

Surveys in 2024 identified western Joshua tree along the alignment in Segments 1, 3N, and 3S (Arcadis, 2024) (Figure 3.5-3a and Figure 3.5-3b, Western Joshua Tree and Appendix 4, Table 4-3). Approximately 6,000 western Joshua trees were observed in the survey area, with 96% of individuals occurring along Segment 1 and 3% occurring along Segment 3N. Western Joshua tree most commonly occurred in well-drained gravelly substrates on alluvial fans. Approximately 5% of total trees were dead individuals. The highest mortality was observed at the hot, dry eastern margin of the distribution, north of Barstow.

Critical habitat for federally endangered Lane Mountain milk-vetch is located north of the alignment in Segment 3N; however, suitable habitat is not present in the project area. Many other CRPR[5] ranked species were observed or have potential, as detailed in Section 3.5.1.3 and Appendix 4, Table 4-1.

Impacts to special-status plant species would be similar to those described for Vegetation and Habitat. Potential direct impacts to special-status plants may include direct crushing, burial, or uprooting of individual plants; root damage; disturbance of seed banks, underground dormant plants, and plant nutrients; burial or scour of plants from altered runoff, sedimentation, and erosion; and disruption of photosynthesis from fugitive dust. These impacts would result from trimming or cutting vegetation, clearing and grubbing, grading, earth-moving, and vehicle traffic.

Indirect impacts to special-status plants may occur from incidental introductions of invasive weeds that outcompete native species and reduce habitat quality. Although some impact areas may be temporarily disturbed, the effects to listed plants may be long-term or permanent in that area due to changes in soil conditions and seed banks after construction.

Application of APMs. Project construction could result in the loss or disturbance of western Joshua trees, local populations of special-status plants, and established seed banks, which would be a significant effect

[5] CRPR (California Rare Plant Rank)
1A: Plants presumed extirpated in California and either rare or extinct elsewhere
1B: Plants Rare, Threatened, or Endangered in California and elsewhere
2A: Plants presumed extirpated in California but common elsewhere
2B: Plants Rare, Threatened, or Endangered in California, but more common elsewhere
.1 - Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 – Fairly endangered in California (20-80% occurrences threatened)
.3 – Not very endangered in California (<20% of occurrences are threatened or no current threats known).

to special-status plants on the project site or in the vicinity. The following APMs, developed as part of the Proposed Project, would address special-status plants (full text in Section 2.8):

- **APM BIO-RES-1 (Develop and Implement Habitat Restoration Plan).**
- **APM BIO-RES-2 (Develop Invasive Plant Management Plan).**
- **APM HAZ-1 (Prepare a Hazardous Materials and Waste Management Plan).**
- **APM BIO-BOT-1 (Special-Status Herbaceous Plants).**
- **APM BIO-BOT-2 (Special-status Perennial Plants and Other Species).**
- **APM BIO-CNDDB-1 (Data Entry).**

As described for Vegetation and Habitat, these APMs implement seeding and revegetation, soil decompaction, erosion control, and non-native control, which would stabilize soils, re-establish native vegetation, and improve habitat values in the project area. Procedures for containment and cleanup of spills and restrictions on refueling would minimize the exposure of vegetation and habitat to hazardous materials. Surveying and buffers would avoid direct disturbance and removal of individual special-status plants and minimize disturbance of the seed bank and disruption of supporting soils. Habitat restoration, revegetation, salvage (as feasible), and off-site compensation for impacted individuals would offset the loss of special-status plants in the project area. Reporting of special-status plants would support future management and conservation of individuals and populations in the project vicinity. However, even with application of APMs, impacts would be significant without mitigation.

Permit Conditions. SCE would also be required to comply with conditions included in permits from CDFW and USFWS. If the Project were approved, SCE would be required to obtain permits for take or disturbance of listed species, including western Joshua tree.

A permit for incidental take of western Joshua tree would be obtained from CDFW through a CESA Incidental Take Permit (ITP) or through compliance with the Western Joshua Tree Conservation Act (WJTCA). A CESA Incidental Take Permit (ITP) for western Joshua tree would include requirements and measures from CDFW to avoid, minimize, and compensate for impacts to individual trees and loss of seed bank.

Typical permit conditions include CDFW-protocol census surveys in the project area and 50-foot buffer and development of a Western Joshua Tree Avoidance and Protection Plan, submitted to CDFW prior to construction, to identify avoidance and protection measures. If flowering trees were impacted, a Seed Salvage Plan would also typically be required prior to construction to identify methods for collecting seed and planting. Compensation for trees that cannot be avoided would typically require payment of fees to the Western Joshua Tree Conservation Fund.

If the permittee meets certain conditions, a permit through the WJTCA may be obtained for the incidental take of western Joshua trees by paying specified fees in lieu of conducting mitigation activities. Under the act, all in-lieu fees will be deposited into the Western Joshua Tree Conservation Fund for appropriation to CDFW to manage and preserve western Joshua trees and conservation lands.

If, prior to the start of construction, the California Fish and Game Commission determines that Joshua tree listing under CESA is not warranted and the western Joshua tree were no longer a candidate for listing, an ITP from CDFW would not be required. However, the Project would still be required to comply with the WJTCA.

Mitigation. Even with implementation of APMs and permit conditions, impacts would be significant without mitigation. Additionally, certain APMs are superseded with recommended mitigation measures, as listed below, to ensure that impacts to vegetation and special-status plants would be less than significant. Other mitigation measures are recommended to further avoid disturbance of vegetation and loss of

special-status plants, and to identify detailed requirements for western Joshua tree mitigation. The following mitigation measures are required for Impact BIO-1. The full text of each measure is provided in Section 3.5.5.

- **Mitigation Measure BIO-1a (Worker's Environmental Awareness Program)**; supersedes APM WEAP.
- **Mitigation Measure BIO-1b (Biological Monitoring)**; supersedes APM BIO-GEN-1.
- **Mitigation Measure BIO-1c (Minimization of Vegetation and Habitat Impacts).**
- **Mitigation Measure BIO-1d (Compensation for Habitat Loss).**
- **Mitigation Measure BIO-1e (Pre-Construction Biological Resources Surveys).**

Mitigation Measure BIO-1e would require pre-construction biological resources surveys and "sweeps" of each work site to identify locations of special-status plants, wildlife, and nesting birds occurring in work areas, other portions of the ROW, or in adjacent buffer areas. Pre-construction surveys would minimize and avoid mortality of special-status species by identifying and buffering individuals in disturbance areas.

These mitigation measures would ensure that habitat disturbance is minimized and restricted to designated and demarcated work areas and that habitat loss would be offset. Work areas would be surveyed, and special-status plants would be identified and marked, buffered and avoided, relocated, or salvaged, which would avoid direct impacts. Mitigation measures recommended in other sections of this EIR would also reduce the severity of construction impacts to special-status plants:

- **Mitigation Measure AQ-2b (Control Fugitive Dust Emissions).**
- **Mitigation Measure HW-1a (Drainage Erosion and Sedimentation Control Plan).**

These mitigation measures would ensure that dust generated from construction, which could accumulate on plants and impact growth, is suppressed and minimized. Erosion resulting from vegetation removal and disturbance of soils would be managed through erosion BMPs, which would prevent loss of soils and seed bank and protect surrounding habitat and plant species from degradation.

Impact Conclusion. With implementation of the mitigation measures defined above, impacts to special-status plant species would be less than significant.

Special-Status Wildlife

Impact Description. *LESS THAN SIGNIFICANT WITH MITIGATION.* Special-status wildlife that may be present in the project area are listed in Section 3.5.1.4 (Environmental Setting – Special-status Wildlife Species) and described in detail in Appendix 4, Table 4-1. Species with moderate to high potential that were not observed during surveys may still be present within the proposed footprint.

Four state and/or federally listed threatened or endangered species were observed: desert tortoise, burrowing owl, Swainson's hawk, bank swallow, and Crotch bumble bee. Two additional state and/or federally listed species were not observed but have high potential to occur: Mohave ground squirrel and western snowy plover. Federally and state listed western yellow-billed cuckoo and Sierra bighorn were not observed and have low potential to occur.

Critical habitat for desert tortoise overlaps the project alignment, occurs within 5 miles, and suitable habitat is located in the project area. Critical habitat for Sierra Nevada bighorn sheep occurs within 5 miles of the Proposed Project but does not overlap the alignment and suitable habitat is not present in the project area (see Figures 3.5-4a through 3.5-4c, Critical Habitat and Conservation Areas, and Appendix 4, Table 4-4).

The BLM MGS Conservation Area overlaps the project area in all segments (Figures 3.5-4a through 3.5-4c, Critical Habitat and Conservation Areas).

Other non-listed federally protected or state species of special concern that were observed are bald eagle, golden eagle, northern sagebrush lizard, northern harrier, loggerhead shrike, summer tanager, Le Conte's thrasher, yellow-headed blackbird, olive-sided flycatcher, American white pelican, and desert kit fox. Special-status wildlife that were not observed but have high potential to occur are San Emigdio blue butterfly, Wong's springsnail, northern leopard frog, Mojave fringe-toed lizard, least bittern, mountain plover, pallid bat, Townsend's big-eared bat, spotted bat, Owens Valley vole, and American badger. For a complete list of wildlife species and detailed potential to occur, refer to Appendix 4, Table 4-1.

Construction may result in direct impacts to special-status wildlife, resulting in potential for injury or mortality to individuals. Ground disturbance and clearing would impact vegetation used by wildlife for shelter, nesting and reproduction, and foraging habitat. Habitat degradation resulting from vegetation removal could result in excluding wildlife from portions of their territories.

Construction activities would cause most mobile vertebrate wildlife to leave or attempt to leave the construction area. Wildlife dispersing from the site could be at increased risk of predation and possible vehicle collisions as they flush from cover during site clearing. After leaving their home territories, displaced wildlife may be unable to find suitable food or cover in new, unfamiliar areas. Displacement effects would apply to common and special-status wildlife species.

Construction equipment could present hazards to wildlife. For example, vertical structures create collision hazards for birds or bats in flight. Trenches can be pitfall hazards for terrestrial wildlife. Construction materials such as open pipes or tubing can attract birds or terrestrial species, which can become trapped inside. Open and uncovered water tanks may attract wildlife that may drown without a means of exit. Facilities and equipment may become nest or perch sites for certain birds (common raven, loggerhead shrike) that prey on special-status species (e.g., desert tortoise).

Vehicle traffic and equipment operation associated with construction also would result in increased noise, dust, and vibration. Noise and lighting could affect wildlife in adjacent habitats by disrupting foraging, breeding, sheltering, and other activities; or may cause wildlife to avoid otherwise suitable habitat surrounding the site. Night lighting during construction may affect nocturnal wildlife species, by causing alterations to forage or movement behavior, possibly attracting some species to the site (e.g., bats may be attracted to insects at light sources) or dissuading other species from approaching the site. Increased human presence and resulting water and trash subsidies may attract wildlife to the site or may increase presence of opportunistic predators that prey on special-status species.

Herbicides used to treat invasive weeds may also pose risks to special-status terrestrial or aquatic wildlife species. Herbicides that persist on site could injure wildlife and invertebrate pollinators if they ingest target plants or come into contact with herbicides (e.g., by digging or rolling in treated soil).

Impacts would be temporary during construction and would occur in discrete locations along the ROW.

Application of APMs. The loss and modification of native habitat and direct disturbance, mortality, or injury of special-status wildlife as a result of project construction could significantly affect species on the project site or in the vicinity. The following APMs, which were developed as part of the Project, would address special-status wildlife and their habitat (full text in Section 2.8).

- **APM BIO-RES-1 (Habitat Restoration and Revegetation Plan).**
- **APM BIO-RES-2 (Develop Integrated Weed Management Plan [IWMP]).**
- **APM HAZ-1 (Prepare a Hazardous Materials Management Plan).**
- **APM BIO-AVI-2 (Burrowing Owl).**
- **APM BIO-AVI-3 (Yellow-billed Cuckoo).**
- **APM BIO-HERP-9 (Northern Leopard Frog).**

- **APM BIO-MAM-1 (Mohave Ground Squirrel).**
- **APM BIO-MAM-5 (Bighorn Sheep – Nelson's and Desert Bighorn Sheep).**
- **APM BIO-CNDDB-1 (Data Entry).**
- **APM WET-1 (Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats).**
- **APM AES-8 (Night Lighting during Construction of Facilities).**
- **APM NOI-1 (Implement Best Management Practices for Construction Noise).**

APMs BIO-RES-1 and BIO-RES-2 implement seeding and revegetation, soil decompaction, erosion control, and non-native control, which would stabilize soils and improve post-construction habitat values for wildlife in the project area. Implementation of these APMs would improve habitat values for wildlife and promote recovery of native vegetation by managing non-natives in areas disturbed by construction. Herbicides used for non-native removal and fuels used for equipment and vehicles would be managed through the HMMP, described in APM HAZ-1, which would minimize the exposure of wildlife to hazardous materials.

Species-specific APMs are expected to reduce, in part, the likelihood and severity of injury and the likelihood of mortality of special-status wildlife with potential to occur in the project areas, as discussed in detail below. APM AES-8 would ensure that night lighting is oriented downward and that off-site light spill is minimized. APM NOI-1 would ensure that construction is confined to daytime hours, as feasible. APMs for night lighting and noise (AES-8 and NOI-1) would minimize disturbance of wildlife and disruption of foraging and breeding during nighttime hours. However, even with application of APMs, impacts would be significant without mitigation.

Permit Conditions. SCE would also be required to comply with conditions included in Incidental Take Permits (ITPs) from CDFW and/or USFWS. If the Project were approved, SCE would be required to obtain permits for take or disturbance of listed species, including Crotch bumble bee (State candidate), Mojave desert tortoise (Federal and State threatened), Mohave ground squirrel (State threatened), and western burrowing owl (State candidate). These species are discussed in detail below. ITPs would include requirements from CDFW and/or USFWS to avoid, minimize, and compensate for impacts to individuals, populations, and their habitats. If, prior to the start of construction, the California Fish and Game Commission determines that listing of the candidate species is not warranted and that Crotch bumble bee and/or western burrowing owl are no longer candidates for listing, an ITP for those species would not be required.

Mitigation. Even with implementation of APMs and permit conditions, impacts would be significant without mitigation. The following mitigation measures are recommended to ensure that effects on special-status wildlife are less than significant. Certain APMs are superseded or supplemented with recommended mitigation measures, as listed below, to ensure that impacts to special-status wildlife and their habitat would be less than significant. Other mitigation measures are recommended to avoid disturbance and loss of additional special-status wildlife species. Mitigation Measure BIO-1a through Mitigation Measure BIO-1e were previously summarized for Vegetation and Habitat and Special-Status Plants.

- **Mitigation Measure BIO-1a (Worker's Environmental Awareness Program)** supersedes APM WEAP.
- **Mitigation Measure BIO-1b (Biological Monitoring)** supersedes APM BIO-GEN-1.
- **Mitigation Measure BIO-1c (Minimization of Vegetation and Habitat Impacts).**
- **Mitigation Measure BIO-1d (Compensation for Habitat Loss).**
- **Mitigation Measure BIO-1e (Pre-construction Biological Resources Surveys).**
- **Mitigation Measure BIO-1f (Wildlife Impact Avoidance and Minimization)**.

Mitigation Measure BIO-1f would require management of hazards to wildlife in work areas and protocols for reporting dead or injured wildlife. By restricting vehicle speed limits, monitoring wildlife entrapment, and managing food, trash, and water subsidies, injury and mortality of wildlife would be avoided. Use of directed night lighting and seasonal restrictions on helicopter use would minimize disturbance of wildlife in the project vicinity.

These mitigation measures would ensure that habitat disturbance is minimized and restricted to designated and demarcated work areas and that habitat loss would be offset. Work areas would be surveyed, and special-status wildlife would be identified, monitored, buffered and avoided, or relocated, which would avoid direct injury or mortality. Management of work site hazards would further prevent injury and mortality of special-status wildlife.

The following mitigation measures recommended in other sections of this EIR would also reduce the severity of construction impacts to wildlife and their habitat:

- **Mitigation Measure AQ-2b** (**Control Fugitive Dust Emissions)**; see full text in Section 3.4.3.3.
- **Mitigation Measure HW-1a** (**Drainage Erosion and Sedimentation Control Plan)**; see full text in Section 3.12.3.3.

These mitigation measures would ensure that dust generated from construction, which could disturb wildlife, accumulate on vegetation, and impact growth of wildlife habitat, is suppressed and minimized. Erosion resulting from vegetation removal and disturbance of soils would be managed through erosion BMPs, which would prevent loss of soils and protect wildlife habitat from degradation.

Impact Conclusion. With implementation of the mitigation measures defined above, impacts to special-status wildlife would be less than significant.

Impacts and Conclusion by Wildlife Species

The following paragraphs summarize species-specific impacts. APMs, as previously listed, would address special-status wildlife and their habitat. Species-specific APMs, as applicable, are discussed below. Even with application of APMs, impacts would be significant without mitigation. Habitat degradation and direct mortality or injury would be avoided and minimized for all special-status wildlife with the mitigation measures listed above. Other species-specific mitigation measures, as applicable, are listed below to sufficiently mitigate project impacts. Full text of each APM is provided in Section 2.8. The full text of all mitigation measures is provided in Section 3.5.5.

Invertebrates

Special-status invertebrates (i.e., insects, butterflies) that may occur in the project area are listed in Section 3.5.1.4, and by segment in Section 3.5.1.6. The following describes the listed invertebrate that may be significantly impacted:

Crotch bumble bee. *LESS THAN SIGNIFICANT WITH MITIGATION.* Crotch bumble bee is proposed for State listing under CESA. The project site supports potentially suitable habitat for Crotch bumble bee in grassland and scrub habitats with food plants such as *Asclepias, Chaenactis, Lupinus, Medicago, Eschscholzia, Eriogonum, Phacelia*, and *Salvia* species. One host plant species, thistle sage, was observed along the project alignment and one bee was observed during April 2024 surveys approximately 0.5 mile west of Segment 1, 3 miles south of Haiwee Reservoir.

CNDDB records are located 8 miles west of Segment 1 near Independence, along Independence Creek and near the Haiwee Reservoir in the Coso Range. Two records are located in the Kramer Hills within one mile of Segment 3S, south of Kramer Junction. More recent observations from the iNaturalist online database were documented in 2023 within 7 miles of Segment 2, just south of Ridgecrest, and 15 miles north of Segment 1, north of Bishop, and in 2024 within 0.25 mile east of Segment 1, less than 1 mile south of the

Saltlake Cindercone (iNaturalist, 2024). The project site is at the eastern edge of the species' current range, and while foraging bees may be supported, there is low potential for nesting.

During construction and operations and maintenance, if present, Crotch bumble bee may be deterred from foraging on the project site due to loss and disturbance of vegetation. Individuals may be crushed or buried from clearing and grubbing, grading, earth-moving, and vehicle traffic. Burrows may be destroyed by ground disturbing activities. In most cases, bees would fly away from disturbance to avoid direct mortality; however, host or forage plants may be cleared or damaged and topsoil would be disturbed, where eggs or larvae may be impacted. Noise during construction could disrupt foraging activities or may cause the bee to avoid otherwise suitable habitat surrounding the site. Exposure to vegetation treated with herbicides may injure or kill individuals using those plants for habitat or food.

As a candidate for listing under CESA, SCE would be required to obtain an ITP for take or disturbance of Crotch bumble bee. Typically, CDFW requires permit conditions that would avoid, minimize, and compensate for impacts to individuals, populations, and their habitats.

Even with application of APMs and permit conditions, as previously described, impacts would be significant without mitigation. In addition to the mitigation measures previously listed for all special-status wildlife, the following mitigation measure would apply:

- **Mitigation Measure BIO-1g (Protective Measures for Crotch bumble bee).**

This measure would require training of project personnel, coordination with USFWS, and pre-construction nest surveys for Crotch bumble bee. It would also minimize and avoid disturbance, injury, and mortality. With implementation of mitigation measures, the potential for direct and indirect impacts to Crotch bumble bees would be less than significant.

Monarch butterfly. *LESS THAN SIGNIFICANT.* Monarchs may be present on the project site, primarily in Segment 1. If present, host plants may be destroyed during site preparation, individuals may be displaced, and caterpillars or adults may be crushed. Use of herbicides and herbicide drift could contaminate and degrade non-target host plants and expose individuals to toxic chemicals, resulting in mortality. However, the site is not known to serve a significant role in breeding or migration for the species. In western North America, nectar and milkweed resources are often associated with riparian corridors, which come adjacent to and intersect the project alignment in Segment 1. However, the surrounding Owens Valley and Sierra Nevada Mountains provide vast stretches of open space with high quality habitat the species may use, and project construction would occur in discrete and disjointed locations along the alignment. As a result, impacts to the species are not expected to be significant.

While impacts are considered less-than-significant, any impact would be further reduced with implementation of APMs and MMs, which require using qualified biological staff, training construction crews, demarcating work areas, performing re-vegetation and weed control to improve post-construction values, and protection of wildlife using inspections and BMPs for work site hazards.

Amphibians, Reptiles, Mammals

Special-status amphibians, reptiles, and mammals that may occur in the project area are listed in Section 3.5.1.4, and by segment in Section 3.5.1.6. Since amphibians, reptiles, and mammals would be similarly impacted by construction they are listed together for impact discussion.

Suitable habitat would be impacted by ground disturbance during construction, resulting in habitat loss and degradation, or spread of non-native weeds that decrease habitat quality. Aquatic amphibians may be impacted by sedimentation and turbidity if construction occurs near occupied waters. Construction could cause injury and mortality from crushing by construction equipment or vehicle strikes, especially during the species' active seasons. Most bats would be expected to fly away from disturbances. Individuals sheltering in burrows may be crushed or buried during construction activities, or individuals may fall or become trapped in excavation areas, project materials, and open water tanks, which could injure the

animal or make it more susceptible to predation. Increased human presence attracts opportunistic predators with water and trash. Increased noise, vibration, and artificial light may deter or restrict individuals from accessing shelter, foraging, breeding, or lambing areas. Soil disturbance and compaction may destroy burrows or may leave the area unsuitable for future burrowing. Exposure to herbicides or spilled fuels may injure or kill individuals.

The following describes the special-status amphibians, reptiles, and mammals that may be significantly impacted:

Northern leopard frog. *LESS THAN SIGNIFICANT WITH MITIGATION.* Northern leopard frog is a State Species of Special Concern. They are highly aquatic, and adults may be found up to a mile from the nearest water, but only during or following rains (Zeiner, 1988). The project site supports limited potentially suitable habitat in quiet, permanent and semi-permanent waters with submerged and emergent aquatic vegetation along the Owens River in Segment 1. No leopard frogs have been observed. CNDDB records are documented along the northern end of Segment 1, generally between Fish Springs and Bishop. One record is located within 0.25 mile of the alignment, just south of the Tinemaha Reservoir.

Impacts to northern leopard frog, if present, may include direct loss or disturbance of habitat, mortality or injury from crushing, vehicle strikes, or entrapment, increased predation by opportunistic predators, or contamination of occupied waterways with hazardous fuels or herbicides. Noise, lighting, or vibrations during construction could disrupt sheltering or breeding behaviors or may cause the frog to avoid otherwise suitable habitat surrounding the site.

As previously listed, APM BIO-HERP-9 (Northern Leopard Frog) and APM WET-1 (Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats) would be implemented. These measures require pre-construction surveys, construction monitoring, management of speed limits and hazardous fuels, and minimization of impacts to jurisdictional waters, which would minimize and avoid disturbance, injury, and mortality.

Even with application of APMs and permit conditions, as previously described, impacts would be significant without mitigation. With implementation of the mitigation measures listed and described for all special-status wildlife, above, the potential for direct and indirect impacts to northern leopard frogs would be less than significant.

Mojave Fringe-Toed Lizard and Northern Sagebrush Lizard. *LESS THAN SIGNIFICANT WITH MITIGATION.* Mojave fringe-toed lizard is a State Species of Special Concern and BLM Sensitive. Mojave fringe-toed lizard was not observed, but suitable habitat occurs in desert dunes, desert washes, and desert scrub along the proposed route. Suitable habitat is located between Hinkley near Segment 3N and 3S. There is high potential for Mojave fringe-toed lizards to occur along the proposed route in these areas. CNDDB occurrences and suitable habitat are documented near Harper Lake and the Mojave River.

Northern sagebrush lizard is BLM Sensitive. Northern sagebrush lizards were observed in five locations along Segment 1, near the Control Substation, southwest of Bishop, northeast and south of the Tinemaha reservoir, and near the Alabama Hills. They were found in shrublands within 1,500 feet of a stream or the Owens River. There is high potential for northern sagebrush lizard to occur along Segment 1 in these areas in suitable shrubland vegetation. One CNDDB record is documented near the Haiwee Reservoir, adjacent to Segment 1.

Impacts to Mojave fringe-toed lizard, if present, and northern sagebrush lizard would be similar, and may include direct loss of habitat and burrows, mortality or injury from crushing, vehicle strikes, or entrapment, or increased predation by opportunistic predators. Noise, lighting, or vibrations during construction could disrupt foraging or breeding behaviors or may cause them to avoid otherwise suitable habitat surrounding the site.

Even with application of APMs and permit conditions, as previously described, impacts would be significant without mitigation. In addition to the mitigation measures previously listed for all special-status wildlife, the following mitigation measure would apply:

- **Mitigation Measure BIO-1h (Special-status reptiles)**

This measure would require surveys and avoidance of special-status reptiles, including northern sagebrush lizard and the Mojave fringe-toed lizard, in suitable habitat. Pre-construction surveys would be performed, and occupied burrows would be flagged and avoided with a 50-foot buffer or individuals would be relocated to suitable shelter.

This measure would minimize and avoid disturbance, injury, and mortality to special-status reptiles. With implementation of mitigation measures, the potential for direct and indirect impacts to Mojave fringe-toed lizard and northern sagebrush lizard would be reduced to a less than significant level.

Desert tortoise. *LESS THAN SIGNIFICANT WITH MITIGATION.* Desert tortoise is listed as threatened under both CESA and the federal ESA. Desert tortoise and sign were observed in all segments of the Project (Figures 3.5-2a through 3.5-2g, Special Status Species, Observed). An incidental observation of an adult desert tortoise was made in Segment 1, near the Inyokern Substation in 2017, though no desert tortoises were observed in Segment 1 during protocol surveys. Desert tortoise sign was observed between the Inyokern and Haiwee substations. In Segment 2, 8 burrows were observed. The highest concentration of observations is located in Segments 3N and 3S between Kramer and Barstow, within Mojave desert scrub that provides extensive annual wildflower blooms as a food source. In Segment 3N and 3S, observations documented 111 burrows and 37 occurrences of other sign such as carcass, pallet, scat, and tracks. In Segment 3N, 9 desert tortoises were observed. In Segment 3S, 8 desert tortoises were observed.

Desert tortoises, eggs, or burrows could be injured or killed during clearing or grading activities, where individual tortoises or eggs could be crushed, entombed in their burrows, or struck by vehicles or equipment. This is especially true with juvenile desert tortoises, which are difficult to see due to their small size and profile. Tortoises could become entrapped within open trenches and pipes in work areas. Tortoise foraging, sheltering, or breeding behaviors may be disrupted due to increased human presence and noise or vibrations from heavy equipment. Desert tortoises may be attracted to the construction area by shade beneath vehicles, equipment, or staged construction materials, or the application of water to control dust, placing them at higher risk of injury or mortality.

The project could also provide subsidies and attractants to ravens and other opportunistic predators in the form of water, food sources from trash, nesting materials from cleared brush and debris, and prey flushed from shelter. This could indirectly lead to an increase in predation on the desert tortoise and other species. Ravens prey on juvenile desert tortoises, contributing to an overall decline in tortoise recruitment. New structures could introduce nest or perch sites for opportunistic predators that could prey on desert tortoises. However, existing lattice tower structures would be replaced with tubular steel poles (TSPs), which would reduce perching opportunities along the proposed route as part of the Project.

Construction would directly impact suitable habitat for desert tortoise by permanent removal of habitat and temporary loss or degradation of habitat. Construction activities also could degrade desert tortoise habitat by compacting the soil, causing reduction of food and cover vegetation, promote loss of soil and nutrients, reduced water absorption, and increased difficulty of digging burrows. Construction activities can also introduce or increase the spread of non-native plant species, further degrading tortoise habitat. Suitable desert scrub habitat is found in all segments. The total estimated acres of impact to these habitats are included in Appendix 4, Table 4-2).

As a federal and state listed species, SCE would be required to obtain an ITP for take or disturbance of desert tortoise. Typically, CDFW and USFWS require permit conditions that would avoid, minimize, and compensate for impacts to individuals, populations, and their habitats.

Even with application of APMs and permit conditions, as previously described, impacts would be significant without mitigation. In addition to the mitigation measures previously listed for all special-status wildlife, the following mitigation measures are recommended:

- **Mitigation Measure BIO-1i (Desert Tortoise)** supersedes APM HERP-1. This measure provides greater detail and specificity than the APM, related to handling desert tortoise, moving from harm's way, and relocation to suitable unoccupied burrows. This measure would require pre-construction surveys in suitable habitat within 14 days before construction and construction monitoring. Surveys would be performed in disturbance areas and a surrounding 300-foot buffer. Any discovered burrows would be flagged and avoided or excavated by an Authorized Biologist. Work areas and under vehicles would be inspected for desert tortoises. Desert tortoise would only be handled or moved by an agency-approved biologist, as detailed, with authorization from USFWS and CDFW.
- **Mitigation Measure BIO-1j (Raven Monitoring, Management, and Control Plan).** This measure would require preparation of a Raven Monitoring, Management, and Control Plan to minimize project-related predator subsidies and prevent increased raven activity within desert tortoise habitat. Implementation of the plan would minimize attraction of ravens and other opportunistic predators to the project site, protecting desert tortoise and other prey species.

These measures would minimize and avoid disturbance, injury, and mortality. With implementation of mitigation measures potential for direct and indirect impacts to desert tortoise would be to less than significant.

Desert Tortoise Critical Habitat. Designated critical habitat occurs along the proposed route in Segments 2, 3N, and 3S (Figures 3.5-4a through 3.5-4c, Critical Habitat and Conservation Areas). In Segment 2, CH overlaps the project area around the Randsburg Substation, south to the Kramer Substation, in the Fremont-Kramer CH Unit. In Segments 3N and 3S CH overlaps the project area at the western end in the Fremont-Kramer CH Unit, and at the eastern end in the Superior-Cronese CH Unit. In the Ord-Rodman CH Unit, CH overlaps the project area south of the eastern end, between the Tortilla and Coolwater Substations.

The impacts to critical habitat would be the same as those described for Vegetation and Habitat. Trimming or cutting vegetation, clearing and grubbing, grading, earth-moving, and vehicle traffic may result in direct impacts to critical habitat, including direct crushing, burial, or uprooting of vegetation; root damage; disturbance of seed banks, underground dormant plants, and plant nutrients; and burial or scour of vegetation from altered runoff, sedimentation, and erosion. Soils would be affected by some form of ground disturbance, which may result in subsequent erosion or compaction. Indirect impacts to critical habitat may occur from incidental introductions of invasive weeds that outcompete native species and reduce habitat quality. Disturbance to soils and vegetation would affect the quality of critical habitat for desert tortoise and potential for the species to occupy the area, if present.

Even with application of the APMs previously listed, impacts would be significant without mitigation. Implementation of mitigation measures for habitat and all special-status wildlife, specifically restoration and revegetation of temporarily disturbed areas, management of invasive weeds, biological monitoring and demarcation of work areas, and compensation for loss of habitat, would effectively reduce the impact to critical habitat for desert tortoise to less than significant.

Mohave ground squirrel. *LESS THAN SIGNIFICANT WITH MITIGATION.* Mohave ground squirrel is listed as threatened under CESA and is BLM Sensitive. Mohave ground squirrel have high potential to occur in Segments 1, 2, 3N, and 3S (Figures 3.5-2a through 3.5-2g, Special Status Species, Observed). The BLM MGS Conservation Area overlaps the project area in all segments (Figures 3.5-4a through 3.5-4c, Critical Habitat and Conservation Areas). The historic range for Mohave ground squirrel extends from south Owens Lake near Olancha in Segment 1, south to Kramer Junction, and east to Barstow along Segment 3N/3S, where suitable habitat is present in flat, open terrain with scrub habitat. Many CNDDB occurrences were documented in these areas. While no Mohave ground squirrels were observed during surveys, there is

high potential for them to occur in suitable habitat along the proposed route, excluding higher elevation rocky areas in the El Paso and Rand Mountains.

Impacts to Mohave ground squirrel, if present, would be similar to desert tortoise and may include direct loss of habitat and burrows during grading and soil disturbance, mortality or injury from crushing or vehicle strikes, entrapment in open holes, trenches, or piping in work areas, or increased predation by opportunistic predators. Noise or lighting during construction could disrupt normal behaviors or may cause them to avoid otherwise suitable habitat surrounding the site. Disturbance of vegetation and soils could degrade habitat, make sites unsuitable for burrowing, or spread non-native invasives.

As a state listed species, SCE would be required to obtain an ITP for take or disturbance of Mohave ground squirrel. Typically, CDFW requires permit conditions that would avoid, minimize, and compensate for impacts to individuals, populations, and their habitats.

As previously listed, APM BIO-MAM-1 (Mohave Ground Squirrel) would be implemented. This measure outlines that SCE would coordinate with CDFW on the ITP. Typical permit conditions require a CDFW-approved relocation plan for Mohave ground squirrel, surveying and monitoring, and burrow demarcation and avoidance. Regardless of permit conditions, work site hazards such as speeding vehicles; open holes, pits, trenches, and pipes; trash; and pets would be managed. This APM would minimize and avoid disturbance, injury, and mortality.

Even with application of APMs and permit conditions, previously described, impacts would be significant without mitigation. In addition to the mitigation measures previously listed for all special-status wildlife, the following mitigation measure would be implemented:

- **Mitigation Measure BIO-1k (Mohave ground squirrel avoidance and minimization)**; supplements APM BIO-MAM-1. This measure would require that potential Mohave ground squirrel habitat be presumed occupied, that protection measures from APM BIO-MAM-1 be implemented, and that a CDFW ITP be obtained. Additionally, the mitigation measure requires that, in accordance with the permit, high-quality habitat be marked and avoided to the greatest extent feasible, that temporarily disturbed habitat areas be revegetated, and that permanent habitat loss is compensated at a minimum 1:1 ratio.

This measure would protect Mohave ground squirrel habitat from disturbance and degradation, offset habitat loss, and avoid disturbance, injury, and mortality of individuals. With implementation of the mitigation measures, the potential for direct and indirect impacts to Mohave ground squirrel would be less than significant.

American badger and desert kit fox. *LESS THAN SIGNIFICANT WITH MITIGATION.* American badgers are a California species of special concern and have potential to occur in all segments. No American badgers or dens sites were observed; however, badgers could use native habitats wherever prey animals may be present, and soils are suitable for burrows. Suitable habitat in Segment 1 is found near Bishop, Big Pine, Independence, Lone Pine and Pearsonville, where there is moderate potential for American badgers to occur. One CNDDB record is documented in Segment 1 southwest of Inyokern. Along Segment 2, CNDDB occurrences were documented near Randsburg and suitable habitat is present in the Indian Wells Valley and north of the El Paso Mountains near Randsburg. Along Segments 3N and 3S, CNDDB occurrences were documented west of Hinkley. Suitable habitat is located between the Rand Mountains in Segment 2 east to Yermo where Segments 3N and 3S meet (near the Coolwater Substation).

Desert kit fox is a protected fur-bearing mammal under Title 14 of the California Code of Regulations (CCR), Section 460. Desert kit fox could use native habitats where prey animals may be present, and soils are suitable for burrows. Desert foxes were observed along the proposed route in Segments 3N and 3S, in creosote bush scrub east of Kramer Junction, and in the Waterman Hills north of Barstow. There is high potential for them to occur along the proposed route in suitable open shrubby habitat between Kramer Junction and Yermo along Segments 3N and 3S.

Potential direct impacts to American badger are injury or mortality of individuals or crushing of burrows by vehicles and construction equipment, and habitat loss or degradation. Increased noise, vibration, and disturbance could disrupt normal behaviors of badgers, kit foxes, or their prey, or may cause them to avoid otherwise suitable habitat.

Even with application of APMs and permit conditions, as previously described, impacts would be significant without mitigation. In addition to the mitigation measures previously listed for all special-status wildlife, the following mitigation measure would be implemented:

- **Mitigation Measure BIO-1l (American Badger and Desert Kit Fox).** This measure would require pre-construction surveys for American badger and desert kit fox in suitable habitat. Active dens would be flagged and buffered for avoidance, unless otherwise coordinated with CDFW. Identification of individuals and avoidance of active dens would minimize disturbance to American badger and desert kit fox.

This measure would minimize and avoid disturbance, injury, and mortality. With implementation of mitigation measures, the potential for direct and indirect impacts to American badger and desert kit fox would be less than significant.

Bats. *LESS THAN SIGNIFICANT WITH MITIGATION.* Three special-status bat species could use the project site for foraging. Suitable roosting habitat is located near the project route in mines, caves, rocky crevices, and tree cavities. Roost sites may be used seasonally (e.g., hibernacula) or daily (day roosts, used during inactive daylight hours). Maternity roosts (where female bats congregate to give birth and raise young) are particularly important for maintaining species populations.

Potential habitat for special-status bats is found throughout much of the project area, as follows:

Pallid Bat. Pallid bats are a California species of special concern and BLM Sensitive. This species is very sensitive to disturbance of roosting sites. No pallid bats or roosts were observed along the proposed route. There is high potential for foraging over a broad range along the proposed route in Segments 1 and 2, with high potential for roosting along Segment 2 in mines and associated structures. There are over 1,000 documented mine locations within five miles of the proposed route in Segment 2, most notably in the El Paso and Rand Mountains. Mines providing suitable roosting habitat are located within five miles of Segment 1. CNDDB occurrences were documented within the proposed route at Owens Lake, Independence, and the Alabama Hills west of Lone Pine (Segment 1), and near Randsburg (Segment 2).

Townsend's big-eared bat. Townsend's big-eared bats are a California species of special concern and BLM Sensitive. No Townsend's big-eared bats or their roosts were observed along the proposed route. There is high potential for bats to forage in all segments, and high potential for roosting in Segments 1 and 2. In Segment 1, suitable roosting habitat, comprised of abandoned mines and crevices in rocky cliffs and canyons, is located along the proposed route and there is high potential for roosting within 0.5 mile. CNDDB occurrences are documented throughout Segment 1; two are documented within one mile of the proposed route. Occurrences of maternity colonies were documented south of the Control Substation and south of Little Lake. CNNDDB occurrences are documented near the Rand Mountains near Randsburg (Segment 2), and in the Calico Mountains (north of the Coolwater Substation).

Spotted Bat. Spotted bats are a California species of special concern and BLM Sensitive. No spotted bats or their roosts were observed along the proposed route. Spotted bat has high potential to forage along Segments 1 and 2. CNDDB occurrences are documented near Bishop, Lone Pine, and Owens Lake, and China Lake.

The Project could cause direct and indirect impacts to special-status bats through permanent and temporary loss or degradation of suitable habitat and disturbance of foraging, dispersal, and breeding activities. Special-status bats may be present during construction and may be adversely affected by visual disturbances, noise and vibration, lighting, and dust from construction activities. Most bats would be expected to fly away from disturbances. Day roosts, hibernacula, and maternity roosts located within

project disturbance areas, if present, may be damaged or destroyed, and adults or young may be injured or killed. Individual bats in the vicinity of construction activities may be disturbed or frightened away by human presence, noise, and activity.

Even with application of APMs and permit conditions, as previously described, impacts would be significant without mitigation. In addition to the mitigation measures previously listed for all special-status wildlife, the following mitigation measure would be implemented:

- **Mitigation Measure BIO-1m (Special-status Bats)**; supersedes APM BIO-MAM-6. This measure provides greater detail and specificity than the APM, related to protection of special-status and common bat species and procedures for addressing non-breeding bat hibernacula and active maternity roosts. This measure would require pre-construction surveys and reporting to identify active bat roosting or maternity colonies in suitable habitat within 300 feet of work areas. If special-status bats occur at day roosts, maternity roosts, or hibernacula, construction activities shall avoid these sites and maintain a surrounding buffer of 300 feet.

This measure would minimize and avoid disturbance, injury, and mortality. With implementation of mitigation measures, the potential for direct and indirect impacts to bats would be less than significant.

Birds

The project site and surrounding area provides suitable habitat for numerous resident and migratory bird species. The complete list of special-status birds that may occur in the project area is provided in Section 3.5.1.4, by segment in Section 3.5.1.6, and shown in detail in Appendix 4, Table 4-1.

Impacts to nesting birds are addressed in Impact BIO-5, and impacts to birds due to collision with power lines and electrocution are discussed in detail in Impact BIO-6.

The following describes special-status birds with potentially significant impacts:

Western burrowing owl. *LESS THAN SIGNIFICANT WITH MITIGATION.* Western burrowing owl is a California candidate for listing and is BLM Sensitive. It was observed in Segments 1 and 3N. In Segment 1, two burrows were observed, but they did not exhibit signs of recent use. There is high potential for nesting in Segment 1, between Big Pine and Little Lake, and south of Little Lake to the Inyokern area. CNDDB historic and recent records occur at Coso Junction, and suitable nesting habitat occurs near the Coso Junction area. One record from the eBird online database is documented just south of Inyokern, where Segment 1 and 2 meet (eBird, 2024). Along Segment 3N, one old burrow was observed near Harper Lake, and one was observed between the Calico Mountains and Mitchel Range, near the Junction of Segments 3N and 3S. Neither burrows showed sign of recent use; they appeared to be wintering burrows. CNDDB occurrences are documented between Kramer Junction and Yermo. Suitable nesting habitat occurs along the proposed route in the playa area just south of Harper Lake.

Burrowing owl may be present in the project area during construction. Adult burrowing owls will generally shelter in their burrow rather than flee from disturbance, and construction activities could result in injury and mortality to adults, damage or destruction of burrows, and injury or mortality to eggs and nestlings during grading, vegetation removal, and site preparation. Soil disturbance may degrade habitat, and compaction may leave the area unsuitable for future burrowing. Project materials or equipment may introduce an entrapment hazard, and birds may be vulnerable to vehicle strikes, which could lead to injury or mortality. Indirect impacts would include increased noise, dust, light, vibration, human activity, and opportunistic predators, which may affect nesting or foraging behavior. Exposure to herbicides or spilled fuels may injure or kill individuals.

As a candidate for listing under CESA, SCE would be required to obtain an ITP for take or disturbance of western burrowing owl. Typically, CDFW requires permit conditions that would avoid, minimize, and compensate for impacts to individuals, populations, and their habitats.

As previously listed, APM BIO-AVI-2 (Burrowing Owl) would be implemented. This measure requires surveys, buffering of active burrows, and a relocation plan in coordination with CDFW which would minimize and avoid disturbance, injury, and mortality.

Even with application of APMs and permit conditions, as previously described, impacts would be significant without mitigation. With implementation of the mitigation measures listed and described for all special-status wildlife, above, the potential for direct and indirect impacts to western burrowing owl would be less than significant.

Golden eagle. *LESS THAN SIGNIFICANT WITH MITIGATION.* Golden eagles are protected by the Federal Bald and Golden Eagle Protection Act (BGEPA) and are designated as "fully protected" by the CDFW and Sensitive by the BLM. The project site provides suitable foraging habitat but does not provide suitable nesting cliffs. Transmission towers may provide suitable nesting habitat in areas where suitable foraging habitat is nearby. One juvenile golden eagle was observed along the proposed route south of Bishop in the Tungsten Hills, at the northern end of Segment 1. Two CNDDB nesting records overlap the proposed route. Non-nesting records occur around Little Lake and to the south. Suitable nesting habitat is found around Haiwee Reservoir and cliff faces south of Little Lake. One golden eagle was observed in Segment 2 near Randsburg. One CNDDB nesting record overlaps the proposed route. Suitable habitat along the proposed route in Segment 2 is located in the Rand and El Paso Mountains.

eBird records document golden eagles throughout the project area, along the proposed route in all segments (eBird, 2024). There is high potential for golden eagles to forage in suitable habitat throughout the project area. Nesting may occur on suitable steep cliffs and ledges in nearby mountain ranges.

Construction may result in the loss of foraging habitat; however, impacts to habitat would be in discrete, distributed locations, and would not disturb large contiguous areas of habitat. APMs previously listed for all special-status wildlife would be implemented, which would minimize, avoid, and mitigate impacts to habitat and disturbance of foraging behaviors.

Even with application of APMs and any permit conditions, as previously described, impacts would be significant without mitigation. In addition to the mitigation measures previously listed for all special-status wildlife species, the following mitigation measure would be implemented:

- **Mitigation Measure BIO-1n (Golden Eagle)**; supersedes APM BIO-AVI-4. This measure provides greater detail and specificity than the APM, related to golden eagle nest surveys, data to be collected, adaptive management, and reporting. At least one year prior to construction, golden eagle nest surveys would be performed in suitable habitat during nesting season to determine if nests are present within a 2-mile radius of work areas. If an occupied nest is detected within 2 miles of the Project, it would be surrounded by a 1-mile in line of sight, or 0.5-mile out of sight buffer to ensure that project construction activities do not result in injury or disturbance to golden eagles. Prescribed nest data would be collected and a determination of territory status would be made after two full surveys. Monthly and annual reports would be submitted to resource agencies.

This measure would minimize and avoid disturbance of nesting eagles and injury and mortality of nestlings, as detailed in Impact BIO-5. Due to their size, golden eagles may be at risk of collision with transmission lines. Impacts to golden eagle resulting from collision or electrocution are detailed in Impact BIO-6.

With implementation of mitigation measures, the potential for direct and indirect impacts to golden eagle would be less than significant.

Other Special-Status and Native Birds. *LESS THAN SIGNIFICANT WITH MITIGATION.* Special-status birds are protected by state and federal Endangered Species Acts and California Fish and Game Code. Native birds are protected under the California Fish and Game Code and federal MBTA (see Section 3.5.2, Applicable Regulations, Policies, and Standards). The project site and surrounding area provides suitable roosting,

foraging, and nesting habitat for numerous resident and migratory bird species. Impacts to nesting birds are described in Impact BIO-5.

Other special-status birds that have been documented in and near the project area are state threatened Swainson's hawk, state threatened bank swallow, federally threatened western snowy plover, and federally protected bald eagle. State Species of Special Concern that were documented in and around the project area are northern harrier, loggerhead shrike, summer tanager, Le Conte's thrasher, yellow-headed blackbird, and least bittern. Special-status birds with potential to occur are described in detail in Section 3.5.1.4, by segment in Section 3.5.1.6, and in Appendix 4, Table 4-1.

Direct impacts to special-status and native birds could include loss of vegetation comprising suitable shelter, foraging, and nesting habitat and loss of food sources or prey due to ground disturbance, vegetation clearing, and habitat modification. In most cases, adult birds would fly away from the disturbance, but bird nests (including eggs or nestlings, if present) could be lost. Open water tanks and project materials or equipment may introduce an entrapment hazard, which could lead to injury or mortality. Indirect impacts would include increased noise, dust, light, vibration, human activity, and opportunistic predators, which may affect migratory, nesting, or foraging behavior. Exposure to herbicides or spilled fuels may injure or kill individuals. Impacts to nesting birds are detailed in Impact BIO-5.

Application of APMs, as previously listed and described, would address special-status birds and their habitat. Even with APMs, impacts would be significant without mitigation. Impacts would be avoided and minimized with mitigation measures previously listed for all special-status wildlife, which require and recommend surveying, demarcation, buffering, and avoidance of sensitive habitat and pre-construction surveys and sweeps for sensitive wildlife. With implementation of mitigation measures, the potential for direct and indirect impacts to special-status and native migratory birds would be less than significant.

Operations and Maintenance

LESS THAN SIGNIFICANT. Operations and maintenance activities implemented after project construction would be similar to operations and maintenance activities that are ongoing for the existing subtransmission lines. Operations and maintenance for the Proposed Project may require less on-site repairs and disturbance than currently required due to the construction of new structures in Segments 1 and 2.

As with existing operations and maintenance activities, operations and maintenance would occur at established facility sites on a periodic basis. Most regular operations and maintenance of overhead facilities are performed from existing access roads with no surface disturbance. Impacts during operations and maintenance may occur from replacing poles and towers, maintenance of roads, weed control, and repair of ditches, berms, culverts, and drains, which may cause limited ground disturbance and removal of vegetation. Increased human presence, disturbance, dust, noise, and equipment could degrade habitat and disturb wildlife.

Repairs of existing facilities and use of pulling and lay down sites may occur in restored project construction areas and undisturbed areas. Where maintenance requires new ground disturbance, direct and indirect impacts to habitat and special-status species would be the same as existing operations and maintenance practices and would be similar to impacts described for construction.

Impacts to special-status species and their habitat during operations and maintenance would have no impacts that exceed those of current operations. No mitigation is required. Impacts from operations and maintenance would be less than significant.

Mitigation Measures for Impact BIO-1

The following measures apply to Impact BIO-1. The full text of these mitigation measures is presented in Section 3.5.5.

- **Mitigation Measure BIO-1a: Worker Environmental Awareness Program** (supersedes APM WEAP)
- **Mitigation Measure BIO-1b: Biological Monitoring** (supersedes APM BIO-GEN-1)
- **Mitigation Measure BIO-1c: Minimization of Vegetation and Habitat Impacts**
- **Mitigation Measure BIO-1d: Compensation for Habitat Loss**
- **Mitigation Measure BIO-1e: Pre-construction Biological Resources Surveys**
- **Mitigation Measure BIO-1f: Wildlife impact avoidance and minimization**
- **Mitigation Measure BIO-1g: Crotch bumble bee**
- **Mitigation Measure BIO-1h: Special-status reptiles**
- **Mitigation Measure BIO-1i: Desert Tortoise** (supersedes APM HERP-1)
- **Mitigation Measure BIO-1j: Raven Monitoring, Management, and Control Plan**
- **Mitigation Measure BIO-1k: Mohave ground squirrel avoidance and minimization** (supplements APM BIO-MAM-1)
- **Mitigation Measure BIO-1l: American Badger and Desert Kit Fox**
- **Mitigation Measure BIO-1m: Special-status Bats** (supersedes APM BIO-MAM-6)
- **Mitigation Measure BIO-1n: Golden Eagle** (supersedes APM BIO-AVI-4)

In addition, the following measures are required to ensure that impacts are less than significant:

- **Mitigation Measure AQ-2b (Control Fugitive Dust Emissions)**; see full text in Section 3.4.3.3)
- **Mitigation Measure HW-1a (Drainage Erosion and Sedimentation Control Plan)**; see full text in Section 3.12.3.3)

Impact BIO-2: 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 Wildlife or U.S. Fish and Wildlife Service.

Construction

Impact Description. *LESS THAN SIGNIFICANT WITH MITIGATION.* Impacts to riparian habitat and sensitive natural communities would be similar to those described in detail in Impact BIO-1, Vegetation and Habitat. As a result of clearing and grubbing, grading, earth-moving, and vehicle traffic, potential direct impacts to sensitive vegetation communities may include direct crushing, burial, or uprooting of vegetation; root damage; disturbance of seed banks, underground dormant plants, and plant nutrients; burial or scour of vegetation from runoff, sedimentation, and erosion; and disruption of photosynthesis from fugitive dust. Indirect impacts may occur from incidental introductions of invasive weeds that reduce habitat quality and increase fire risk. Chemical control with herbicides may result in accidental spills and herbicide drift from treatment areas could be particularly damaging to non-target vegetation. Fuel and oil spills from construction equipment and vehicles could pollute the surrounding environment and degrade vegetation and habitat. Although some impact areas may be temporarily disturbed, the effects to sensitive vegetation communities may be long-term or permanent in the area due to changes in soil conditions after construction.

The total acres of project ground disturbance within sensitive and riparian communities are provided in Appendix 4, Table 4-2.

Application of APMs. Construction would significantly impact sensitive and/or riparian vegetation in the project area. Implementation of the following APMs, which were developed as part of the Project, would reduce habitat loss, as described in Impact BIO-1, Vegetation and Habitat. The full text of APMs is presented in Section 2.8 and they are summarized in Table 3.5-1.

- **APM BIO-RES-1 (Develop and Implement Habitat Restoration Plan)**
- **APM BIO-RES-2 (Develop Invasive Plant Management Plan)**
- **APM HAZ-1 (Prepare a Hazardous Materials and Waste Management Plan)**

These APMs implement seeding and revegetation, soil decompaction, erosion control, and non-native control, which would stabilize soils and improve habitat values in the project area. Implementation of the IWMP would improve habitat values and promote recovery of native vegetation in areas disturbed by construction. Procedures for containment and cleanup of spills and restrictions on refueling would minimize the exposure of vegetation and habitat to hazardous materials. However, even with application of APMs, impacts would be significant without mitigation.

Permit Conditions. SCE would also be required to comply with permits from USACE, CDFW, and RWQCB. If the Project were approved, SCE would be required to obtain permits to maintain air and water quality and to implement specific requirements to minimize impacts to habitat from fugitive dust, runoff, erosion, and sedimentation in and around work areas.

Mitigation. Even with implementation of APMs and permit conditions, impacts would be significant without mitigation.

As listed below and summarized in Impact BIO-1, certain APMs are superseded with recommended mitigation measures to ensure that impacts to vegetation and sensitive habitat would be less than significant. Other mitigation measures are recommended to further avoid significant impacts and compensate for habitat loss. The following mitigation measures are required for Impact BIO-2. The full text of each measure is provided in Section 3.5.5.

- **Mitigation Measure BIO-1a (Worker Environmental Awareness Program)**; supersedes APM WEAP
- **Mitigation Measure BIO-1b (Biological Monitoring);** supersedes APM BIO-GEN-1
- **Mitigation Measure BIO-1c (Minimization of Vegetation and Habitat Impacts)**
- **Mitigation Measure BIO-1d (Compensation for Habitat Loss)**

These mitigation measures would ensure that habitat disturbance is minimized and restricted to designated and demarcated work areas and that habitat loss in sensitive communities would be offset. Mitigation measures recommended in other sections of this EIR would also reduce the severity of construction impacts to vegetation and natural communities:

- **Mitigation Measure AQ-2b (Control Fugitive Dust Emissions)**; see Section 3.4
- **Mitigation Measure HW-1a (Drainage Erosion and Sedimentation Control Plan)**; see Section 3.12

These mitigation measures would ensure that dust generated from construction, which could accumulate on vegetation and impact growth, is suppressed and minimized. Erosion resulting from vegetation removal and disturbance of soils would be managed through erosion BMPs, which would prevent loss of soils and seed bank and protect surrounding habitat from degradation.

With implementation of the mitigation measures defined above, construction impacts to riparian and sensitive natural communities would be less than significant.

Operations and Maintenance

LESS THAN SIGNIFICANT. Future operations and maintenance activities would be similar to operations and maintenance activities that are ongoing for the existing subtransmission lines. Operations and maintenance for the Project would have no greater impact than the existing operations and maintenance activities.

As with existing operations and maintenance activities, the Proposed Project related operations and maintenance activities would occur at established facility sites on a periodic basis. Most regular operations and maintenance of overhead facilities are performed from existing access roads with no surface disturbance. Impacts during operations and maintenance may occur from replacing poles and towers, maintenance of roads, weed control, and repair of ditches, berms, culverts, and drains, which may cause limited ground disturbance and removal of vegetation. Increased human presence, equipment, vehicles, and dust, could degrade habitat.

Repairs of existing facilities and use of pulling and lay down sites may occur in restored project construction areas and undisturbed areas which could result in direct impacts. Where maintenance requires new ground disturbance, direct and indirect impacts to sensitive communities would be the same as existing operations and maintenance practices and would be similar to impacts described for construction.

Impacts to riparian and sensitive natural communities during operations and maintenance would have no new impact beyond the baseline condition, and no mitigation is required. Impacts would be less than significant.

Mitigation Measures for Impact BIO-2

The full text of these mitigation measures is presented in Section 3.5.5.

- **Mitigation Measure BIO-1a: Worker Environmental Awareness Program** (supersedes APM WEAP)
- **Mitigation Measure BIO-1b: Biological Monitoring** (supersedes APM BIO-GEN-1)
- **Mitigation Measure BIO-1c: Minimization of Vegetation and Habitat Impacts**
- **Mitigation Measure BIO-1d: Compensation for Habitat Loss**
- **Mitigation Measure AQ-2b: Control Fugitive Dust Emissions** (see full text in Section 3.4.3.3)
- **Mitigation Measure HW-1a: Drainage Erosion and Sedimentation Control Plan** (see full text in Section 3.12.3.3)

Impact BIO-3: Substantially impact jurisdictional wetlands, waters of the U.S., or waters of the state.

Construction

Impact Description. *LESS THAN SIGNIFICANT WITH MITIGATION*. Construction would impact wetland communities and/or jurisdictional waters in all segments. Impacts to wetland and jurisdictional communities would be similar to those described in Impact BIO-1 for vegetation and habitat. Jurisdictional waters are habitat for wetland species and encompass stream channels that convey water, sediment, and nutrients downstream to other habitats. As a result of clearing and grubbing, grading, earth-moving, and vehicle traffic, potential direct impacts to wetlands and jurisdictional waters may include disturbance and compaction of soils; altered runoff and site hydrology; rutting, sedimentation, or erosion in and around surface waters; direct crushing, burial, or uprooting of wetland vegetation; disturbance of seed banks and underground dormant plants; and loss of plant nutrients. Indirect impacts may occur from incidental introductions of invasive weeds that reduce habitat quality; from spillage of hazardous materials used during construction; and from introduction and suspension of sediment into waters, which would reduce water quality in the project vicinity and downstream.

Impacts to water quality are discussed in detail in Section 3.12.3 (Hydrology and Water Quality).

Although some impact areas may be temporarily disturbed, the effects to wetland communities and jurisdictional waters may be long-term or permanent in that area due to changes in soil conditions after construction.

The total acres of project ground disturbance within wetland vegetation communities are provided in Appendix 4, Table 4-2. Based on the Jurisdictional Delineation Reports (Arcadis 2019c, 2019d), the total acres of project disturbance to jurisdictional waters and wetlands are provided in Appendix 4, Table 4-5 and are described by segment in Section 3.5.1.5. Based on the desktop review in February 2025, due the changing definition of Waters of the U.S. and recent storm events, an additional 281 ephemeral drainages, 14 perennial drainages, and 1 wetland may now be considered jurisdictional. An up-to-date assessment of jurisdictional waters would be required prior to construction to support permit applications to USACE, CDFW, and RWQCB.

Potential impacts to riparian and sensitive communities are discussed under Impact BIO-2.

Application of APMs. Construction would significantly impact jurisdictional waters in the project area. Implementation of the following APMs, which were developed as part of the Project, would address habitat loss, as described in Impact BIO-1, Vegetation and Habitat. The full text of APMs is presented in Section 2.8 and they are summarized in Table 3.5-1.

- **APM BIO-RES-1 (Develop and Implement Habitat Restoration Plan)**
- **APM BIO-RES-2 (Develop Invasive Plant Management Plan)**
- **APM HAZ-1 (Prepare a Hazardous Materials and Waste Management Plan)**
- **APM BIO-WET-1. Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats**

These APMs minimize the impacts by implementing seeding and revegetation, soil decompaction, erosion control, and non-native control, which would stabilize soils and improve habitat values in the project area. Implementation of the IWMP would improve habitat values and promote recovery of native vegetation in areas disturbed by construction. Procedures for containment and cleanup of spills and restrictions on refueling would minimize the exposure of vegetation and habitat to hazardous materials.

By implementing BIO-WET-1, wetlands and jurisdictional waters would be avoided unless otherwise authorized by resource agencies. Unavoidable permanent impacts would be offset, as approved. BMPs would minimize indirect impacts and protect jurisdictional waters from sedimentation or pollution. However, even with application of APMs, impacts would be significant without mitigation.

Permit Conditions. SCE would also be required to comply with conditions included in permits from USACE, CDFW, and RWQCB. If the Project were approved, SCE would be required to obtain permits to maintain water quality and to implement specific requirements to minimize impacts to wetlands from runoff, erosion, and sedimentation in and around work areas. Permits would define compensation ratios for unavoidable impacts to jurisdictional waters.

Mitigation. Even with implementation of APMs and permit conditions, impacts would be significant without mitigation. As listed below and summarized in the discussion of Impact BIO-1, certain APMs are superseded with recommended mitigation measures to ensure that impacts to vegetation and sensitive habitat would be less than significant. Other mitigation measures are recommended to further avoid significant impacts and compensate for habitat loss. The following mitigation measures are required for Impact BIO-3. The full text of each measure is provided in Section 3.5.5.

- **Mitigation Measure BIO-1a (Worker Environmental Awareness Program)** supersedes APM WEAP
- **Mitigation Measure BIO-1b (Biological Monitoring)** supersedes APM BIO-GEN-1

- **Mitigation Measure BIO-1c (Minimization of Vegetation and Habitat Impacts)**
- **Mitigation Measure BIO-1d (Compensation for Habitat Loss)**

These mitigation measures would ensure that disturbance is minimized and restricted to designated and demarcated work areas and that loss of wetlands or jurisdictional waters would be offset. Mitigation measures recommended in other sections of this EIR would also reduce the severity of construction impacts to jurisdictional waters:

- **Mitigation Measure AQ-2b (Control Fugitive Dust Emissions)**
- **Mitigation Measure HW-1a (Drainage Erosion and Sedimentation Control Plan)**

These mitigation measures would ensure that dust generated from construction, which could settle and accumulate in wetlands and waters, is suppressed and minimized. Erosion resulting from vegetation removal and disturbance of soils would be managed through erosion BMPs, which would prevent loss of soils and sedimentation of jurisdictional waters.

Impact Conclusion. With implementation of mitigation measures defined above, construction impacts to wetlands and jurisdictional waters would be less than significant.

Operations and Maintenance

LESS THAN SIGNIFICANT. Future operations and maintenance activities would be similar to current operations and maintenance activities that are ongoing for the existing subtransmission lines. As with activities occurring for the existing line, the Project related operations and maintenance activities would occur at established facility sites on a periodic basis. Most regular operations and maintenance of overhead facilities are performed from existing access roads with no surface disturbance. Impacts during operations and maintenance may occur from replacing poles and towers, maintenance of roads, weed control, and repair of ditches, berms, culverts, and drains, which may cause limited ground disturbance, removal of vegetation, sedimentation, or spillage in surface waters. Increased disturbance, equipment, and vehicles could degrade and pollute wetlands and jurisdictional waters near operations and maintenance work areas.

Repairs of existing facilities and use of pulling and lay down sites may occur in restored project construction areas and undisturbed areas. Where maintenance requires new ground disturbance, direct and indirect impacts to wetlands would be the same as existing operations and maintenance practices and would be similar to impacts described for construction.

Impacts to wetlands and jurisdictional waters during operations and maintenance would have no new impact beyond the baseline condition, and no mitigation is required. Impacts would be less than significant.

Mitigation Measures for Impact BIO-3

The full text of these mitigation measures is presented in Section 3.5.5.

- **Mitigation Measure BIO-1a: Worker Environmental Awareness Program** (supersedes APM WEAP)
- **Mitigation Measure BIO-1b: Biological Monitoring** (supersedes APM BIO-GEN-1)
- **Mitigation Measure BIO-1c: Minimization of Vegetation and Habitat Impacts**
- **Mitigation Measure BIO-1d: Compensation for Habitat Loss**
- **Mitigation Measure AQ-2b: Control Fugitive Dust Emissions** (see full text in Section 3.4.3.3, Air Quality)
- **Mitigation Measure HW-1a: Drainage Erosion and Sedimentation Control Plan** (see full text in Section 3.12.3.3, Hydrology and Water Quality)

Impact BIO-4: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

Construction

Impact Description. *LESS THAN SIGNIFICANT WITH MITIGATION.* Construction may cause temporary and localized disruption of movement by resident or migratory wildlife or wildlife behavior due to increased noise, vibration, light, dust, equipment, work site hazards, human presence and activity, and opportunistic predators in work areas. Increased equipment and vehicle traffic may result in increased wildlife strikes in the vicinity of habitat corridors. Habitat used for cover during movement would be impacted by ground disturbance and clearing, as described in Impact BIO-1. Incidental introduction of invasives may decrease the quality of corridor habitat. Pollution or contamination of waterways during construction would impact habitat and water quality for migratory fish.

Construction activities consist of upgrading and replacing existing facilities in dispersed and discrete areas; therefore, terrestrial wildlife connectivity conditions would be similar to existing conditions. In the long-term, the Project would not create a barrier to movement. While habitat quality may be decreased over time due to spread of invasives, movement would not be precluded. Most birds would be expected to fly over or under the power lines, while ground dwelling wildlife would be expected to move freely under the lines or move around work areas. Birds migrating near the project area or flying locally may collide with subtransmission lines. Impacts due to bird collision and electrocution are discussed in Impact BIO-6.

Application of APMs. Impacts to wildlife movement from construction, due to degradation of habitat, disruption of natural movement behaviors, and direct injury or mortality, would be addressed by the following APMs, which were developed as part of the Project (full text in Section 2.8).

- **APM BIO-RES-1 (Habitat Restoration and Revegetation Plan).**
- **APM BIO-RES-2 (Develop Integrated Weed Management Plan [IWMP]**
- **APM HAZ-1 (Prepare a Hazardous Materials Management Plan)**
- **APM WET-1 (Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats)**
- **APM BIO-AVI-2 (Burrowing Owl)**
- **APM BIO-AVI-3 (Yellow-billed Cuckoo)**
- **APM BIO-HERP-9 (Northern Leopard Frog)**
- **APM BIO-MAM-1 (Mohave Ground Squirrel)**
- **APM BIO-MAM-5 (Bighorn Sheep – Nelson's and Desert Bighorn Sheep)**
- **APM AES-8 (Night Lighting during Construction of Facilities)**
- **APM NOI-1 (Implement Best Management Practices for Construction Noise)**

These APMs minimize the impacts by implementing seeding and revegetation, soil decompaction, erosion control, and non-native control, which would stabilize soils and improve wildlife habitat values in the project area. Implementation of the IWMP would improve habitat values and promote recovery of native vegetation disturbed by construction. Procedures for containment and cleanup of spills and restrictions on refueling would minimize the exposure of vegetation and habitat to hazardous materials.

By implementing species specific wildlife APMs, impacts to wildlife movement would be minimized or avoided. Implementation of focused wildlife pre-construction surveys, flagging, construction monitoring, and avoidance seasons and buffers would minimize ground disturbance in suitable habitat and avoid

direct impacts to wildlife moving through the project area. Restriction of speed limits would minimize mortality due to vehicle strikes where access roads and work areas may overlap with movement corridors (Figures 3.5-5a through 3.5-5c, Wildlife Movement). APMs for night lighting and noise (AES-8 and NOI-1) would minimize disturbance of wildlife and disruption of movement patterns during nighttime hours. However, even with application of APMs, impacts would be significant without mitigation.

Permit Conditions. SCE would also be required to comply with conditions included in ITPs from CDFW and USFWS for threatened and endangered species and candidates for listing. If the Project were approved, SCE would be required to obtain permits for take or disturbance of listed species.

Mitigation. Even with implementation of APMs and permit conditions, impacts would be significant without mitigation. As listed below and summarized in Impact BIO-1, certain APMs are superseded with recommended mitigation measures to ensure that impacts would be less than significant. Other mitigation measures are recommended to avoid disturbance of wildlife species and their movement through and near the project area. The following mitigation measures are required for Impact BIO-4. The full text of each measure is provided in Section 3.5.5.

- **Mitigation Measure BIO-1a (Worker's Environmental Awareness Program)**; supersedes APM WEAP
- **Mitigation Measure BIO-1b (Biological Monitoring)**; supersedes APM BIO-GEN-1
- **Mitigation Measure BIO-1c (Minimization of Vegetation and Habitat Impacts)**
- **Mitigation Measure BIO-1d (Compensation for Habitat Loss)**
- **Mitigation Measure BIO-1e (Pre-construction Biological Resources Surveys)**
- **Mitigation Measure BIO-1f (Wildlife impact avoidance and minimization)**
- **Mitigation Measure BIO-1g (Crotch bumble bee)**
- **Mitigation Measure BIO-1h (Special-status reptiles)**
- **Mitigation Measure BIO-1i (Desert Tortoise)**; supersedes APM HERP-1
- **Mitigation Measure BIO-1j (Raven Monitoring, Management, and Control Plan)**
- **Mitigation Measure BIO-1k (Mohave ground squirrel avoidance and minimization)**; supplements APM BIO-MAM-1
- **Mitigation Measure BIO-1l (American Badger and Desert Kit Fox)**
- **Mitigation Measure BIO-1m (Special-status Bats)**; supersedes APM BIO-MAM-6
- **Mitigation Measure BIO-1n (Golden Eagle)**; supersedes APM BIO-AVI-4

These mitigation measures would ensure that habitat disturbance is minimized and restricted to designated and demarcated work areas and that habitat loss would be offset. Work areas would be surveyed, and sensitive habitats and special-status wildlife would be identified, monitored, buffered and avoided, or relocated. These measures would effectively avoid significant impediments to wildlife movement in the project area. Management of work site hazards would further prevent injury, mortality, and disturbance of wildlife moving in and through the project site. Mitigation measures recommended in other sections of this EIR would also reduce the severity of construction impacts to wildlife movement:

- **Mitigation Measure AQ-2b (Control Fugitive Dust Emissions)**
- **Mitigation Measure HW-1a (Drainage Erosion and Sedimentation Control Plan)**

These mitigation measures would ensure that dust generated from construction, which could accumulate on vegetation and impact growth of wildlife habitat, is suppressed and minimized. Erosion resulting from

vegetation removal and disturbance of soils would be managed through erosion BMPs, which would prevent loss of soils and protect surrounding wildlife habitat from degradation.

Impact Conclusion. With implementation of mitigation measures defined above, construction impacts to wildlife movement would be less than significant.

Operations and Maintenance

LESS THAN SIGNIFICANT. Future operations and maintenance activities would be similar to current operations and maintenance activities that are ongoing for the existing subtransmission lines. Because the replaced project facilities will be newer after the Proposed Project is constructed, these impacts are expected to be reduced in comparison with existing operations and maintenance activities. As with existing operations and maintenance activities, project related operations and maintenance activities would occur at established facility sites on a periodic basis. Most regular operations and maintenance of overhead facilities are performed from existing access roads with no surface disturbance and wildlife movement would be minimally impacted.

Impacts during operations and maintenance may occur from replacing poles and towers, maintenance of roads, weed control, and repair of ditches, berms, culverts, and drains, which may cause limited ground disturbance and removal of vegetation. Increased human presence, equipment, noise, dust, activity, opportunistic predators, and vehicle traffic may disrupt movement behaviors and patterns, or cause mortality.

Repairs of existing facilities and use of pulling and lay down sites may occur in restored project construction areas and undisturbed areas. Where maintenance requires new ground disturbance, direct and indirect impacts to wildlife movement would be the same as existing operations and maintenance practices and would be similar to impacts described for construction.

Impacts to wildlife movement during operations and maintenance would have no new impact beyond the baseline condition, and no mitigation is required. Impacts from operations and maintenance would be less than significant.

Mitigation Measures for Impact BIO-4

The full text of these mitigation measures is presented in Section 3.5.5.

- **Mitigation Measure BIO-1a: Worker Environmental Awareness Program** (supersedes APM WEAP)
- **Mitigation Measure BIO-1b: Biological Monitoring** (supersedes APM BIO-GEN-1)
- **Mitigation Measure BIO-1c: Minimization of Vegetation and Habitat Impacts**
- **Mitigation Measure BIO-1d: Compensation for Habitat Loss**
- **Mitigation Measure BIO-1e: Pre-construction Biological Resources Surveys**
- **Mitigation Measure BIO-1f: Wildlife impact avoidance and minimization**
- **Mitigation Measure BIO-1g: Crotch bumble bee**
- **Mitigation Measure BIO-1h: Special-status reptiles**
- **Mitigation Measure BIO-1i: Desert Tortoise** (supersedes APM HERP-1)
- **Mitigation Measure BIO-1j: Raven Monitoring, Management, and Control Plan**
- **Mitigation Measure BIO-1k: Mohave ground squirrel avoidance and minimization** (supplements APM BIO-MAM-1)
- **Mitigation Measure BIO-1l: American Badger and Desert Kit Fox**
- **Mitigation Measure BIO-1m: Special-status Bats** (supersedes APM BIO-MAM-6)
- **Mitigation Measure BIO-1n: Golden Eagle** (supersedes APM BIO-AVI-4)

Impact BIO-5: Cause take of protected nesting birds, including nestlings or eggs, through direct impacts to the nest or substantial nearby disturbance which could cause nest abandonment.

Construction

Impact Description. *LESS THAN SIGNIFICANT WITH MITIGATION.* Impacts to nesting birds would be similar to those described in Impact BIO-1 for special-status birds. Direct impacts to nesting birds could include loss of nesting habitat and active nests or burrows, and loss of foraging habitat, food sources, and prey items due to vegetation clearing and ground disturbance. In most cases, adult birds would fly away from disturbance, but bird nests (including eggs or nestlings, if present) could be lost. Construction activities may disrupt nesting behavior, cause adult birds to abandon the nest, directly destroy nests, or result in injury or mortality of birds, nestlings, or eggs. Construction activities could cause disruption of nesting and foraging behavior due to a temporary increase in human presence, traffic, noise, vibration, dust, and opportunistic predators. Incidental spread of non-native weeds would decrease nesting habitat quality.

Project activities may occur during periods that overlap with the nesting season (January 1 through August 31) when birds may be vulnerable to nest disturbance. If initial site preparation, grading, or vegetation removal were to occur during nesting season, it could destroy bird nests, including eggs or nestling birds. One special-status species, the burrowing owl, may take cover in burrows to escape threats or disturbance, which may increase risk of injury or mortality during site preparation. Some birds will likely nest in the project area during construction, even after initial site preparation. Depending on the species, birds may nest on the ground close to equipment; on transmission structures; on construction trailers; or on idle vehicles or construction equipment left overnight or during a long weekend. In areas where construction is phased, birds may quickly use these features as nest sites between active construction phases.

Due to species specific impacts and avoidance requirements, impacts to burrowing owl and golden eagle are presented separately. Burrowing owls have been observed in the project area, as described in Impact BIO-1, and may be present in burrows during both nesting and non-nesting seasons. Burrowing owl may not flee the site during construction, due to its characteristic behavior of taking cover in burrows. Impacts to burrowing owls include mechanical crushing of individuals, nestlings, eggs, or burrows by vehicles and construction equipment during site preparation; loss of foraging habitat; and disturbance of nesting behaviors due to increased disturbance, noise, lighting, dust, and opportunistic predators. Soil disturbance may degrade suitable burrows, and compaction may leave the area unsuitable for future burrowing.

Golden eagles have been documented as being sensitive to some forms of anthropogenic presence and visibly display stressed behaviors when disturbed by anthropogenic activities (Pagel, 2010). One study documented that human disturbance accounted for at least 85% of all known nest losses (Pagel, 2010). Golden eagles have been documented throughout the project area, as described in detail in Impact BIO-1. The project area does not provide suitable golden eagle nesting habitat; however, the site provides suitable foraging habitat. Known golden eagle nesting territories are located in steep rocky outcrops and cliff faces within less than one mile of the project alignment. Human intrusions documented near golden eagle nest sites have resulted in the abandonment of the nest; high nestling mortality due to overheating, chilling or desiccation when young are left unattended; premature fledging; and ejection of eggs or young from the nest (Pagel, 2010).

Construction may result in the loss of nesting habitat; however, impacts to vegetation would be in discrete, distributed locations, and would not disturb large contiguous areas of habitat.

Application of APMs. Degradation and loss of nesting habitat; direct loss of nests, nestlings, or eggs; and disturbance or disruption of nesting behaviors would be addressed with implementation of the following APMs, which were developed as part of the Project (full text in Section 2.8).

- **APM BIO-RES-1 (Habitat Restoration and Revegetation Plan)**
- **APM BIO-RES-2 (Develop Integrated Weed Management Plan [IWMP])**

- **APM HAZ-1 (Prepare a Hazardous Materials Management Plan)**
- **APM BIO-AVI-1 (Nesting Bird Management Plan)**
- **APM BIO-AVI-2 (Burrowing Owl)**
- **APM BIO-AVI-3 (Yellow-billed Cuckoo)**
- **APM AES-8 (Night Lighting during Construction of Facilities)**
- **APM NOI-1 (Implement Best Management Practices for Construction Noise)**

These APMs minimize the impacts to nesting habitat by implementing seeding and revegetation, soil decompaction, erosion control, and non-native control, which would stabilize soils and improve wildlife habitat values in the project area. Implementation of the IWMP would improve habitat values and promote recovery of native vegetation disturbed by construction. Procedures for containment and cleanup of spills and restrictions on refueling would minimize the exposure of wildlife and habitat to hazardous materials.

APM BIO-AVI-1 requires a Nesting Bird Management Plan (NBMP) in coordination with CPUC, BLM, CDFW, and USFWS, which would avoid potential for unauthorized take. Pre-construction nest surveys during the breeding season (January 1 through August 31), demarcation of nest buffers, monitoring of nests, and coordination with resource agencies on buffer modifications would avoid destruction and disturbance of nests and direct mortality or injury of birds, nestlings, or eggs. APM BIO-AVI-2 (Burrowing Owl) requires surveys, buffering of active burrows, and a relocation plan in coordination with CDFW, which would minimize and avoid disturbance, injury, and mortality of nesting burrowing owls. APM BIO-AVI-3 (Yellow-billed Cuckoo) requires the avoidance of nesting season or pre-construction nest surveys, buffering of nests, and construction monitoring of occupied habitat, which would protect yellow-billed cuckoos from disturbance, injury, and mortality. APMs for night lighting and noise (AES-8 and NOI-1) would minimize disturbance of nesting birds during construction activities during nighttime hours. However, even with application of APMs, impacts would be significant.

Permit Conditions. SCE would also be required to comply with conditions included in ITPs from CDFW and USFWS for threatened and endangered species and candidates for listing. If the Project were approved, SCE would be required to obtain permits for take or disturbance of listed species.

Mitigation. Even with implementation of APMs and permit conditions, impacts would be significant, and mitigation is required. As listed below and summarized in Impact BIO-1, certain APMs are superseded with recommended mitigation measures to ensure that impacts would be less than significant. Other mitigation measures are recommended to avoid disturbance of wildlife near the project area. The following mitigation measures are required for Impact BIO-5. The full text of each measure is provided in Section 3.5.5.

- **Mitigation Measure BIO-1a (Worker's Environmental Awareness Program)**; supersedes APM WEAP
- **Mitigation Measure BIO-1b (Biological Monitoring)**; supersedes APM BIO-GEN-1
- **Mitigation Measure BIO-1c (Minimization of Vegetation and Habitat Impacts)**
- **Mitigation Measure BIO-1d (Compensation for Habitat Loss)**
- **Mitigation Measure BIO-1e (Pre-construction Biological Resources Surveys)**
- **Mitigation Measure BIO-1f (Wildlife impact avoidance and minimization)**
- **Mitigation Measure BIO-1n (Golden Eagle)**; supersedes APM BIO-AVI-4

As previously described in detail in BIO-1, these mitigation measures would minimize and avoid impacts to nesting birds. Comprehensive training of on-site workers would ensure that they limit ground disturbance to work areas and that sensitive habitats are avoided. Biological monitoring would avoid ground and vegetation disturbance outside of approved work areas. Mapping and demarcation of work areas

would avoid ground, soil, and vegetation disturbance outside of approved boundaries, minimizing impacts to habitat in the vicinity of work areas. Compensation for permanent impacts would offset habitat loss due to project construction activities. Pre-construction surveys would minimize and avoid mortality of special-status species by identifying and buffering individuals in disturbance areas. By managing vehicle speed limits, monitoring wildlife entrapment, and managing food, trash, and water subsidies, injury and mortality of wildlife would be avoided. Mitigation Measure BIO-1n (Golden Eagle) recommends golden eagle nest surveys within a 2-mile radius of work areas. Occupied nests would be buffered to avoid disturbance of nesting eagles and abandonment of nests. Mitigation measures recommended in other sections of this EIR would also reduce the severity of construction impacts to nesting birds:

- **Mitigation Measure AQ-2b (Control Fugitive Dust Emissions)**; see Section 3.4.3.3, Air Quality, for full text)
- **Mitigation Measure HW-1a (Drainage Erosion and Sedimentation Control Plan)**; see Section 3.11.3.3, Hydrology and Water Quality, for full text)

These mitigation measures would ensure that dust generated from construction, which could accumulate on vegetation and impact growth of nesting habitat, is suppressed and minimized. Erosion resulting from vegetation removal and disturbance of soils would be managed through erosion BMPs, which would prevent loss of soils and protect surrounding nesting habitat from degradation.

Impact Conclusion. With implementation of mitigation measures, construction impacts to nesting birds would be less than significant.

Operations and Maintenance

LESS THAN SIGNIFICANT. Future operations and maintenance activities would be similar to current operations and maintenance activities that are ongoing for the existing subtransmission lines. Because the facilities after implementation of the Proposed Project would be newer, operations and maintenance activities would likely be reduced from current levels. As with existing operations and maintenance activities, project related operations and maintenance activities would occur at established facility sites on a periodic basis. Most regular operations and maintenance of overhead facilities are performed from existing access roads with no surface disturbance and wildlife movement would be minimally impacted.

Impacts during operations and maintenance may occur from replacing poles and towers, maintenance of roads, weed control, and repair of ditches, berms, culverts, and drains, which may cause limited ground disturbance and removal of vegetation. Increased human presence, equipment, noise, dust, activity, and vehicle traffic could disrupt nesting or result in destruction of nests, eggs, or nestlings in and near work areas. Birds nesting on poles and towers may be disrupted during replacement or removal.

Repairs of existing facilities and use of pulling and lay down sites may occur in restored project construction areas and undisturbed areas. Where maintenance requires new ground disturbance, direct and indirect impacts to nesting birds would be the same as existing operations and maintenance practices and would be similar to impacts described for construction.

Impacts to nesting birds during operations and maintenance would have no new impact beyond the baseline condition and no mitigation is required. Impacts from operations and maintenance would be less than significant.

Mitigation Measures for Impact BIO-5

The full text of these mitigation measures is presented in Section 3.5.5.

- **Mitigation Measure BIO-1a: Worker Environmental Awareness Program** (supersedes APM WEAP)
- **Mitigation Measure BIO-1b: Biological Monitoring** (supersedes APM BIO-GEN-1)

- **Mitigation Measure BIO-1c: Minimization of Vegetation and Habitat Impacts**
- **Mitigation Measure BIO-1d: Compensation for Habitat Loss**
- **Mitigation Measure BIO-1e: Pre-construction Biological Resources Surveys**
- **Mitigation Measure BIO-1f: Wildlife impact avoidance and minimization**
- **Mitigation Measure BIO-1n: Golden Eagle** (supersedes APM BIO-AVI-4)
- **Mitigation Measure AQ-2b: Control Fugitive Dust Emissions** (see full text in Section 3.4.3.3, Air Quality)
- **Mitigation Measure HW-1a: Drainage Erosion and Sedimentation Control Plan** (see full text in Section 3.12.3.3, Hydrology and Water Quality)

Impact BIO-6: Create a substantial collision and electrocution risk for birds or bats.

Construction

LESS THAN SIGNIFICANT WITH MITIGATION. Collision and electrocution impacts would primarily occur during operations and maintenance, after transmission lines and towers are installed and operational. Impacts to birds and bats due to construction and associated APMs and mitigation measures are described in Impact BIO-1, Special-Status Wildlife.

Operations and Maintenance

Impact Description. *LESS THAN SIGNIFICANT WITH MITIGATION.* Proposed operations and maintenance activities would be similar to existing operations and maintenance. As with existing operations and maintenance, the project related operations and maintenance activities would occur at established facility sites on a periodic basis. Collision and electrocution hazard conditions during operations and maintenance are expected to be similar to existing conditions; however, the height of towers and conductors would change (Table B-3). The Project would not introduce new transmission facilities into locations where none existed previously; however, the heights of transmission lines would increase from an average of 70 feet to an average 93 feet tall post-construction. The highest towers would be 120 to 130 feet tall. Temporarily during construction, both the shorter pre-construction towers and taller constructed towers would be in place simultaneously to avoid interruption of power. Potential impacts to birds and bats may occur from collision with transmission lines that are upgraded as part of the Proposed Project.

Collision occurs when birds or bats fly into overhead wires. Electrocution occurs when a bird simultaneously contacts two energized phase conductors or an energized conductor and grounded hardware. This happens most frequently when a large bird attempts to perch on a transmission structure with insufficient clearance between these elements.

Bird collisions with powerlines generally occur when: (1) a power line or other aerial structure transects a daily flight path used by a concentration of birds, and (2) migrants are traveling at reduced altitudes and encounter tall structures in their path (Brown, 1993). Collision-related mortality is commonly attributed to a bird's morphological characteristics (vision and flight), and behavioral characteristics (migration strategy, feeding and roosting, flocking behaviors, or hunting style) (Bateman et al., 2023). Collision rates generally increase in low light conditions, during inclement weather, such as fog, rain or snow, during strong winds, and during panic flushes when birds are startled by a disturbance or are fleeing from danger (Brown, 1993; Luzenski et al., 2016). Collisions are more probable where the movements of susceptible species are the greatest, such as near wetlands, agricultural areas, valleys that are bisected by power lines, within narrow passes where power lines run perpendicular to flight paths.

Collisions also depend on a species' ability to detect the wires and the visual perception of varying wires. Wire diameter is known to influence collision risk, whereby earth wires, which are 50% thinner and less visible than conductors, account for the majority of collisions with transmission lines (Bernardino et al.,

2018). Several studies have shown that most observed collisions were with narrower, less visible overhead shield wires and lines that cross daily movement corridors (between roosting, nesting, and feeding areas) (Luzenski et al., 2016).

Most birds fly below 500 feet except during migration to avoid expenditure of energy to fly higher and to avoid hazards such as winds or predators (Ehrlich et al., 1988). The impact of transmission line height on collisions is highly dependent on a particular species' flight altitude and factors such as flight behavior, annual flight cycle, and habitats in the vicinity of the line (Bernardino et al., 2018). Generally, taller structures pose a higher collision risk as birds flying at wire height would tend to fly higher to avoid the line as opposed to passing below. However, wire height is typically associated with other features that could impact collision like voltage, number and spacing of wires, span length, and diameter of conductors and shield wires.

One study examined the impact of changing tower heights on raptor flight responses, increasing towers from 20-25 meters tall (65-85 feet) to 55-60 meters (180-195 feet) tall (Luzenski et al., 2016). The study showed that prior to increasing the tower height, approximately 75% of raptors crossed above the wires and 25% crossed within the wire zone; few crossed below. After increasing the tower height 92% of raptors crossed above the wires and few crossed within or below, indicating that raptors were more likely to pass above the higher wires. Overall, there was a 28% increase in the proportion of birds flying above the wire zone after the construction of taller towers. The study concluded that increasing flight elevation to pass above the wires may indicate that the raptors could identify the wire zone and appropriately alter flight to avoid it. Their results further suggest that well-marked lines or lines with increased diameter, even in movement corridors, can lessen collision risk.

Collision mortality estimates in North America have not identified a noticeable effect on long-term population trends; however, it may increase risk for a subset of species with susceptible characteristics. Collisions primarily affect strong, fast fliers with poor or restricted vision (i.e., waterfowl and crane species) (Bateman et al., 2023). Additionally, large, heavy-bodied birds (swans, pelicans, herons, and cranes) are thought to be more vulnerable than smaller, more maneuverable species (Luzenski et al., 2016). One study identified that vulnerable species that may be at risk of population-level impacts shared characteristics including low maneuverability in flight, hazardous behavioral traits (especially flight height and flocking flight), long-lived and slow-reproducing life-history, habitat specialization, and unfavorable conservation status (D'Amico et al., 2019).

Passerines (i.e., songbirds) and waterfowl (e.g., ducks) collide with powerlines (APLIC, 1994), particularly during nocturnal migrations or poor weather conditions (Avery et al., 1978). However, passerines and waterfowl may have a lower potential for collisions than larger birds, such as raptors, due to behavioral factors. For example, smaller birds tend to reduce their flight activity during poor weather conditions (Avery et al., 1978). Additionally, passerines and waterfowl tend to fly under power lines, as opposed to larger species, which generally fly over the lines and risk colliding with the higher static lines.

Raptors, ravens, and other large birds often perch and nest on tall structures, including electrical transmission towers and poles. Golden eagles, peregrine falcons, and other large raptors are most susceptible to electrocution on transmission structures because of their large size and wingspan, distribution, and behavior (APLIC, 1996; APLIC, 2006). Collisions involving raptors have occurred but appear to be relatively uncommon compared with collisions involving other species groups (Luzenski et al., 2016). Distribution lines that are greater than 1 kilovolt (kV), but less than 69 kV generally have less spacing than transmission lines, thus posing an electrocution hazard for perching raptors. Configurations less than 1 kV or greater than 69 kV, like the proposed 115 kV subtransmission system, typically do not present an electrocution potential, based on conductor placement and orientation (APLIC, 2006, 2012). The likelihood of electrocutions occurring at voltages greater than 69 kV is extremely low (APLIC, 1996).

Thus far, ongoing studies have shown that bats are susceptible to collisions with moving structures such as wind turbines, but infrequently collide with stationary structures (WEST, 2020). However, bats have

been found incidentally in bird mortality searches in both transmission and distribution powerline corridors (Manville, 2016). Bat mortality could also occur if individuals became trapped in other project equipment or infrastructure. It is anticipated that very few bat fatalities would occur during the life of the Project based on the very low bat fatalities discovered at regional projects.

Occurrence potential for special-status birds and bats is presented in Section 3.5.1.4 and Appendix 4, Table 4-1.

Birds in the vicinity of the built facility may be at risk of injury from collision with or electrocution from the transmission lines; however, the replaced transmission lines would not introduce a new hazard in the project vicinity. The Proposed Project would upgrade and replace existing facilities (e.g., transmission structures and conductors) without adding to the overall numbers of towers or conductors. The Project would not introduce new transmission facilities into locations where none existed previously; however, the heights of transmission lines would increase as previously described.

Mitigation. Collision risks to birds can be minimized after construction by marking the lines, which can be better detected by birds and avoided (Bateman et al., 2023; Bernardino et al., 2018). Wire marking studies concluded that this measure decreases bird collision by an average of 78%; however, the effectiveness of wire marking varies considerable depending on the surrounding environment, bird species, and the characteristics of the marker (Bernardino et al., 2018). Birds may generally be expected to detect and avoid marked transmission lines (Bernardino et al., 2018; Luzenski et al., 2016); however; species with susceptible characteristics, as previously described, may be at increased risk of collision.

The PEA (SCE, 2020) in Section 4.4.6.1.2 (page 4-129) states that all subtransmission facilities for the Project would be designed to be avian-safe, following the intent of Suggested Practices for Avian Protection on Power Lines: the State of the Art in 2006 (APLIC, 2006). All subtransmission facilities would be evaluated for potential collision risk and, where determined to be high risk, lines would be marked with collision reduction devices in accordance with Reducing Avian Collisions with Power Lines: The State of the Art in 2012 (APLIC, 2012; SCE, 2020).

However, these specifications are not defined in SCE's Project Description or incorporated into an APM. Mitigation Measure BIO-6a (Bird and Bat Collision) is recommended to ensure that risk of collision and electrocution are minimized to the greatest extent feasible. Full text of the measure is provided in Section 3.5.5.

- **Mitigation Measure BIO-6a (Bird and Bat Collision)** would require that transmission lines and structures be designed to discourage use by raptors for perching and nesting, to use markers to visually warn birds, and to maintain enough distance between lines to prevent electrocution of large birds, in accordance with APLIC guidelines. By marking transmission lines, birds would have increased chance of detection and avoidance. Adequate spacing of lines would reduce the risk of electrocution of large raptors. By implementing these design features, injury and mortality from collision and electrocution would be minimized. While the recommendations from APLIC are primarily focused on avoiding and minimizing impacts to birds, the recommendations and best practices would also benefit bats.

Impact Conclusion. With implementation of mitigation measures, impacts due to collision and electrocution during operations and maintenance would be less than significant.

Mitigation Measures for Impact BIO-6

The following mitigation measure shall be required:

- **Mitigation Measure BIO-6a: Bird and Bat Collision** (see full text in Section 3.5.5)

Impact BIO-7: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Construction

Impact Description. *LESS THAN SIGNIFICANT.* Proposed construction would impact biological resources including vegetation and habitat, special-status plants and wildlife, sensitive natural communities, wetlands, jurisdictional waters, wildlife movement corridors, nesting birds, and birds at risk of collision and electrocution, as described above in Impacts BIO-1 to -6.

Inyo County (Segment 1), Kern County (Segments 1, 2), and San Bernardino County (Segments 2, 3N, and 3S) General Plans have goals and policies related to these biological resources, as previously analyzed in Impacts BIO-1 to -6. However, pursuant to General Order 131-D, the Project is not subject to local land use authority because the CPUC has exclusive jurisdiction over the siting, design and construction of electric power line projects constructed by public utilities subject to CPUC jurisdiction.

Chapter 88.01 of the San Bernardino County Development Code outlines Plant Protection and Management ordinances, including preservation and protection of specific desert plants (creosote rings and Joshua trees) (Section 88.01.060) and protection of riparian plants within 200 feet of a stream bank (Section 88.01.080). Section 88.01.030, Exempt Activities, states that the provisions of the County's Plant Protection and Management ordinances (Chapter 88.01) shall not apply to the "removal [of regulated trees or plants] by a public utility subject to jurisdiction of the Public Utilities Commission." Therefore, the Proposed Project would not conflict with this ordinance.

Impact Conclusion. Goals and policies for biological resources in the Inyo County, Kern County, and San Bernardino County General Plans are not applicable to the Proposed Project, pursuant to General Order 131-D. The Project is exempt from San Bernardino County's Plant Protection and Management ordinances. There are no conflicts with local ordinances, therefore no significant impacts would occur under Impact BIO-7. No mitigation measures are required.

Operations and Maintenance

LESS THAN SIGNIFICANT. Proposed operations and maintenance activities would be similar to existing operations and maintenance. These activities would occur at established facility sites on a periodic basis. Most regular operations and maintenance of overhead facilities are performed from existing access roads with no surface disturbance.

As described for construction, there are no relevant policies or ordinances applicable to the Proposed Project. There are no conflicts with local ordinances, therefore no impacts would occur under Impact BIO-7. No mitigation measures are required.

Mitigation Measures for Impact BIO-7

No mitigation measures are required.

Impact BIO-8: Conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.

Construction

Impact Description. *LESS THAN SIGNIFICANT.* Proposed construction would impact biological resources including vegetation and habitat, special-status plants and wildlife, sensitive natural communities, wetlands, jurisdictional waters, wildlife movement corridors, nesting birds, and birds at risk of collision and electrocution, as described above in Impacts BIO-1 to BIO-6.

The Plan area for the BLM DRECP overlaps with the Proposed Project. The DRECP identified detailed Conservation Management Actions (CMAs) that must be implemented on BLM-administered lands to avoid and minimize impacts to environmental resources, and that are incorporated into the CDCA and Bishop RMP (see Section 3.5.3.1). As part of SCE's Plan of Development (POD) submitted to the BLM, SCE included the APMs listed in Table 3.5-1 to comply with DRECP CMAs.

No other Habitat Conservation Plans (HCP), Natural Community Conservation Plans (NCCP), or other approved local, regional, or State habitat conservation plans overlap the project area.

Impact Conclusion. The Proposed Project would be implemented in compliance with the DRECP and its CMAs, as applicable. The Project would not conflict with provisions of an adopted HCP, NCCP, or other approved local, regional, or State habitat conservation plan, therefore no significant impacts would occur. No mitigation measures are required.

Operations and Maintenance

LESS THAN SIGNIFICANT. Proposed operations and maintenance activities would be similar to existing operations and maintenance. The Proposed Project related operations and maintenance activities would occur at established facility sites on a periodic basis. Most regular operations and maintenance of overhead facilities are performed from existing access roads with no surface disturbance.

On BLM lands, the Project would be implemented in compliance with the DRECP and its required CMAs, as applicable. The Project would not conflict with provisions of an adopted HCP, NCCP, or other approved local, regional, or State habitat conservation plan, therefore no significant impacts would occur. No mitigation measures are required.

Mitigation Measures for Impact BIO-8

No mitigation measures are required.

3.5.4. Mitigation Measures for Biological Resources

Table 3.5-2 lists the mitigation measures applicable to each impact addressed in the analysis in Section 3.5.3 (Proposed Project). The full text of all mitigation measures follows the table.

Table 3.5-2. Summary of Impacts and Mitigation Measures

Impact (Summarized)	Mitigation Measures
Impact BIO-1 Effects on listed, candidate, sensitive, or special status species	BIO-1a. Worker Environmental Awareness Program (supersedes APM WEAP) BIO-1b. Biological Monitoring (supersedes APM BIO-GEN-1) BIO-1c. Minimization of Vegetation and Habitat Impacts BIO-1d. Compensation for Habitat Loss BIO-1e. Pre-construction Biological Resources Surveys BIO-1f. Wildlife impact avoidance and minimization BIO-1g. Crotch bumble bee BIO-1h. Special-status reptiles BIO-1i. Desert Tortoise (supersedes APM HERP-1) BIO-1j. Raven Monitoring, Management, and Control Plan BIO-1k. Mohave ground squirrel avoidance and minimization BIO-1l. American Badger and Desert Kit Fox BIO-1m. Special-status Bats (supersedes APM BIO-MAM-6) BIO-1n. Golden Eagle (supersedes APM BIO-AVI-4)
Impact BIO-2 Effects on riparian habitat or other sensitive natural community	BIO-1a. Worker Environmental Awareness Program (supersedes APM WEAP) BIO-1b. Biological Monitoring (supersedes APM BIO-GEN-1) BIO-1c. Minimization of Vegetation and Habitat Impacts BIO-1d. Compensation for Habitat Loss

Impact (Summarized)	Mitigation Measures
Impact BIO-3 Effects on jurisdictional wetlands, waters of the U.S., or waters of the state.	BIO-1a. Worker Environmental Awareness Program (supersedes APM WEAP) BIO-1b. Biological Monitoring (supersedes APM BIO-GEN-1) BIO-1c. Minimization of Vegetation and Habitat Impacts BIO-1d. Compensation for Habitat Loss
Impact BIO-4 Interference with the movement of any fish or wildlife species or with established wildlife corridors	BIO-1a. Worker Environmental Awareness Program (supersedes APM WEAP) BIO-1b. Biological Monitoring (supersedes APM BIO-GEN-1) BIO-1c. Minimization of Vegetation and Habitat Impacts BIO-1d. Compensation for Habitat Loss BIO-1e. Pre-construction Biological Resources Surveys BIO-1f. Wildlife impact avoidance and minimization BIO-1g. Crotch bumble bee BIO-1h. Special-status reptiles BIO-1i. Desert Tortoise (supersedes APM HERP-1) BIO-1j. Raven Monitoring, Management, and Control Plan BIO-1k. Mohave ground squirrel avoidance and minimization BIO-1l. American Badger and Desert Kit Fox BIO-1m. Special-status Bats (supersedes APM BIO-MAM-6) BIO-1n. Golden Eagle (supersedes APM BIO-AVI-4)
Impact BIO-5 Cause take of protected nesting birds	BIO-1a. Worker Environmental Awareness Program (supersedes APM WEAP) BIO-1b. Biological Monitoring (supersedes APM BIO-GEN-1) BIO-1c. Minimization of Vegetation and Habitat Impacts BIO-1d. Compensation for Habitat Loss BIO-1e. Pre-construction Biological Resources Surveys BIO-1f. Wildlife impact avoidance and minimization BIO-1n. Golden Eagle (supersedes APM BIO-AVI-4)
Impact BIO-6 Create risk of collision and electro-cution risk for birds or bats.	BIO-6a. Bird and Bat Collision
Impact BIO-7 Conflict with local policies or ordinances	No mitigation required
Impact BIO-8: Conflict with an adopted habitat conservation plan.	No mitigation required

The full text of all mitigation measures recommended in this section is as follows:

BIO-1a **Worker Environmental Awareness Program (WEAP)** *(Supersedes APM WEAP).* SCE shall prepare and implement a project-specific Worker Environmental Awareness Program (WEAP) to educate on-site workers about the Proposed Project's sensitive environmental issues. The WEAP shall be administered by the lead biologist or a biological monitor to all personnel on-site during the construction phase, including but not limited to surveyors, engineers, inspectors, contractors, subcontractors, supervisors, employees, monitors, visitors, and delivery drivers. If the WEAP presentation is recorded on video, it may be administered by any competent project personnel.

Throughout the duration of construction, SCE shall be responsible for ensuring that all on-site project personnel receive this training prior to beginning work. A construction worker may work in the field along with a WEAP-trained crew for up to 5 days prior to attending the WEAP. SCE shall maintain a list of all personnel who have completed the WEAP training. This list shall be provided to the CPUC and BLM upon request.

Training Contents: The WEAP shall consist of a training presentation, with supporting written materials provided to all participants. At least 60 days prior to the start of

ground-disturbing activities, SCE shall submit the WEAP presentation and associated materials to the CPUC and BLM for review and approval in consultation with the USFWS and CDFW.

The WEAP training shall include, at minimum:

- Overview of the Project, the jurisdictions the project route passes through (e.g., BLM, County, DRECP) and any special requirements of those jurisdictions.
- Overview of the federal and state Endangered Species Acts, Bald and Golden Eagle Protection Act, Migratory Bird Treaty Act, and the consequences of non-compliance with these acts.
- Overview of the project mitigation and biological permit requirements, and the consequences of non-compliance with these requirements.
- Sensitive biological resources on the project site and adjacent areas, including nesting birds, special-status plants and wildlife, and sensitive habitats known or likely to occur on the project site, project requirements for protecting these resources, and the consequences of non-compliance.
- Construction restrictions such as limited operating periods, environmentally sensitive areas (ESAs), and buffers.
- Avoidance of invasive weed introductions onto the project site and surrounding areas, and description of the project's weed control plan and associated compliance requirements for workers on the site.
- Function, responsibilities, and authority of biological and environmental monitors and how they interact with construction crews.
- Requirement to remain within authorized work areas and on approved roads, with examples of the flagging and signage used to designate these areas and roads, and the consequences of non-compliance.
- Procedure for obtaining clearance from a biological monitor to enter a work site and begin work (including moving equipment), and the requirement to wait for that clearance.
- One-hour hold (or other method SCE will use to halt work when necessary to maintain compliance) and the requirement for compliance.
- ESAs and associated restrictions, and other restrictions such as no grading areas, flagging or signage designations, and consequences of non-compliance.
- Nest buffers and associated restrictions and the consequences of non-compliance. Procedure and time frame for halting work and removing equipment when a new buffer is established. Discussion of nest deterrents.
- Explanation that wildlife must not be harmed or harassed. Procedures for covering pipes, securing excavations, and installing ramps to prevent wildlife entrapment. What to do and who to contact if dead, injured, or entrapped animals are encountered (Mitigation Measure BIO-1f (Wildlife impact avoidance and minimization).
- General safety protocols such as hazardous substance spill prevention, containment, and cleanup measures; fire prevention and protection measures; designated smoking areas (if any) and cigarette disposal; safety hazards that may be caused by plants and animals; and procedure for dealing with rattlesnakes in or near work areas or access roads (Mitigation Measure BIO-1f, Wildlife impact avoidance and minimization, APM HAZ-1).
- Project requirements that have resulted in repeated compliance issues on other recent transmission line projects, such as dust control, speed limits, track out (dirt or mud tracked from access roads or work sites onto paved public roads or other areas), personal protective equipment (PPE), work hours, working prior to clearance, and waste containment and disposal.

- Printed training materials, including photographs and brief descriptions of all special-status plants and animals that may be encountered on the Project, including behavior, ecology, sensitivity to human activities, legal protection, penalties for violations, reporting requirements, and protection measures.
- Contact information for SCE, construction management, and contractor environmental personnel, and who to contact with questions.
- Training acknowledgment form to be signed by each worker indicating that they understand and will abide by the guidelines, and a hardhat sticker so WEAP attendance may be easily verified in the field.

WEAP Lite. An abbreviated version of WEAP training ("WEAP lite") may be used for individuals who are exclusively delivery drivers, concrete truck drivers, or visitors to the project site, and will be provided by a qualified project biologist, biological monitor, or environmental field staff prior to those individuals entering or working on the Project.

Short-term visitors (total of 5 days or less per year) to the project site who will be riding with and in the company of WEAP-trained project personnel for the entire duration of their visit(s) are not required to attend WEAP or WEAP lite training.

WEAP lite training will provide sufficient information for the individual to understand and maintain compliance with project mitigation measures and permit conditions. WEAP lite presentations will be tailored to the situation and emphasize project requirements that are relevant to that situation (e.g., dust control, speed limits, staying within project roads and work areas, and use of washouts for concrete truck drivers).

A training acknowledgment form will be signed by each participant indicating that they understand and will abide by the guidelines, and a hardhat sticker so WEAP lite attendance may be easily verified in the field. SCE will maintain a list of personnel who have completed WEAP lite training. This list will be provided to the CPUC and BLM upon request.

WEAP Refreshers. Biological monitors or environmental field staff will periodically present brief WEAP refresher presentations at tailboards to help construction crews and other personnel maintain awareness of environmental sensitivities and requirements. A 5- to 10-minute informal talk will be presented at each of the Project's main contractor/subcontractor tailboards at least once a week.

When a contractor or subcontractor resumes work after a long break (more than six (6) consecutive calendar days with no substantial work on project construction in the field), a biological monitor or environmental field staff will provide an extended WEAP refresher presentation (10 to 20 minutes) at each of the contractor/subcontractor tailboards on the first day back to work.

The monitor will note the date, contractor or subcontractor, tailboard location and time, and topic(s) discussed during the WEAP refresher and include this information in their daily monitoring report.

Implementation locations: All work areas. All segments.

BIO-1b **Biological Monitoring** (Supersedes APM BIO-GEN-1).

Pre-construction biological resources surveys. SCE shall assign qualified biologists, which may include the Lead Biologist and Biological Monitors (below), as qualified, to perform pre-construction biological surveys at each project work area, access route, and the vicinity. Survey distances will be no less than 300 feet surrounding each work site and along any access route being created or improved, and no less than 100 feet along

existing routes. Survey distances may vary, as appropriate, based on target species and as stipulated by project work plans, species-specific plans, and mitigation plans. Where suitable nest sites for raptors are present, the pre-construction surveys for raptor nests will extend to a 500-foot area surrounding the work area or road.

Pre-construction surveys shall be planned and implemented to identify locations of special-status plants, wildlife, and nesting birds occurring at work areas, other portions of the ROW, or in adjacent buffer areas. Specific pre-construction survey methods or protocols will vary according to the resources which may be present at any given site, and according to season. At minimum, SCE shall complete pre-construction surveys 10 days prior to beginning work in any given area, and repeat the surveys if the work site remains inactive for a period of ten days or more. During nesting season, a qualified biologist shall complete nesting bird surveys as described in APM BIO-AVI-1 (Impact BIO-5).

SCE shall submit resumes of all biologists performing pre-construction and protocol biological surveys to the CPUC for review and approval, in coordination with CDFW and USFWS. Results of pre-construction surveys shall be submitted to CPUC for review and approval and no work shall occur until the CPUC Environmental Monitor has validated the survey results and any applicable resource and work area boundary staking. Each pre-construction survey report shall include methods and results of the preconstruction survey, and a list of biological resources detected at each site during prior focused surveys or pre-construction surveys. The pre-construction survey report format and contents shall be subject to CPUC review and approval.

SCE also shall conduct pre-construction "sweeps" of each work site immediately prior to beginning construction or disturbance work, to identify any vulnerable wildlife that may have entered the site. Based on the results of pre-construction surveys and sweeps, SCE or its contractor shall observe buffer areas or other access or activity restrictions to minimize potential impacts to the resources. SCE shall provide documentation of the methods and results of all pre-construction surveys, and follow-up buffer areas or other avoidance measures that are implemented, to the CPUC.

Biological Monitoring Team. Monitoring of construction and post-construction restoration phases will be performed by a monitoring team to ensure conformance with conditions of approval, effective protection, and avoidance of biological resources. During construction and restoration, the Applicant shall employ a biological monitoring team to oversee project activities. Any activity that may impact vegetation, wildlife, and sensitive resources would be monitored to ensure compliance with all mitigation measures for biological resources.

The biological monitoring team would consist of:

Lead biologist: SCE shall nominate a lead biologist and submit the nominee's resume to the CPUC and BLM for concurrence, no less than 60 days prior to the start of any ground-disturbing activities, including those occurring prior to site mobilization (including, but not limited to geotechnical borings or hazardous waste evaluations). At minimum the lead biologist will hold a bachelor's degree in biological sciences, zoology, botany, ecology, or a closely related field; have at least three years of experience in field biology and at least one year of direct field experience with biological resources found in or near the project area, OR relevant education and experience that demonstrates the ability to carry out the tasks required of a lead biologist. The resume shall demonstrate to the satisfaction of the CPUC the appropriate education and experience to accomplish the assigned biological resources tasks.

The lead biologist will be SCE's primary point of contact to CPUC, CDFW, and USFWS regarding any biological resources issues and implementation of related mitigation measures and permit conditions throughout project construction and post-construction restoration work. In addition, the lead biologist will oversee supervision and training of biological monitors (below) and preparation and submission of all monitoring reports and notifications (below).

If the lead biologist is replaced, the specified information of the proposed replacement must be submitted to the CPUC at least ten working days prior to the termination or release of the preceding lead biologist. In an emergency, SCE shall immediately notify the CPUC and BLM to discuss the qualifications and approval of a short-term replacement while a permanent lead biologist is proposed for consideration.

Biological monitors: SCE shall assign qualified biological monitors to the Project to monitor all work activities during the construction phase.

Monitors are responsible for ensuring that impacts to special-status species, native vegetation, wildlife habitat, and sensitive or unique biological resources are avoided or minimized to the fullest extent safely possible. Monitors shall ensure that work activities are conducted in compliance with APMs, mitigation measures, permit conditions, and other project requirements.

Resumes of all biological monitors, including specialty monitors (including but not limited to bat, nesting bird, and special-status species monitors), shall be provided for concurrence by the CPUC, at least 10 working days prior to the monitor commencing field duties. The resumes shall demonstrate, to the satisfaction of the CPUC, the appropriate education and experience to accomplish the assigned biological resources tasks.

SCE shall provide training to biological monitors, in addition to WEAP (Mitigation Measure BIO-1a, Worker Environmental Awareness Program, Mitigation Measure BIO-1b, Biological Monitoring) and prior to the monitor commencing field duties, on biological resources present or potentially present on the Proposed Project, as well as mitigation measures, permit requirements, project protocols, and the duties and responsibilities of a biological monitor.

Biological monitors shall inform construction crews daily of any environmentally sensitive areas (ESAs), nest buffers, or other resource issues or restrictions that affect the work sites for that day. Biological monitors shall communicate with construction supervisors and crews as needed (e.g., at daily tailgate safety meetings ("tailboards"), by telephone, text message, or email) to provide guidance to maintain compliance with mitigation measures and permit conditions. SCE shall ensure that adequate numbers of monitors are assigned to effectively monitor work activities and that communications from biological monitors are promptly directed to crews at each work site for incorporation into daily work activities. If biological monitors are unavailable for a tailboard meeting, the construction supervisors shall communicate all ESA, nest buffers, or other resource restrictions to crews during the meeting. SCE shall ensure that biological monitors are provided with an accurate daily construction work schedule as well as updated information on any alterations to the daily construction work schedule. This information shall also be provided to CPUC monitors. SCE shall ensure that biological monitors are provided with up-to-date biological resource maps and construction maps in hardcopy or digital format. These maps shall also be provided to CPUC monitors.

Monitors shall be familiar with the biological resources present or potentially present, ESAs, nest buffers, and any other resource issues at the site(s) they are monitoring, as well as the applicable mitigation measures and permit requirements. Monitors shall exhibit diligence in their monitoring duties and refrain from any conduct or potential conflict of interest that may compromise their ability to effectively carry out their monitoring duties.

Authorized Desert Tortoise Biologist: For desert tortoise protection measures (Mitigation Measure BIO-1i, Desert Tortoise), the Applicant will nominate a qualified individual to serve as Authorized Desert Tortoise Biologist for approval by the USFWS.

Monitor duties and responsibilities: Throughout the duration of construction, SCE shall conduct biological monitoring of all activities in any area where there is a potential to impact sensitive biological resources or jurisdictional waters, including but not limited to vegetation removal/trimming/disturbance, all clearing and ground-disturbing work activities, including in work sites, yards, staging areas, access roads, and any area subject to project disturbance. Pre-construction activities and post-construction restoration shall also be monitored by a biological monitor during all such ground-disturbing activities.

Each day, prior to work activities at each site, a biological monitor shall conduct clearance surveys ("sweeps") for sensitive plant or wildlife resources that may be located within or adjacent to the construction areas. If sensitive resources are found, the biological monitor shall take appropriate action as defined in all adopted mitigation measures, APMs, and permit conditions. Work activities shall not commence at any work site until the clearance survey has been completed and the biological monitor communicates to the contractor that work may begin.

Biological monitors shall clearly mark sensitive biological resource areas with staking, flagging, or other appropriate materials that are readily visible and durable. The monitors will inform work crews of these areas and the requirements for avoidance, and will inspect these areas at appropriate intervals for compliance with regulatory terms and conditions. The biological monitors shall ensure that work activities are contained within approved disturbance area boundaries at all times.

Biological monitors shall have the authority and responsibility to halt any project activities that are not in compliance with applicable mitigation measures, APMs, permit conditions, or other project requirements, or will have an unauthorized adverse effect on biological resources.

Handling, relocation, release from entrapment, or other interaction with wildlife shall be performed in a manner that is consistent with mitigation measures, safety protocols, permits (including CDFW and USFWS permits), and other project requirements.

Biological monitors shall, to the extent safe, practicable, and consistent with mitigation measures and permit conditions, actively or passively relocate wildlife out of harm's way. Daily, biological monitors shall inspect construction areas where animals may have become trapped, including equipment covered with bird exclusion netting, and release any trapped animals. Daily inspections shall also include areas with high vehicle activity (e.g., yards, staging areas), to locate animals in harm's way and relocate them if necessary. If safety or other considerations prevent biological monitors from aiding trapped wildlife or wildlife in harm's way, SCE shall consult with the construction contractor, CDFW, wildlife rehabilitator, or other appropriate party to obtain aid for the animal, consistent with Mitigation Measure BIO-1f (Wildlife impact avoidance and minimization).

At the end of each workday, biological monitors shall verify that excavations, open tanks, and trenches have been covered or have ramps installed to prevent wildlife entrapment and communicate with work crews to ensure these structures are installed and functioning properly.

Biological monitors shall regularly inspect any wildlife exclusion fencing daily to ensure that it remains intact and functional. Any need for repairs to exclusion fencing shall be immediately communicated to the responsible party, and repairs shall be carried out in a timely manner, generally within one workday.

Monitoring Reporting: SCE shall prepare and implement a procedure for communication among biological monitors and construction crews, to ensure timely notification (i.e., daily or sooner, as needed) to crews of any resource issues or restrictions. SCE will notify the CPUC of the procedure and will maintain records of daily communication. SCE will provide CPUC on-line access to project resource management maps and GIS data.

Monitoring activities shall be thoroughly and accurately documented daily. SCE shall prepare and submit daily, weekly, annual, and final monitoring reports to the CPUC. Prior to the start of monitoring activities, SCE shall provide proposed report formats, describing content and organization, for CPUC review and approval in consultation with CDFW and USFWS. Report contents shall be as follows:

Daily reports:

(i) All daily special status species observations, including location of observation, location and description of project activities in the vicinity, and any avoidance or other measures taken to avoid the species. In addition, all special-status species observations shall be reported to the CNDDB (California Natural Diversity Database; see Weekly reports).

(ii) All non-compliance incident reports, including nest buffer incursions (APM AVI-1 (Prepare and implement a Nesting Bird Management Plan)).

(iii) Daily project activity plans, specifying each work site.

Weekly reports:

(i) Copies of all CNDDB records for the preceding week, and any additional reporting information for each species report (species-specific APMs, Mitigation Measure BIO-1g to Mitigation Measure BIO-1n).

(ii) Weekly update of bird nesting activities and buffer distances (APM BIO-AVI-1 (Prepare and implement a Nesting Bird Management Plan)).

Annual reports: SCE shall submit an annual monitoring report by January 30 of each calendar year, with the following contents:

(i) A summary of all compliance monitoring reports submitted throughout the calendar year;

(ii) A summary of all non-compliance records occurring during the calendar year, and remedial actions applied for each one, with additional explanatory text and explanation of resolution of each substantial non-compliance incident (often termed “Level 3 non-compliance”);

(iii) A summary of all nest buffer incursions, including helicopter incursions, (APM BIO-AVI-1), with explanation of follow-up actions and resolution for each one;

(iv) Running annual compilations of permanent and temporary impact acreages by habitat and land use jurisdiction;

(v) Summaries of all other monitoring reporting requirements, as specified in mitigation measures in the Vegetation and Wildlife Resources sections; and

(vi) Discussion of "lessons learned" during the calendar year, and recommended or proposed measures to improve compliance throughout the remainder of the Project.

Final report: After construction has been completed, a final environmental compliance monitoring report shall be submitted to the CPUC for review and approval. This report shall be submitted within twelve (12) months of the completion of construction and shall include:

(i) A summary of all non-compliance records occurring during the construction phase, and remedial actions applied for each one, with additional explanatory text and explanation of resolution of each substantial non-compliance incident (often termed "Level 3 non-compliance");

(ii) A summary of all nest buffer incursions, including helicopter incursions, (APM BIO-AVI-1) occurring during the construction phase, with explanation of follow-up actions and resolution for each one;

(iii) Final compilations of permanent and temporary impact acreages by habitat and land use jurisdiction;

(iv) Summaries of all other monitoring reporting requirements, as specified in mitigation measures in the Vegetation and Wildlife Resources sections; and

(v) Discussion of "lessons learned" during construction and recommended or proposed measures to improve compliance for future projects.

Implementation locations: All work areas. All segments.

BIO-1c **Minimization of Vegetation and Habitat Impacts.** Final engineering of the Project shall minimize the extent of disturbance and removal of native vegetation and habitat, to the extent safe and feasible. Work activities and roadways will avoid or minimize direct or indirect effects to sensitive habitat types or jurisdictional waters and provide buffer areas to minimize disturbance. Wherever feasible, project access will utilize existing routes or bridges over jurisdictional waters.

As feasible, and consistent with project safety and security protocols, landowner preferences, and any other applicable regulations or requirements, existing gates on project access roads will be closed and secured when project personnel enter or leave an area.

Prior to beginning any ground-disturbing activities, SCE shall provide CPUC with final engineering GIS shapefiles depicting all temporary and permanent disturbance areas, as well as summary data on temporary and permanent disturbance for each vegetation or habitat type in each segment.

As phases of disturbance and/or construction of segments are completed, and as requested by CPUC, SCE shall provide CPUC with GIS shapefiles. Shapefiles shall include all actual temporary and permanent disturbance areas, accurate aerial imagery of the project area, and summary data of all discrepancies between final engineering and "as-built" conditions for each vegetation or habitat type, within each segment.

To the extent feasible, stockpiling of spoils and salvaged topsoil will be located in previously disturbed areas, and will avoid native vegetation.

Prior to any construction, equipment or crew mobilization at each work site, work areas will be marked with staking or flagging to identify the limits of work and will be verified by project environmental staff and the Lead Biologist. Staking and flagging will clearly indicate the work area boundaries. Where staking cannot be used, traffic cones, traffic delineators, or other markers will be used. Staking and flagging or other markers will be in place during construction activities at each work site and will be refreshed as needed. Coded flagging colors or color combinations will be consistent and uniform across the Project. All work activities, vehicles, and equipment will be confined to approved roads and staked and flagged or marked work areas.

Implementation locations: All work areas. All segments.

BIO-1d **Compensation for habitat loss.** SCE will acquire and protect, in perpetuity, compensation habitat to mitigate impacts to biological resources as detailed below. SCE shall compensate for permanent or long-term habitat loss, which encompasses all permanent project disturbance areas and areas designated as temporary disturbance, but that cannot be effectively revegetated or restored to replace habitat values within a five-year timeframe.

Prior to the initiation of construction, SCE will prepare a Habitat Compensation Plan to be reviewed and approved by the CPUC, in consultation with the resource agencies. Compensation may be accomplished through non-acquisition (restoration and enhancement), contributions to an agency approved mitigation or conservation bank(s), or through the acquisition and long-term management of compensation lands. SCE shall be responsible for the acquisition, initial protection and habitat improvement, and long-term maintenance and management of any compensation lands.

Compensation will be provided for impacts to the following resources, at the ratios specified below (acres acquired/preserved to acres impacted). These ratios reflect multiple biological resource values, including habitat suitability for special-status species. Compensation ratios and acres of compensation may be modified or further defined in permits issued by the resource agencies, including USFWS, CDFW, RWQCB, and/or USACE.

Habitat Loss and Compensation	Compensation Ratio
Habitat	
Joshua Tree Woodland	5:1
Riparian Thickets and Forests	3:1
CDFW Sensitive Natural Communities (S1-S3)	2:1
Jurisdictional Waters[1]	
USACE/RWQCB non-wetland jurisdictional waters	1:1
CDFW non-wetland jurisdictional waters	1:1
State and Federal jurisdictional wetland areas	3:1
Special-status Wildlife	
Desert Scrub (suitable for desert tortoise)	1:1
Desert Tortoise Critical Habitat (in same CHU)	5:1
Western Burrowing Owl Suitable Habitat	3:1
Mohave ground squirrel	1:1

[1] Specific ratios may vary depending on updated jurisdictional delineation.

The Habitat Compensation Plan will specify compensation acreage for each habitat type, based on final engineering. Final compensation requirements may be adjusted to account for any deviations in project disturbance, according to the as-built shapefiles aerial imagery (Mitigation Measure BIO-1c, Minimization of vegetation and habitat impacts). If appropriate, as approved by resource agencies, compensation may be "nested" or "layered" to the extent that it meets habitat requirements for multiple species that may be impacted by the Project.

SCE shall provide compensation habitat that is of comparable quality and value to the habitat impacted, taking into consideration soils, vegetation, topography, human-related disturbance, invasive species, wildlife movement opportunity, proximity to other protected lands, management feasibility, and other habitat values. The primary focus area for acquiring parcels will be within the Western Mojave Recovery Unit, which encompasses the Fremont-Kramer, Superior-Cronese, and Ord-Rodman CH Units.

Compensation lands will be placed under conservation management to be funded through the terms described herein. If there is any discrepancy between the requirements of this mitigation measure and requirements of any resource agency permit (e.g., USFWS Biological Opinion, CDFW Incidental Take Permit, CDFW LSAA), the more stringent (highest ratio) requirement shall apply.

Compensation Land Selection Criteria. Criteria for the acquisition, initial protection and habitat improvement, and long-term maintenance and management of compensation lands for impacts to biological resources will include all of the following:

- Compensation lands will provide habitat value that is equal to or better than the quality and function of the habitat impacted by the Project, taking into consideration soils, vegetation, topography, human-related disturbance, wildlife movement opportunity, proximity to other protected lands, management feasibility, and other habitat values, subject to review and approval by CPUC;
- To the extent that proposed compensation habitat may have been degraded by previous uses or activities, the site quality and nature of degradation must support the expectation that it will regenerate naturally when disturbances are removed;
- Be near larger blocks of lands that are either already protected or planned for protection, or which could feasibly be protected long-term by a public resource agency or a non-governmental organization dedicated to habitat preservation;
- Not have a history of intensive recreational use or other disturbance that might cause future erosion or other habitat damage, and make habitat recovery and restoration infeasible;
- Not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, which might jeopardize habitat recovery and restoration;
- Not contain hazardous wastes that cannot be removed to the extent that the site could not provide suitable habitat;
- Must provide wildlife movement value equal to that on the project site, based on topography, presence and nature of movement barriers or crossing points, location in relationship to other habitat areas, management feasibility, and other habitat values; and

- Have water and mineral rights included as part of the acquisition, unless the CPUC and BLM, in consultation with CDFW and USFWS, agree in writing to the acceptability of land without these rights.

Review and Approval of Compensation Lands Prior to Acquisition. Prior to the initiation of construction, SCE shall submit a Draft Habitat Compensation Plan for review and approval by the CPUC describing the parcel(s) intended for protection. This Plan will discuss the suitability of the proposed parcel(s) as compensation lands in relation to the selection criteria listed above.

Management Plan. Prior to the initiation of construction, SCE or approved third party will prepare a management plan for the compensation lands in consultation with the entity that will be managing the lands. The goal of the management plan will be to support and enhance the long-term viability of the biological resources. The Management Plan will be submitted for review and approval to the CPUC, in consultation with CDFW and USFWS.

Compensation Lands Acquisition Requirements. SCE will comply with the following requirements relating to acquisition of the compensation lands after the CPUC has approved the proposed compensation lands:

- Preliminary Report. SCE or an approved third party will provide a recent preliminary title report, initial hazardous materials survey report, biological resources analysis, and other necessary or requested documents for the proposed compensation land to the CPUC. All documents conveying or conserving compensation lands and all conditions of title are subject to review and approval by the CPUC in consultation with CDFW and USFWS. For conveyances to the State, approval may also be required from the California Department of General Services, the Fish and Game Commission, and the Wildlife Conservation Board.
- Title/Conveyance. SCE will acquire and transfer fee title to the compensation lands, a conservation easement over the lands, or both fee title and conservation easement, as required by the CPUC, in consultation with USFWS and CDFW. Any transfer of a conservation easement or fee title must be to CDFW, to a non-profit organization qualified to hold title to and manage compensation lands (pursuant to California Government Code section 65965), or to BLM or other public agency approved by the CPUC. If an approved non-profit organization holds fee title to the compensation lands, a conservation easement will be recorded in favor of CDFW or another entity approved by the CPUC. If an entity other than CDFW holds a conservation easement over the compensation lands, the CPUC may require that CDFW or another entity approved by the CPUC, in consultation with CDFW and USFWS, be named a third-party beneficiary of the conservation easement. SCE will obtain approval of the CPUC of the terms of any transfer of fee title or conservation easement to the compensation lands.
- Initial Protection and Habitat Improvement. SCE will fund activities that the CPUC may require for the initial protection and habitat improvement of the compensation lands. These activities will vary depending on the condition and location of the land acquired, but may include trash removal, construction and repair of fences, invasive plant removal, and similar measures to protect habitat and improve habitat quality on the compensation lands. A non-profit organization, CDFW, or another public agency may hold and expend the habitat improvement funds if it is qualified to manage the compensation lands (pursuant to California Government Code section 65965), if it meets the approval of the CPUC, in consultation with USFWS and CDFW, and if it is authorized to participate in implementing the required activities on the compensation lands.

If CDFW takes fee title to the compensation lands, the habitat improvement fund must be paid to CDFW or its designee.

- Property Analysis Record. Upon identification of the compensation lands, SCE will conduct a Property Analysis Record (PAR) or PAR-like analysis to establish the appropriate amount of the long-term maintenance and management fund to pay the in-perpetuity management of the compensation lands. The PAR or PAR-like analysis must be approved by the CPUC, in consultation with USFWS and CDFW, before it can be used to establish funding levels or management activities for the compensation lands.
- Long-term Maintenance and Management Funding. SCE will provide funding to establish an account with non-wasting capital that will be used to fund the long-term maintenance and management of the compensation lands. The amount of money will be determined through an approved PAR or PAR-like analysis conducted for the compensation lands. SCE must obtain the approval of the entity that will receive and hold the long-term maintenance and management fund for the compensation lands. The CPUC will consult with USFWS and CDFW before deciding whether to approve an entity to hold the Project's long-term maintenance and management funds.

  SCE will ensure that an agreement is in place with the long-term maintenance and management fund holder/manager to ensure the following requirements are met:

  - Interest. Interest generated from the initial capital long-term maintenance and management fund will be available for reinvestment into the principal and for the long-term operation, management, and protection of the approved compensation lands, including reasonable administrative overhead, biological monitoring, habitat improvements, patrol and law enforcement activities, and any other action that is approved by the CPUC and is designed to protect or improve the habitat values of the compensation lands.
  - Withdrawal of Principal. The long-term maintenance and management fund principal will not be drawn upon unless such withdrawal is deemed necessary by the CPUC, or by the approved third-party long-term maintenance and management fund manager, to ensure the continued viability of the species on the compensation lands.
  - Pooling Long-Term Maintenance and Management Funds. An entity approved to hold long-term maintenance and management funds for the Project may pool those funds with similar non-wasting funds that it holds from other projects for long-term maintenance and management of compensation lands. However, for reporting purposes, the long-term maintenance and management funds for this project must be tracked and reported individually to the CPUC.
- Other Expenses. In addition to the costs listed above, SCE will be responsible for all other costs related to acquisition of compensation lands and conservation easements, including but not limited to the title and document review costs incurred from other state agency reviews, overhead related to providing compensation lands to CDFW or an approved third party, escrow fees or costs, environmental contaminants clearance, and other site cleanup measures.
- Delegation. The responsibility for acquisition of compensation lands may be delegated to a third party, by written agreement of the CPUC, in consultation with CDFW, prior to land acquisition, enhancement or management activities.

Implementation Locations: All segments in permanent and long-term impact areas.

BIO-1e **Pre-construction biological resources surveys.** SCE shall assign qualified biologists to perform pre-construction biological surveys at each project work area and access route, and in the area surrounding each work site or access route. Survey distances will vary, as appropriate, based on target species and as stipulated by project work plans and mitigation plans, but will be no less than 300 feet surrounding each work site and along any access route being created or improved. (Improvement is considered to be both 'drive and crush' and any road work that causes greater disturbance than light blading of previously existing roads.) For project access along existing routes or routes improved during an earlier phase of the Project, the survey requirement will be 100 feet. An exception would be if a greater distance is stipulated in other applicable project work plans or mitigation measures. Where suitable nest sites for raptors are present, the pre-construction surveys for raptor nests will extend to a 500-foot area surrounding the work area or road.

Pre-construction surveys shall be planned and implemented to identify locations of special-status plants and wildlife and nesting birds occurring at work areas, other portions of the ROW, or in adjacent buffer areas. Specific pre-construction survey methods or protocols will vary according to the resources which may be present at any given site, and according to season. At minimum, SCE shall complete pre-construction surveys 10 days prior to beginning work in any given area and repeat the surveys if the work site remains inactive for a period of ten days or more. During nesting season, a qualified biologist shall complete nesting bird surveys no more than four (4) days prior to beginning work at any given area and repeat the surveys regularly so long as work continues at the site during the nesting season.

SCE shall submit resumes of all biologists performing pre-construction biological surveys to the CPUC and BLM for review and approval, in coordination with CDFW and USFWS. Results of pre-construction surveys shall be submitted to CPUC and BLM for review and approval and no work shall occur until the CPUC Environmental Monitor has validated the survey results and any applicable resource and work area boundary staking. Each pre-construction survey report shall include methods and results of the preconstruction survey, and a list of biological resources detected at each site during prior focused surveys or pre-construction surveys. The pre-construction survey report format and contents shall be subject to CPUC and BLM review and approval.

SCE also shall conduct pre-construction "sweeps" of each work site immediately prior to beginning construction or disturbance work, to identify any vulnerable wildlife that may have entered the site. Based on the results of pre-construction surveys and sweeps, SCE or its contractor shall observe buffer areas or other access or activity restrictions to minimize potential impacts to the resources. SCE shall provide documentation of the methods and results of all pre-construction surveys, and follow-up buffer areas or other avoidance measures that are implemented, to the CPUC and BLM.

Implementation locations: All work areas. All segments.

BIO-1f **Wildlife impact avoidance and minimization.** SCE shall undertake the following measures during the construction, restoration, and operations and maintenance phases to avoid or minimize impacts to wildlife resources. Implementation of all measures shall be subject to review and approval by the CPUC in consultation with CDFW and USFWS. Impacts to nesting birds are addressed separately in APM BIO-AVI-1 (Prepare and implement a Nesting Bird Management Plan).

Minimize traffic impacts. SCE will specify and enforce a maximum 20 mile per hour vehicle speed limit on access roads within the ROW and project vicinity. No project-related

pedestrian or vehicle traffic will be permitted outside maintained roads, designated routes, or defined work site boundaries (as demarcated on the site according to Mitigation Measure BIO-1c (Minimization of Vegetation and Habitat Impacts).

Minimize lighting impacts. Night lighting, when in use, shall be designed, installed, and maintained to prevent side casting of light towards surrounding fish or wildlife habitat.

Avoid use of toxic substances. Soil bonding and weighting agents used for dust suppression on unpaved surfaces shall be non-toxic to wildlife and plants.

Minimize noise and vibration impacts. To minimize disturbance to wildlife nesting or breeding activities in surrounding habitat, project-related helicopter use shall be avoided or managed to the extent feasible from January 1 through August 31. Unnecessary noise (e.g., blaring radios) shall be avoided.

Water. Potable and non-potable water sources such as tanks, ponds, and pipes shall be covered or otherwise secured to prevent animals (including birds) from entering. Prevention methods may include storing all water within closed tanks, providing a means of escape for wildlife, or other means as applicable. Water applied to dirt roads and construction areas for dust abatement shall use the minimal amount needed to meet safety and air quality standards, to avoid ponding and attracting wildlife. Water sources (e.g., hydrants, tanks, etc.) shall be checked periodically by biological monitors to ensure they are not creating open water sources by leaking or consistently overfilling trucks.

Worker guidelines. All trash and food-related waste shall be contained in vehicles or covered trash containers and removed from the site daily to reduce attractiveness to opportunistic predators, such as common ravens *(Corvus corax)*, coyotes *(Canis latrans)*, and feral dogs *(Canis lupus familiaris)*. Workers shall not feed wildlife or bring pets to the project site. Except for law enforcement personnel, no workers or visitors to the site shall bring firearms or weapons.

Wildlife netting or exclusion fencing. SCE may install temporary or permanent netting or fencing around equipment, work areas, or project facilities to prevent wildlife exposure to hazards such as toxic materials or vehicle strikes or prevent birds from nesting on equipment or facilities. Bird deterrent netting will be maintained free of holes and will be deployed and secured on the equipment in a manner that, insofar as possible, prevents wildlife from becoming trapped inside the netted area or within the excess netting. The biological monitor will inspect netting (if installed) twice daily, at the beginning and close of each workday, with the exception of netting installed in established material yards, which will be inspected at least once daily. The biological monitor will inspect exclusion fence (if installed) weekly and will inform SCE of any needed repairs; SCE shall promptly repair any damage to the exclusion fencing.

Wildlife entrapment. Project-related excavations shall be secured to prevent wildlife entry and entrapment. Holes, trenches, pits or other steep-sided excavations that may pose a hazard to wildlife shall be backfilled, securely covered, or fenced. Excavations that cannot be fully secured shall incorporate appropriate earthen or wooden wildlife ramp(s) at a slope of no more than a 3:1 ratio, or other means to allow trapped animals to escape. Biological monitors shall provide guidance to construction crews to ensure that wildlife ramps or other means are sufficient to allow trapped animals to escape. At the end of each workday and just before backfilling, a biological monitor shall ensure that all excavations have been secured or provided with appropriate means for wildlife escape.

All pipes or other construction materials or supplies will be covered or capped in storage or laydown areas. No pipes or tubing will be left open either temporarily or permanently, except during use or installation. Any construction pipe, culvert, or other hollow materials will be inspected for wildlife before it is moved, buried, or capped.

Water tanks and ponds will be secured with a cover or otherwise fitted with a means of escape for wildlife.

If found, trapped animals will be removed by the qualified biologist and relocated to outside the project footprint, as required in all applicable permits or habitat conservation plans.

Dead animals. Dead animals of non-special-status species found on unpaved project roads, work areas, or the ROW shall be reported to the appropriate local animal control agency within 24 hours. A biological monitor shall safely move the carcass out of the road or work area as needed. Dead animals of special-status species found on unpaved project roads, work areas, or the ROW shall be reported to CDFW within one workday and the carcass handled as directed by CDFW.

Injured wildlife. SCE shall create and implement guidelines for dealing with injured or entrapped wildlife found on or near project roads, work areas, or the ROW, and provide these guidelines to all biological monitors. If an animal is entrapped, a qualified biological monitor shall free the animal if feasible, or work with construction crews to free the animal, in compliance with applicable safety regulations and project requirements. If biological monitors cannot free the animal or the animal is too large or dangerous for monitors to handle, SCE shall contact and work with animal control, CDFW, or other qualified party to obtain assistance for the animal as soon as possible.

SCE shall ensure that one or more qualified biological monitors receive training in the safe and proper handling and transport of injured wildlife and are provided with the appropriate equipment. These trained and equipped monitors shall be available to capture and transport injured wildlife to a local wildlife rehabilitator or veterinarian as needed. If the injured animal is too large or dangerous for monitors to handle, or a trained and equipped monitor is not available, SCE shall contact and work with a local wildlife rehabilitator, animal control, CDFW, or other qualified party to obtain assistance for the animal as soon as possible. SCE shall bear the costs of veterinary treatment and rehabilitation for any wildlife injured by project-related activities and any injured wildlife found on or near project roads, work areas, or the ROW, unless the injuries are clearly not project-related, as determined by a qualified biologist. Additionally, any entrapped or injured special-status species found on project roads, work areas, or the ROW shall be reported to the appropriate resource agency within one workday.

Rattlesnake guidelines. Prior to the start of construction, SCE shall prepare and implement guidelines for dealing with rattlesnakes found in or near project work areas and access roads and provide these guidelines to all biological monitors, safety staff, and other personnel. Killing or harming rattlesnakes or other wildlife is not authorized. If SCE determines that it is appropriate for biological monitors or other project personnel to handle rattlesnakes, SCE shall ensure that an adequate number of qualified individuals are trained in the safe and proper handling of rattlesnakes and provided with the appropriate safety and snake handling equipment, including a secure storage container for transporting snakes. These trained and equipped individuals shall be available to remove rattlesnakes found in or near project work areas and access roads as needed and relocate them to appropriate nearby habitat. Other project personnel shall not harass or handle rattlesnakes, except as required to maintain immediate safety or in

accordance with the guidelines developed by SCE. Handling and relocation of rattlesnakes shall be documented, and the species of rattlesnake determined whenever possible. If a special-status rattlesnake is relocated, documentation shall be submitted to CPUC and CDFW.

Alternately, SCE may determine that project personnel shall not handle or approach rattlesnakes. If so, the guidelines shall specify an alternate course of action for rattlesnake encounters, such as avoiding work activity near the snake and monitoring its location and activity until it leaves the area.

Implementation locations: All work areas. All segments.

BIO-1g **Crotch Bumble Bee.** All on-site personnel shall be required to attend the Worker Environmental Awareness Program, as detailed in Mitigation Measure BIO-1a (Worker Environmental Awareness Program), that includes education program on identification and avoidance of Crotch bumble bee and nests.

If a live individual is detected during pre-construction surveys, or incidentally, the Applicant shall take adaptive management actions in coordination with CDFW, considering CDFW guidance and best management practices at the time of the occurrence.

Pre-construction surveys would include inspection for Crotch bumble bee nests. If any are located, CDFW would be notified and a no-disturbance buffer of at least 50 feet would be demarcated as determined by the Lead Biologist, in coordination with CDFW.

Implementation locations: Suitable Crotch bumble bee habitat in Segments 1, 2, and 3S. Other suitable habitat, as determined by pre-project surveys.

BIO-1h **Special-status reptiles.** This measure will not apply to desert tortoise; instead, surveys and avoidance for desert tortoise are addressed in Mitigation Measure BIO-1i (Desert tortoise). Biological monitors shall conduct clearance surveys in areas with suitable habitat for special-status reptiles, which may include the northern sagebrush lizard and the Mojave fringe-toed lizard, prior to construction each day, monitor construction activities for compliance, and submit monitoring reports to the CPUC for review on a weekly basis. Following the clearance surveys, either (1) exclusion fencing will be erected or (2) a biological monitor will be on the site during construction activities, to prevent take of special-status reptiles. If the installation of exclusion fencing is deemed necessary, the biological monitor shall direct the installation of the fence.

If any reptiles are found on the construction site, the animal will be allowed to move away from the construction site on its own, or a qualified biologist will relocate it nearby suitable habitat outside the construction area and place it in the shade of a shrub, as approved by resource agencies. If potentially suitable burrows or rock piles are found, they will be checked for occupancy. Occupied burrows will be flagged and avoided (employing a 50-foot buffer) during construction. If the burrow cannot be avoided, it will be excavated and the occupant relocated to an unoccupied burrow outside the construction area and of approximately the same size as the one from which it was removed. If an existing burrow is unavailable, the biologist will construct or direct the construction of a burrow of similar shape, size, depth, and orientation as the original.

Implementation locations: Suitable northern sagebrush lizard habitat in Segment 1. Suitable Mojave fringe-toed lizard habitat in Segments 3N and 3S. Other suitable habitat for special-status reptiles, as determined by pre-project surveys.

BIO-1i **Desert tortoise** (Supersedes APM BIO-HERP-1)**.** Methods for clearance surveys, fence specification and installation, tortoise handling, artificial burrow construction, egg handling, and other procedures shall be consistent with those described in the USFWS (2009) Desert Tortoise Field Manual or more current guidance provided by CDFW and USFWS.

Desert tortoise shall be handled only by a USFWS/CDFW permitted and authorized biologist (Authorized Biologist) following appropriate USFWS protocols and in compliance with appropriate regulatory permits. A biological monitor shall monitor construction activities in all areas with the potential to support desert tortoise. Observations of desert tortoise or sign shall be immediately communicated to the Authorized Biologist.

Within suitable habitat for desert tortoise, SCE shall survey the project area for desert tortoise burrows and pallets within fourteen (14) days preceding the initial start of construction. Follow-up surveys shall also be conducted within fourteen (14) days preceding additional construction after a gap in significant construction activities of 60 calendar days or more. Surveys shall include 100 percent of the area to be disturbed and a surrounding buffer of 300 feet.

Subject to authorization by CDFW and USFWS, tortoise burrows and pallets encountered within the disturbance area (if any) shall be conspicuously flagged by the surveying biologist(s) and avoided during construction activities. If a burrow suitable for desert tortoise cannot be avoided, it shall be excavated carefully using hand tools, by or under the supervision of an Authorized Biologist, and collapsed or blocked to prevent desert tortoise reentry. If the burrow is occupied, the Authorized Biologist may move the tortoise to another burrow.

Project personnel shall inspect for desert tortoises under parked vehicles or equipment prior to moving same. If a desert tortoise is found beneath a vehicle or equipment, the vehicle or equipment shall not be moved until the tortoise has voluntarily moved to a safe distance away. If the tortoise does not move on its own accord after 20 minutes, the tortoise may be moved by an Authorized Biologist, subject to authorization by CDFW and USFWS.

If a desert tortoise is found in a work area, the tortoise shall be allowed to passively traverse the site while construction in the immediate area is halted. If the tortoise does not move out of harm's way after 20 minutes, the tortoise may be moved by an Authorized Biologist, subject to conditions and authorization by CDFW and USFWS.

Subject to authorization by CDFW and USFWS, desert tortoises shall be moved the minimum distance possible within appropriate habitat. In general, desert tortoise will not be moved in excess of 1,000 feet for adults and 300 feet for hatchlings. Desert tortoises that are moved shall be placed in the shade of a shrub. After being moved, the desert tortoise shall be monitored to ensure its safety. Any time a tortoise is handled, the Authorized Biologist shall take photographs and record pertinent data in their daily monitoring report. This information shall be summarized and submitted to CPUC and BLM in annual environmental compliance reports.

Subject to authorization by CDFW and USFWS, a desert tortoise removed from its burrow shall be placed in an unoccupied burrow of approximately the same size and orientation. If an existing burrow is unavailable, the Authorized Biologist will construct or direct the construction of a burrow of similar shape, size, depth, and orientation as the original burrow. Desert tortoises moved during inactive periods will be monitored for at least two days after placement in the new burrow to ensure their safety.

Subject to authorization by CDFW and USFWS, if a desert tortoise is moved at a time of the day when ambient temperatures are unfavorable (less than 40 degrees F or greater than 90 degrees F), it shall be held overnight in a clean cardboard box. The desert tortoise shall be kept in the care of the Authorized Biologist under appropriate controlled temperatures and released the following day when temperatures are favorable. All cardboard boxes will be appropriately discarded after one use.

Implementation locations: Suitable desert tortoise habitat in Segments 1, 2 (critical habitat (CH)), 3N (CH), 3S (CH).

BIO-1j **Raven Monitoring, Management, and Control Plan.** Prior to the start of construction activities, SCE shall prepare and implement a Raven Monitoring, Management, and Control Plan (Raven Plan) consistent with USFWS raven management guidelines and that meets the approval of the CPUC and BLM in consultation with USFWS, and CDFW. The purpose of the Raven Plan shall be to minimize project-related predator subsidies and prevent any increases in raven numbers or activity within desert tortoise habitat during construction, restoration, and operations and maintenance phases. The Plan shall address all project components and their potential effects on raven numbers and activity. The threshold for implementation of raven control measures shall be any increases in raven numbers from baseline conditions, as detected by monitoring to be implemented pursuant to the Plan. Regardless of raven monitoring results, SCE shall be responsible for all other aspects of raven management described in the Raven Plan, such as avoidance and minimization of project-related trash, water sources, or perch/roost/nest sites that could contribute to increased raven numbers. In addition, to offset the cumulative contributions of the Project to desert tortoise impacts from increased raven numbers, SCE shall contribute to the USFWS Regional Raven Management Program. SCE shall:

(a) Prepare and Implement a Raven Management Plan that shall include, but shall not be limited to, the following components. The Plan shall be reviewed and approved by CPUC, USFWS, and CDFW prior to the start of construction activities.

  (i) Identify all potential project activities, structures, components, and other effects that could provide predator subsidies or attractants, including potential sources of food and water, and nesting materials, as well as nest or perch sites. These will include but will not be limited to: waste food material, road-killed animals, water storage, potential pooling from leaks, dust control, or wastewater, debris from brush clearing, and perch or roost sites on project facilities and infrastructure.

  (ii) Describe management practices to avoid or minimize conditions that might increase raven numbers and predatory activities.

  (iii) Appoint a qualified biologist who will implement a monitoring schedule and field methods for the purpose of locating any ravens present in the Project vicinity and detecting any increase in raven numbers or activity.

  (iv) Specify raven activity thresholds for implementation of control measures.

  (v) Describe control practices for ravens to be implemented as needed based on the monitoring results.

  (vi) Address monitoring and nest removal during construction and for the life of the Project.

  (vii) Describe reporting schedules and requirements.

(b) Contribute to the USFWS Regional Raven Management Program. No later than 30 days prior to the start of construction, SCE shall contribute to the USFWS Regional Raven Management Program by making a one-time payment of $105 per acre of long-term or permanent project disturbance within the geographic range of desert tortoise, or as specified by the USFWS, to the National Fish and Wildlife Federation Renewable Energy Action Team raven control account.

Implementation locations: Suitable desert tortoise habitat in Segments 1, 2 (critical habitat (CH)), 3N (CH), 3S (CH).

BIO-1k **Mohave Ground Squirrel Protection.** Within all areas identified as suitable Mohave ground squirrel (MGS) habitat, 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 APM BIO-RES-1, *Develop and Implement Habitat Restoration Plan (HRP)*. Restoration efforts shall comply with the restoration requirements, performance standards, and maintenance and monitoring protocols outlined in the Habitat Restoration Plan per APM BIO-RES-1.

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 BLM 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.

Implementation locations: Suitable Mohave ground squirrel habitat in Segments 1, 2, 3N, 3S.

BIO-1l **American badger and desert kit fox.** SCE shall conduct pre-construction surveys for desert kit fox and American badger no more than 30 days prior to initiation of construction activities. Surveys shall be conducted in areas that contain habitat for this these species and shall include project disturbance areas and access roads plus a 300-buffer surrounding these areas. SCE shall submit documentation providing pre-construction survey results to the CPUC for review and approval. If dens are detected, each den shall be classified as inactive, potentially active, active non-natal, or active natal.

Inactive dens located in project disturbance areas may be excavated by hand and backfilled to prevent reuse, only upon confirmation that they are inactive.

Active or potentially active dens shall be flagged and project activities, with exceptions as listed below, within 100 feet (non-natal dens) or 500 feet (natal dens, or any active den during the breeding season) shall be avoided. Ingress/egress of construction vehicles and equipment through buffers and low intensity activities such as inspections and BMP maintenance within buffers is allowed, provided a qualified biologist determines that these activities will not impact dens or denning animals. Buffers may be modified with concurrence of CPUC, in consultation with CDFW and USFWS. If active dens are found within project disturbance areas and avoidance is not possible, SCE shall take action as specified below, after notifying and obtaining concurrence from CPUC and CDFW.

Active and potentially active non-natal dens. Outside the breeding season, any potentially active dens that would be directly impacted by construction activities shall be monitored by a qualified mammologist or biologist for three consecutive nights using a tracking medium (such as diatomaceous earth or fire clay) or infrared camera stations at the entrance. If no tracks are observed in the tracking medium or no photos of the target species are captured after three nights, the den may be excavated and backfilled by hand. If tracks are observed, the den may be progressively blocked with natural materials (rocks, dirt, sticks, and vegetation piled in front of the entrance) for the next three to five nights to discourage continued use. After verification that the den is no longer active, the den may be excavated and backfilled by hand.

Active natal dens. Active natal dens (any den with cubs or pups) or any den active during the breeding season will not be excavated or passively relocated. The cub or pup-rearing season is generally from January 15 through mid-September. A 500-foot no-disturbance buffer shall be maintained around all active natal dens. Discovery of an active natal den that could be impacted by the Project shall be reported to the CPUC, BLM, and CDFW within 24 hours of the discovery along with a map of the den location and a copy of the survey results. A qualified biologist shall monitor the natal den until he or she determines that the pups have dispersed. Any disturbance to denning animals or activities that might disturb denning activities shall be prohibited within the buffer zone. Once the pups have dispersed, methods listed above for non-natal dens may be used to discourage den reuse. After verification that the den is unoccupied, it shall then be excavated by hand and backfilled to ensure that no animals are trapped in the den.

If canine distemper is reported in desert kit fox on the site or surrounding areas, then SCE shall coordinate with CPUC and CDFW to identify appropriate actions prior to continuing implementation of this mitigation measure in respect to desert kit fox. Any observations of a kit fox that appears sick or any kit fox mortality shall be reported to CPUC and CDFW within one workday.

In the event that passive relocation techniques fail, SCE shall contact the CPUC, BLM, and CDFW to explore other relocation options.

All den monitoring and excavation activities and passive relocations shall be documented and reported to the CDFW and CPUC in weekly monitoring reports, and a written summary will be included in each annual monitoring report.

Implementation locations: Suitable habitat for desert kit fox in Segments 3N and 3S. Suitable habitat for American badger in all segments.

BIO-1m **Special-status Bats** (Supersedes APM BIO-MAM-6). SCE shall conduct surveys for roosting bats within 300 feet of project activities, within 14 days prior to any work near suitable habitat or removal of towers or trees (particularly palm trees and large trees (12 inches in diameter or greater at 4.5 feet above grade) with loose bark or other cavities). Surveys shall be conducted during the breeding season (1 March to 31 July) and the non-breeding season. Surveys shall be performed by a qualified bat biologist (i.e., a biologist holding a CDFW collection permit and a Memorandum of Understanding with CDFW allowing the biologist to handle bats). The resume of the biologist shall be provided to the CPUC for concurrence in consultation with CDFW and USFWS prior to the biologist beginning field duties on the Project. Surveys shall include a minimum of one day and one evening.

Any active bat roosts, including occupied day roosts, maternity roosts, and hibernacula, will be identified and clearly marked. An exclusion area will be established 165 feet from any active roost, and these areas will be avoided during construction activities. If active roosts are found, then focused surveys shall be conducted to determine if the sites support special-status bat species.

Prior to the initiation of construction, SCE shall submit documentation providing pre-construction survey results and any avoidance of roosting and nursery sites to the CPUC for review and approval.

Non-special-status bats. If non-breeding bat hibernacula are found in work areas, the bats shall be safely evicted, under the direction of a qualified bat biologist, by opening the roosting area to allow airflow through the cavity or other means determined appropriate by the bat biologist (e.g., installation of one-way doors). In situations requiring one-way doors, a minimum of one week shall pass after doors are installed and temperatures must be sufficiently warm for bats to exit the roost because bats do not typically leave their roost daily during winter months in southern coastal California. This action will allow all bats to leave during the course of one week. Roosts that need to be removed, in situations where the use of one-way doors is not necessary in the judgment of the qualified bat biologist, shall first be disturbed by various means at the direction of the bat biologist at dusk to allow bats to escape during the darker hours, and the roost tree shall be removed or the grading shall occur the next day (i.e., there shall be no less or more than one night between initial disturbance and the grading or tree removal).

If active maternity roosts or hibernacula are found, the areas shall be avoided (i.e., not removed) by the Project. If avoidance of the maternity roost is not feasible, the bat biologist shall survey (through the use of radio telemetry or other CDFW approved methods) for nearby alternative maternity colony sites. If the bat biologist determines in consultation with and with the approval of the CDFW and CPUC that there are alternative roost sites used by the maternity colony and young are not present, then no further action is required, and it will not be necessary to provide alternate roosting habitat. However, if there are no alternative roosts sites used by the maternity colony, substitute bat roosting habitat shall be provided, as detailed below. If an active maternity roost is located in an area to be impacted by the Project, and alternative roosting habitat is available, the demolition of the roost site must commence before maternity colonies form (i.e., prior to 1 March) or after young are flying (i.e., after 31 July) using the exclusion techniques described above.

If a maternity roost will be impacted by the Project, and no alternative maternity roosts are in use near the site, substitute roosting habitat for the maternity colony shall be provided on, or in close proximity to, the project site no less than three months prior to

the eviction of the colony. Alternative roost sites will be constructed in accordance with the specific bat's requirements in coordination with CDFW. By making the roosting habitat available prior to eviction, the colony will have a better chance of finding and using the roost. Large concrete walls (e.g., on bridges) on south or southwestern slopes that are retrofitted with slots and cavities are an example of structures that may provide alternative roosting habitat appropriate for maternity colonies. Alternative roost sites must be of comparable size and near to the impacted colony. The CDFW shall also be notified of any hibernacula or active nurseries within the construction zone.

Special-status bats. If special-status bat species occur at these day roosts, maternity roosts, or hibernacula, then construction activities shall avoid these sites and a surrounding buffer distance of 300 feet. If construction activities cannot avoid these sites, construction at these sites shall be delayed until the breeding cycles for the special-status bats are completed. SCE shall consult with a bat specialist in order to determine when the breeding cycle for the special-status bats is completed. SCE shall consult with CDFW regarding eviction of non-breeding special-status bats.

Implementation locations: All segments in the vicinity suitable bat habitat.

BIO-1n **Golden eagle** (Supersedes APM BIO-AVI-4). SCE shall implement the following measures to document golden eagle occurrence in the project area and surrounding mountains. Survey schedule and requirements will be as identified below unless otherwise authorized by the CPUC in consultation with the USFWS and CDFW.

Annual Nesting Season Surveys. Beginning at least one year prior to the start of construction, and continuing throughout the construction phase of the Project, SCE shall contract with a qualified biologist to conduct nesting season surveys of golden eagle habitat use within a 2-mile radius of the portions of the project area where work will occur during the breeding season (December 1 through July 31). Nesting season surveys will determine occupancy, productivity, and chronology of known or newly discovered nesting territories within the 2-mile radius. Survey methods for the inventory shall be either ground-based or helicopter-based, as described in the Golden Eagle Technical Guidance (Pagel et al., 2010) or more current guidance from the USFWS.

Nesting Season Inventory Data. At a minimum, data collected during the nesting season surveys shall include the following: territory status (unknown, vacant, occupied, breeding successful, breeding unsuccessful); nest location, nest elevation; age class of golden eagles observed; nesting chronology; number of young at each visit; photographs; and substrate upon which nest is placed.

Determination of Unoccupied Territory Status. A nesting territory or inventoried habitat shall be considered unoccupied by golden eagles only after completing at least two full surveys in a single breeding season.

Nest Buffer. If an occupied nest (as defined by Pagel et al., 2010) is detected within 2 miles of the Project, SCE shall implement a one-mile line-of-sight and one-half mile no line-of-sight buffer to ensure that project construction activities do not result in injury or disturbance to golden eagles. Triggers for adaptive management shall include any evidence of project-related disturbance to nesting golden eagles, including but not limited to: agitation behavior (displacement, avoidance, and defense); increased vigilance behavior at nest sites; changes in foraging and feeding behavior, or nest site abandonment. Adaptive management actions, include, but are not limited to, cessation of construction activities that are deemed by a qualified biologist to be the source of golden eagle disturbance.

Reporting. Golden eagle survey data and, if applicable, nest activity monitoring results and any adaptive management actions taken, will be provided to CPUC, CDFW, and USFWS in monthly monitoring reports, as seasonal data becomes available and if specific nest monitoring or any adaptive management actions are taken, and summarized in annual project monitoring reports.

Implementation locations: Suitable golden eagle habitat in Segments 1 and 2.

BIO-6a **Bird and Bat Collision.** Transmission line support structures and other facility structures shall be designed in compliance with current standards and practices to discourage their use by raptors for perching or nesting (e.g., by use of anti-perching devices). This design also reduces the potential for increased predation of special-status species, such as the desert tortoise. Mechanisms to visually warn birds (permanent markers or bird flight diverters) shall be placed on transmission lines at regular intervals to prevent birds from colliding with the lines (APLIC, 2006, 2012). To the extent practicable, the use of guy wires shall be avoided because they pose a collision hazard for birds and bats. Necessary guy wires shall be clearly marked with bird flight diverters to reduce the probability of collision. Shield wires shall be marked with devices that have been scientifically tested and found to significantly reduce the potential for bird collisions. Transmission lines shall maintain sufficient distance between all conductors and grounded components to prevent potential for electrocution of the largest birds that may occur in the area (e.g., golden eagle and turkey vulture). They shall utilize non-specular conductors and non-reflective coatings on insulators.

3.5.5. Mitigation Monitoring, Compliance, and Reporting

Table 3.5-3 presents the mitigation monitoring, compliance, and reporting information for biological resources.

Table 3.5-3. Mitigation Monitoring Program - Biological Resources

Mitigation Component	Text or Description
Mitigation Measure BIO-1a	**Worker Environmental Awareness Program (WEAP)**
Location	All work areas. All segments
Monitoring/Reporting Action	WEAP presentation, associated materials, and list of all personnel who have completed WEAP training to be submitted to the CPUC and BLM
Effectiveness Criteria	WEAP is implemented as approved
Responsible Agency	CPUC and BLM
Timing	WEAP presentation associated materials to be submitted 60 days prior to ground-disturbing activities
Mitigation Measure BIO-1b	**Biological Monitoring**
Location	All work areas. All segments
Monitoring/Reporting Action	Daily, weekly, annual, and final reports
Effectiveness Criteria	All monitoring activities are documented and reported
Responsible Agency	CPUC and BLM
Timing	Lead biologists to be nominated at least 60 days prior to the start of any ground-disturbing activities. Pre-construction surveys are to be completed 10 days prior to beginning work in any given area. Final report to be submitted within 12 months of the completion of construction.

Mitigation Component	Text or Description
Mitigation Measure BIO-1c	**Minimization of Vegetation and Habitat Impacts**
Location	All work areas. All segments
Monitoring/Reporting Action	GIS shapefiles of all actual temporary and permanent disturbance areas, accurate aerial imagery of the project area, and summary data of all discrepancies between final engineering and "as-built" conditions for each vegetation or habitat type, within each segment to be submitted to the CPUC.
Effectiveness Criteria	Work activities and roadways avoid or minimize direct or indirect effects to sensitive habitat types or jurisdictional waters and provide buffer areas to minimize disturbance
Responsible Agency	CPUC
Timing	Prior to beginning of any ground disturbing activities. As phases of disturbance and/or construction of segments are completed, as requested by CPUC. Final project data to be provided upon completion of construction.
Mitigation Measure BIO-1d	**Compensation for habitat loss**
Location	All segments in permanent and long-term impact areas
Monitoring/Reporting Action	Habitat Compensation Plan to be submitted to the CPUC
Effectiveness Criteria	Habitat Compensation Plan is implemented as approved
Responsible Agency	CPUC
Timing	Prior to beginning of any ground disturbing activities
Mitigation Measure BIO-1e	**Pre-construction biological resources surveys**
Location	All work areas. All segments
Monitoring/Reporting Action	Pre-construction survey reports to be submitted to the CPUC
Effectiveness Criteria	Pre-construction surveys conducted as approved
Responsible Agency	CPUC and BLM
Timing	10 days prior to beginning work
Mitigation Measure BIO-1f	**Wildlife impact avoidance and minimization**
Location	All work areas. All segments
Monitoring/Reporting Action	Specific measures related at traffic, lighting, toxic substances, noise and vibration, water, worker guidelines, wildlife netting, wildlife entrapment, dead animals, injured wildlife, and rattlesnakes (see full text in EIR Section 3.5.5, Mitigation Measure BIO-1f) to be submitted to the CPUC
Effectiveness Criteria	Specific measures are implemented as approved
Responsible Agency	CPUC
Timing	Construction, restoration, and operations and maintenance phases
Mitigation Measure BIO-1g	**Crotch Bumble Bee**
Location	Suitable Crotch bumble bee habitat in Segments 1, 2, and 3S. Other suitable habitat, as determined by pre-project surveys
Monitoring/Reporting Action	WEAP and Pre-construction surveys
Effectiveness Criteria	WEAP is implemented as approved, adaptive management best practices are implemented in coordination with CDFW if live individuals are detected
Responsible Agency	CDFW
Timing	Pre-construction surveys would occur 10 days prior to beginning work

Mitigation Component	Text or Description
Mitigation Measure BIO-1h	**Special-status reptiles**
Location	Suitable northern sagebrush lizard habitat in Segment 1. Suitable Mojave fringe-toed lizard habitat in Segments 3N and 3S. Other suitable habitat for special-status reptiles, as determined by pre-project surveys.
Monitoring/Reporting Action	Monitoring reports to be submitted to the CPUC
Effectiveness Criteria	Special-status reptiles are avoided or relocated
Responsible Agency	CPUC
Timing	Clearance surveys to be conducted prior to construction each day, Weekly monitoring reports to be submitted to the CPUC
Mitigation Measure BIO-1i	**Desert tortoise**
Location	Suitable desert tortoise habitat in Segments 1, 2 (critical habitat (CH)), 3N (CH), 3S (CH)
Monitoring/Reporting Action	Pre-construction surveys and compliance reports
Effectiveness Criteria	Procedures consistent with guidance provided by CDFW and USFWS
Responsible Agency	CDFW, USFS, CPUC, and BLM
Timing	Surveys to be conducted within fourteen (14) days preceding the start of construction
Mitigation Measure BIO-1j	**Raven Monitoring, Management, and Control Plan**
Location	Suitable desert tortoise habitat in Segments 1, 2 (critical habitat (CH)), 3N (CH), 3S (CH)
Monitoring/Reporting Action	Raven Monitoring, Management, and Control Plan to be submitted to the CPUC, BLM, USFWS, CDWF
Effectiveness Criteria	Raven Monitoring, Management, and Control Plan is implemented as approved
Responsible Agency	CPUC, BLM, USFWS, and CDFW
Timing	Prior to the start of construction. 30 days prior to the start of construction SCE would contribute to the USFWS Regional Raven Management Program
Mitigation Measure BIO-1k	**Mohave ground squirrel avoidance and minimization**
Location	Suitable habitat for Mohave ground squirrel in Segments 1, 2, 3N, 3S.
Monitoring/Reporting Action	Presume presence and obtain CDFW ITP; avoid high quality habitat, revegetate temporarily disturbed habitat, compensate for permanent habitat loss
Effectiveness Criteria	Avoidance, restoration, and compensation measures are implemented as approved
Responsible Agency	CDFW, CPUC
Timing	Prior to beginning of any ground disturbing activities
Mitigation Measure BIO-1l	**American badger and desert kit fox**
Location	Suitable habitat for desert kit fox in Segments 3N and 3S. Suitable habitat for American badger in all segments.
Monitoring/Reporting Action	Pre-construction survey results to be submitted to the CPUC
Effectiveness Criteria	Avoidance or relocation measures are implemented as approved
Responsible Agency	CPUC, BLM, USFWS, and CDFW
Timing	30 days prior to initiation of construction activities
Mitigation Measure BIO-1m	**Special-status bats**
Location	All segments in the vicinity of suitable bat habitat
Monitoring/Reporting Action	Pre-construction survey results and avoidance to be submitted to the CPUC
Effectiveness Criteria	Avoidance measures are implemented as approved

Mitigation Component	Text or Description
Responsible Agency	CPUC and CDFW
Timing	14 days prior to any construction activities
Mitigation Measure BIO-1n	**Golden eagle**
Location	Suitable golden eagle habitat in Segments 1 and 2
Monitoring/Reporting Action	Survey data, nest activity, monitoring results, and adaptive management actions to be submitted to CPUC, CDFW, and USFWS
Effectiveness Criteria	Surveys and adaptive management actions are implemented as approved
Responsible Agency	CPUC, USFWS, CDFW
Timing	One year prior to start of construction
Mitigation Measure BIO-6a	**Bird and Bat Collison**
Location	All segments
Monitoring/Reporting Action	Engineering plans to be submitted to CPUC
Effectiveness Criteria	Transmission line support structures and other facility structures are designed in compliance with current standards and practices to discourage their use by raptors for perching or nesting
Responsible Agency	CPUC
Timing	Prior to beginning of any ground disturbing activities

3.5.6. References

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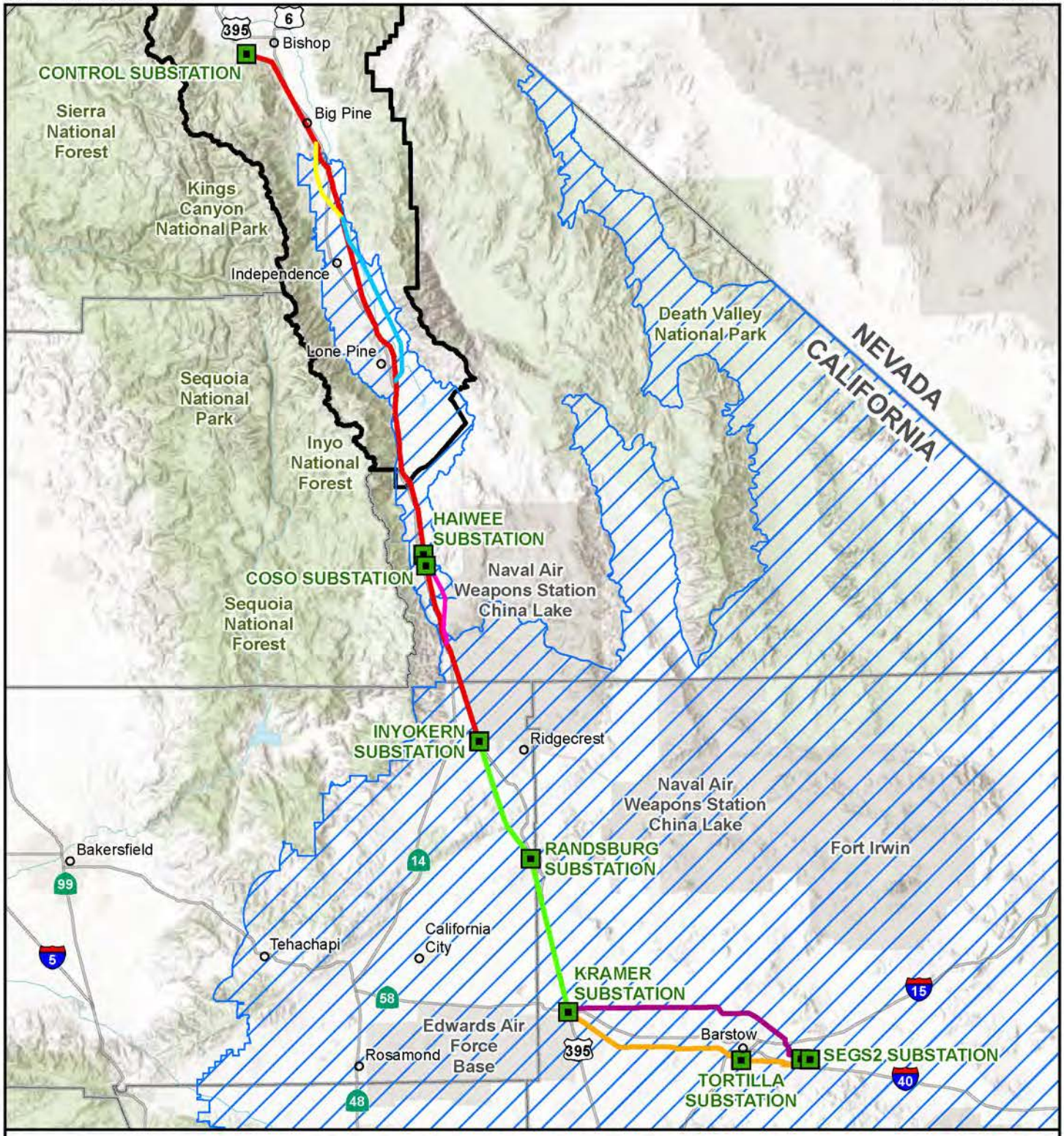


Source: Aspen, 2024; BLM, 2024; CDFW, 2024; NPS, 2024; Esri, 2024; SCE, 2024.

Substation

County Boundary

Applicable on BLM Lands

Desert Renewable Energy Conservation Planning Boundary (DRECP)

Bishop Resource Management Plan (RMP)

Ivanpah-Control Proposed Project Segments

Segment 1: Control-Haiwee-Inyokern

Segment 2: Inyokern-Kramer

Segment 3N: Kramer-Coolwater

Segment 3S: Kramer-Tortilla-Coolwater

Ivanpah-Control Project Alternatives

Crater Mountain Realignment Alternative

Fossil Falls Realignment Alternative

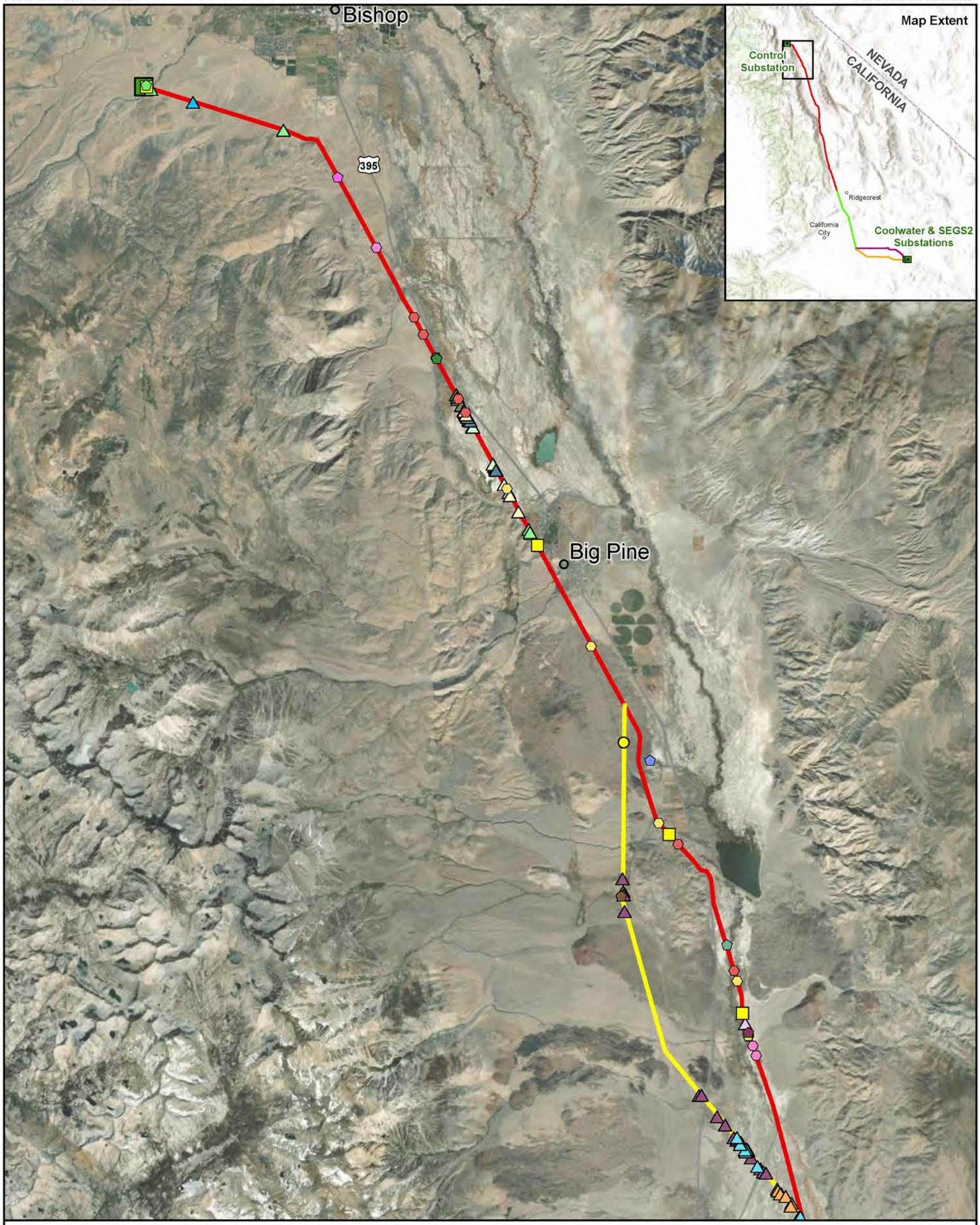
Manzanar Realignment Alternative

Figure 3.5-1

Policy Boundaries

1:1,500,000

N 0 10 miles



Source: Aspen, 2024; Esri, 2024; SCE, 2024.

Figure 3.5-2a

Special-Status Species, Observed Segment 1 North

Bird Occurrences
- *Aquila chrysaetos*
- *Ardea alba*
- *Buteo swainsoni*
- *Contopus cooperi*
- *Haliaeetus leucocephalus*
- *Lanius ludovicianus*
- *Piranga rubra*
- *Riparia riparia*

Bird Nest Occurrences
- *Buteo jamaicensis* nest
- *Corvus corax* nest
- *Petrochelidon pyrrhonota* nest
- Unknown nest

Reptile Occurrences
- *Sceloporus graciosus*

Mammal Occurrences
- *Cervus canadensis nannodes*

Plant Occurrences
- *Aliciella triodon*
- *Allium atrorubens* var. *cristatum*
- *Astragalus geyeri* var. *geyeri*
- *Calochortus excavatus*
- *Eriastrum sparsiflorum*
- *Goodmania luteola*
- *Loeflingia squarrosa* var. *artemisiarum*
- *Mentzelia torreyi*
- *Muilla coronata*
- *Phacelia inyoensis*
- *Plagiobothrys parishii*

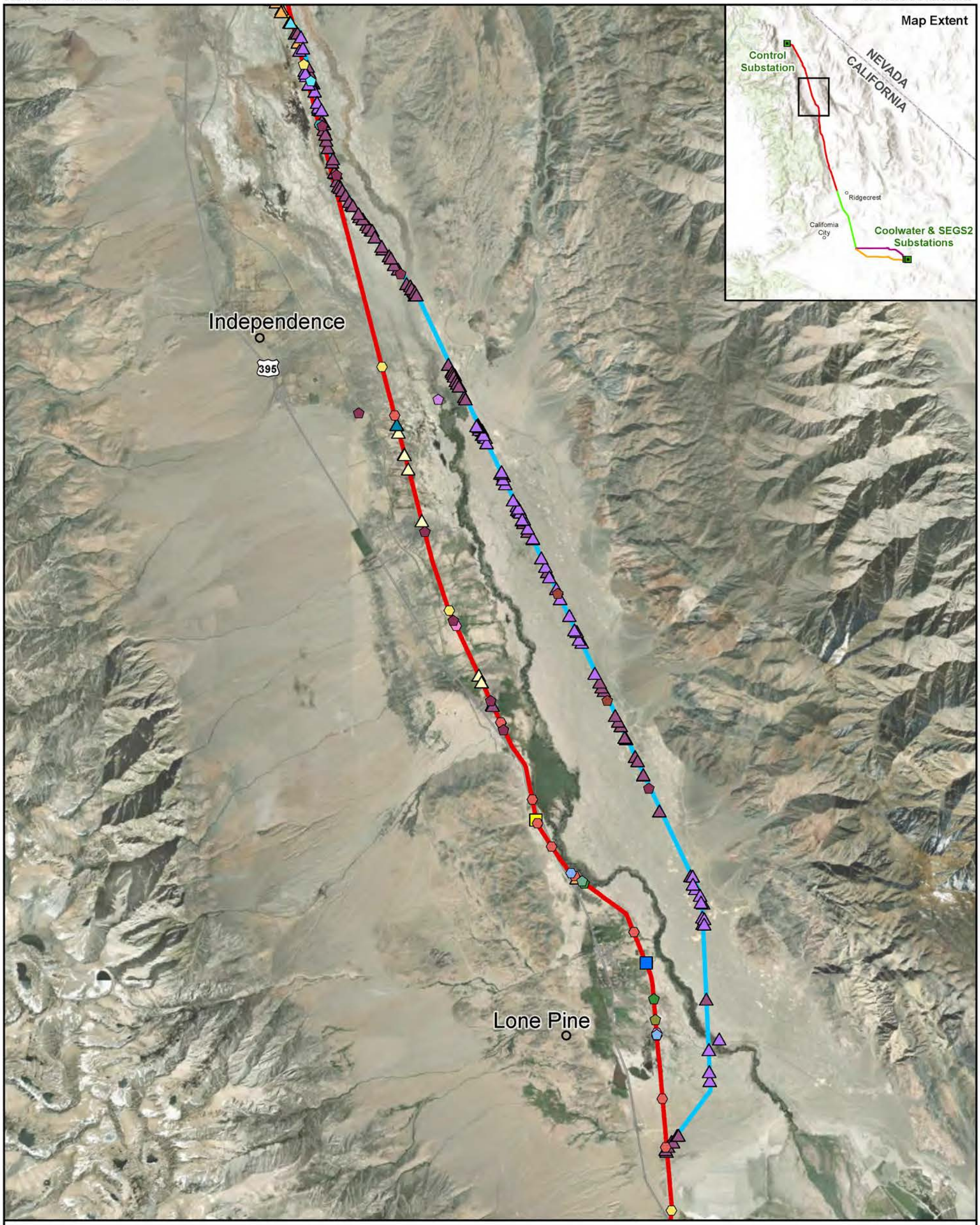
Substation

Ivanpah-Control Proposed Project Segments
- Segment 1: Control-Haiwee-Inyokern

Ivanpah-Control Project Alternatives
- Crater Mountain Realignment Alternative

1:150,000

N 0 2 miles



Source: Aspen, 2024; Esri, 2024; SCE, 2024.

Figure 3.5-2b

Special-Status Species, Observed
Segment 1 North Central

Bird Occurrences
- *Buteo swainsoni*
- *Lanius ludovicianus*
- *Pandion haliaetus*
- *Pelecanus erythrorhynchos*
- *Plegadis chihi*
- *Polioptila melanura*
- *Riparia riparia*
- *Setophaga petechia*
- *Toxostoma lecontei*

Bird Nest Occurrences
- *Buteo jamaicensis* nest
- *Charadrius vociferus* nest
- *Corvus corax* nest
- *Tyrannus verticalis* nest
- Unknown nest

Reptile Occurrences
- *Batrachoseps campi*
- *Sceloporus graciosus*

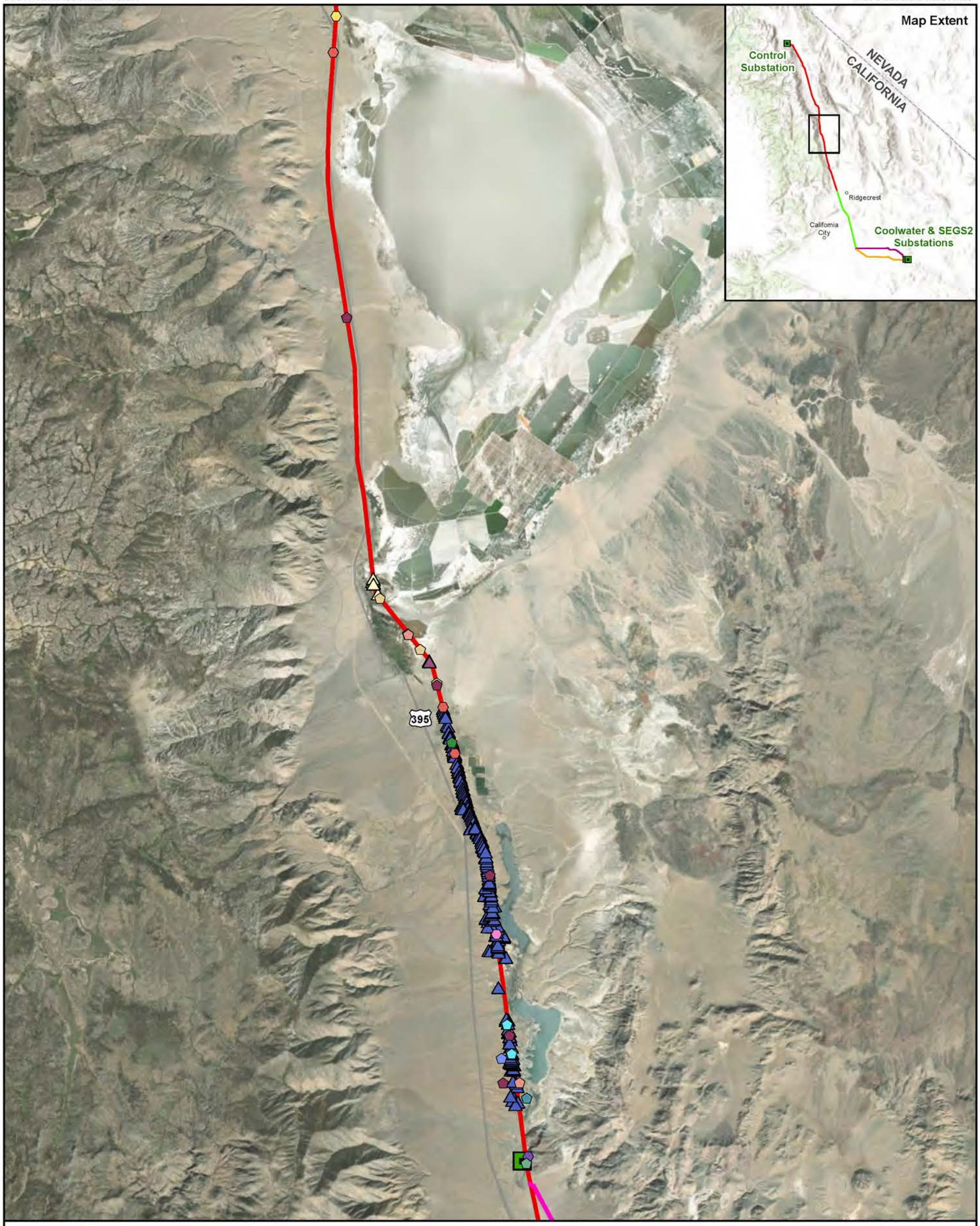
Plant Occurrences
- *Aliciella triodon*
- *Astragalus geyeri* var. *geyeri*
- *Calochortus excavatus*
- *Mentzelia torreyi*
- *Oryctes nevadensis*
- *Plagiobothrys parishii*
- *Sidalcea covillei*

Ivanpah-Control Proposed Project Segments
- Segment 1: Control-Haiwee-Inyokern

Ivanpah-Control Project Alternatives
- Crater Mountain Realignment Alternative
- Manzanar Realignment Alternative

1:150,000

N 0 2 miles



Source: Aspen, 2024; Esri, 2024; SCE, 2024.

Figure 3.5-2c

Special-Status Species, Observed
Segment 1 South Central

Bird Occurrences
- *Accipiter cooperii*
- *Buteo swainsoni*
- *Circus cyaneus*
- *Haliaeetus leucocephalus*
- *Lanius ludovicianus*
- *Pandion haliaetus*
- *Plegadis chihi*
- *Riparia riparia*
- *Xanthocephalus xanthocephalus*

Bird Nest Occurrences
- *Bubo virginianus* nest
- *Buteo jamaicensis* nest
- *Corvus corax* nest
- Unknown nest

Plant Occurrences
- *Aliciella triodon*
- *Cymopterus ripleyi* var. *saniculoides*
- *Plagiobothrys parishii*
- *Yucca brevifolia*

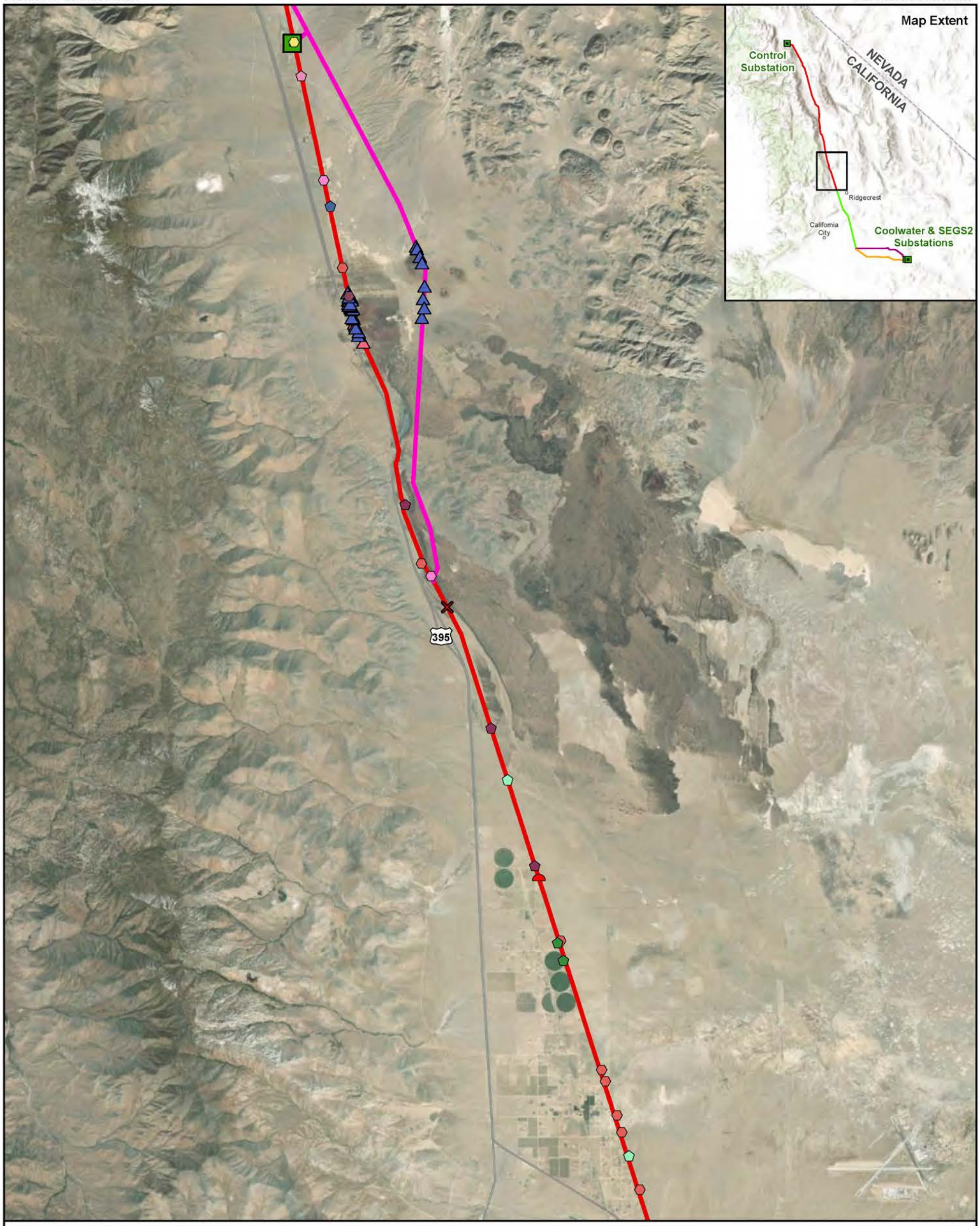
Substation

Ivanpah-Control Proposed Project Segments
- Segment 1: Control-Haiwee-Inyokern

Ivanpah-Control Project Alternatives
- Fossil Falls Realignment Alternative

1:150,000

N 0 2 miles



Source: Aspen, 2024; Esri, 2024; SCE, 2024.

Figure 3.5-2d

Special-Status Species, Observed Segment 1 South

Bird Occurrences
- *Buteo swainsoni*
- *Calypte costae*
- *Falco mexicanus*
- *Lanius ludovicianus*
- *Spizella breweri*

Bird Nest Occurrences
- *Buteo jamaicensis* nest
- *Corvus corax* nest
- *Tyrannus vociferans* nest
- Unknown nest

Desert Tortoise Occurrences
- Desert tortoise carcass

Desert Tortoise Burrows
- Class 4 desert tortoise burrow

Plant Occurrences
- *Eremothera boothii* ssp. *intermedia*
- *Yucca brevifolia*

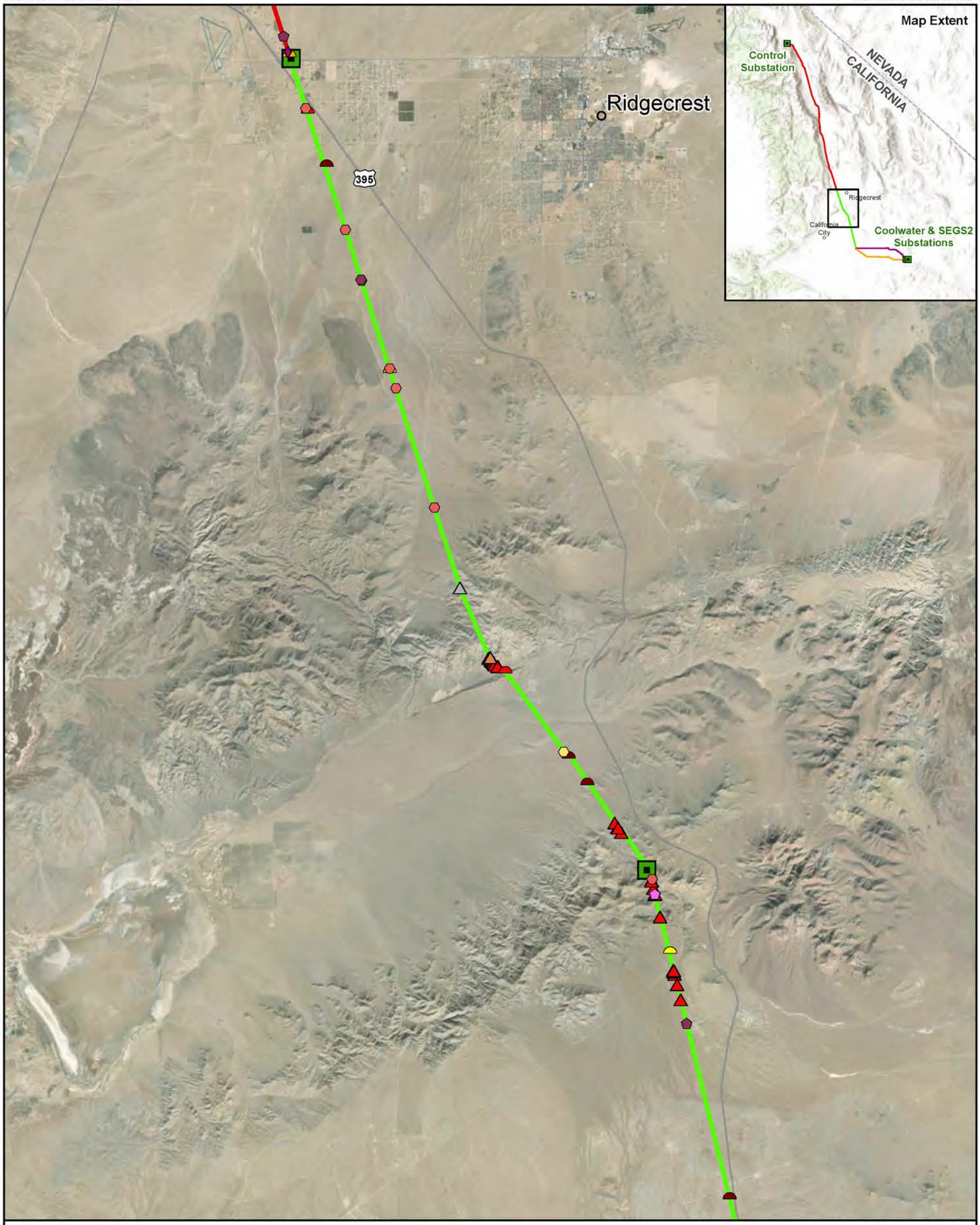
Substation

Ivanpah-Control Proposed Project Segments
- Segment 1: Control-Haiwee-Inyokern

Ivanpah-Control Project Alternatives
- Fossil Falls Realignment Alternative

1:150,000

N 0 2 miles



Source: Aspen, 2024; Esri, 2024; SCE, 2024.

Figure 3.5-2e

Special-Status Species, Observed Segment 2 North

Bird Occurrences
- *Aquila chrysaetos*
- *Falco mexicanus*
- *Lanius ludovicianus*

Bird Nest Occurrences
- *Buteo jamaicensis* nest
- *Corvus corax* nest
- *Lanius ludovicianus* nest

Desert Tortoise Occurrences
- Desert tortoise scat

Desert Tortoise Burrows
- Class 2 desert tortoise burrow
- Class 3 desert tortoise burrow
- Class 4 desert tortoise burrow
- Class 5 desert tortoise burrow

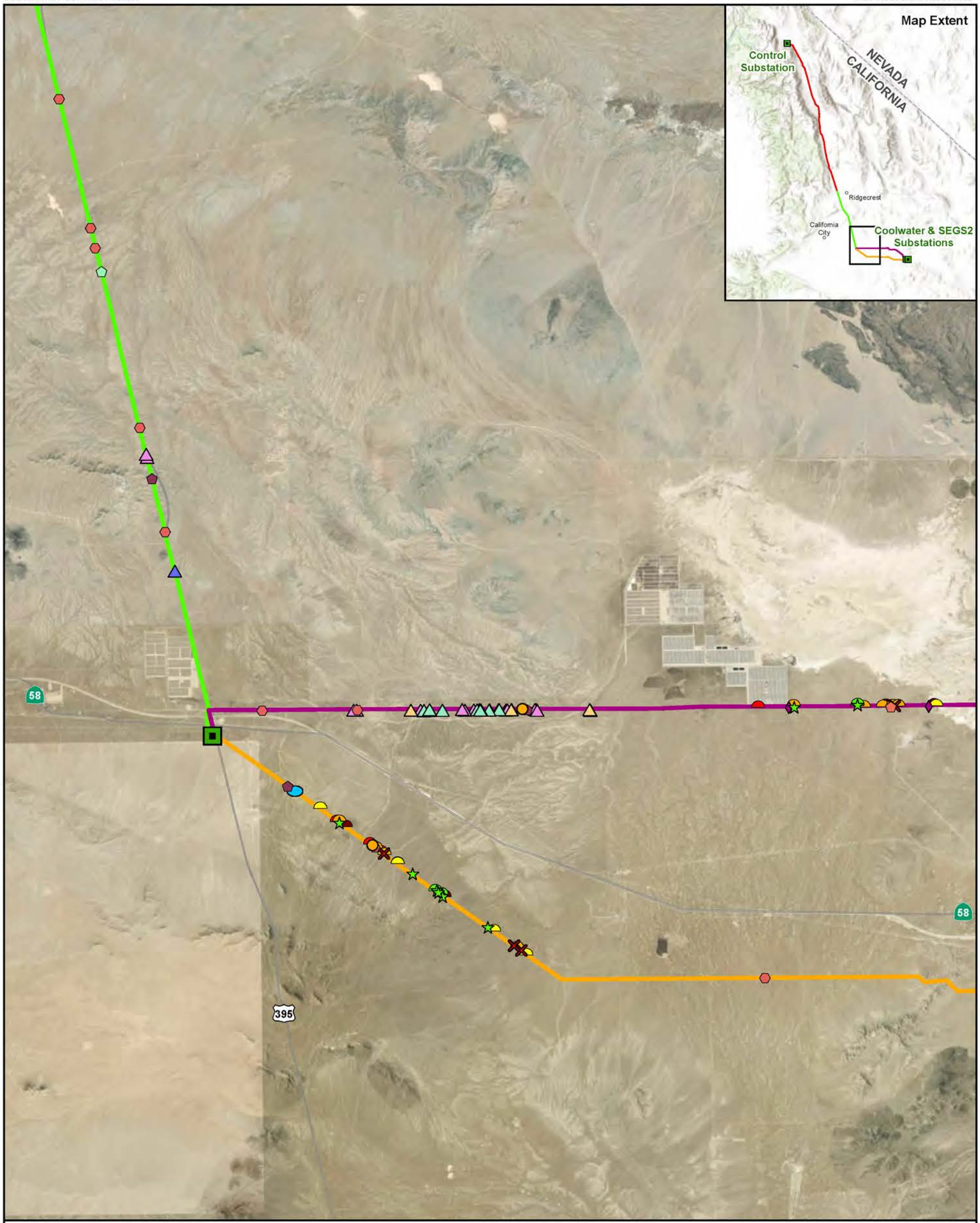
Plant Occurrences
- *Eschscholzia minutiflora* ssp. *twisselmannii*
- *Mentzelia tridentata*
- *Sclerocactus polyancistrus*

Substation

Ivanpah-Control Proposed Project Segments
- Segment 1: Control-Haiwee-Inyokern
- Segment 2: Inyokern-Kramer

1:150,000

N 0 2 miles



Source: Aspen, 2024; Esri, 2024; SCE, 2024.

Figure 3.5-2f

Special-Status Species, Observed Segment 2 South and Segments 3N and 3S West

Bird Occurrences
- *Athene cunicularia*
- *Falco mexicanus*
- *Lanius ludovicianus*

Bird Nest Occurrences
- *Corvus corax* nest

Desert Tortoise Occurrences
- Desert tortoise carcass
- Live desert tortoise
- Desert tortoise pallet
- Desert tortoise scat

Desert Tortoise Burrows
- Class 1 desert tortoise burrow
- Class 2 desert tortoise burrow
- Class 3 desert tortoise burrow
- Class 4 desert tortoise burrow
- Class 5 desert tortoise burrow

Mammal Occurrences
- *Vulpes macrotis*

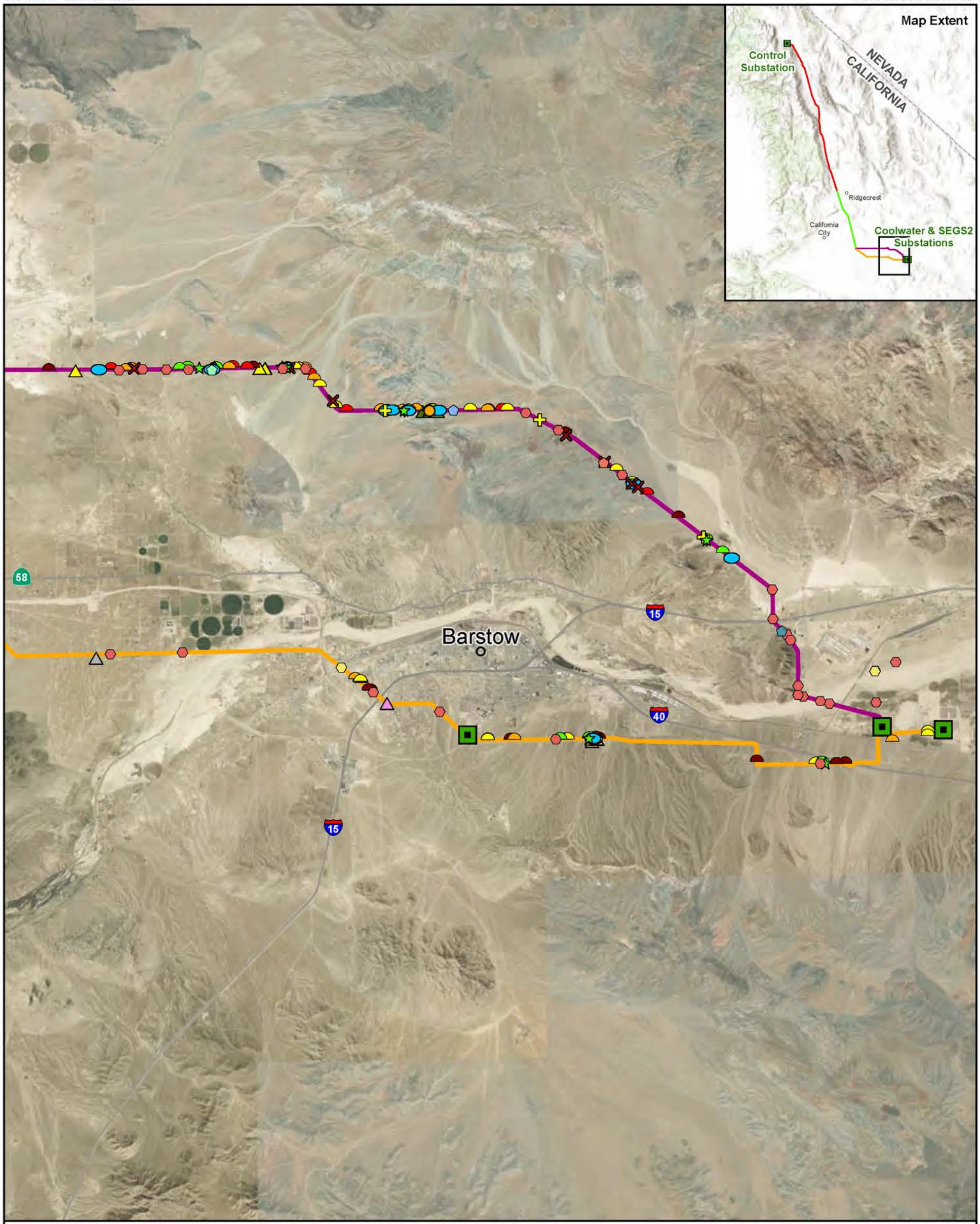
Plant Occurrences
- *Androstephium breviflorum*
- *Chorizanthe spinosa*
- *Cymopterus deserticola*
- *Eriophyllum mohavense*

- Substation

Ivanpah-Control Proposed Project Segments
- Segment 2: Inyokern-Kramer
- Segment 3N: Kramer-Coolwater
- Segment 3S: Kramer-Tortilla-Coolwater

1:150,000

N 0 2 miles



Source: Aspen, 2024; Esri, 2024; SCE, 2024.

Figure 3.5-2g

Special-Status Species, Observed Segments 3N and 3S East

Bird Occurrences
- *Accipiter cooperii*
- *Athene cunicularia*
- *Falco mexicanus*
- *Polioptila melanura*

Bird Nest Occurrences
- *Buteo jamaicensis* nest
- *Corvus corax* nest

Desert Tortoise Occurrences
- Desert tortoise carcass
- Live desert tortoise
- Desert tortoise pallet
- Desert tortoise scat
- Desert tortoise tracks

Desert Tortoise Burrows
- Class 1 desert tortoise burrow
- Class 2 desert tortoise burrow
- Class 3 desert tortoise burrow
- Class 4 desert tortoise burrow
- Class 5 desert tortoise burrow

Mammal Occurrences
- *Vulpes macrotis*

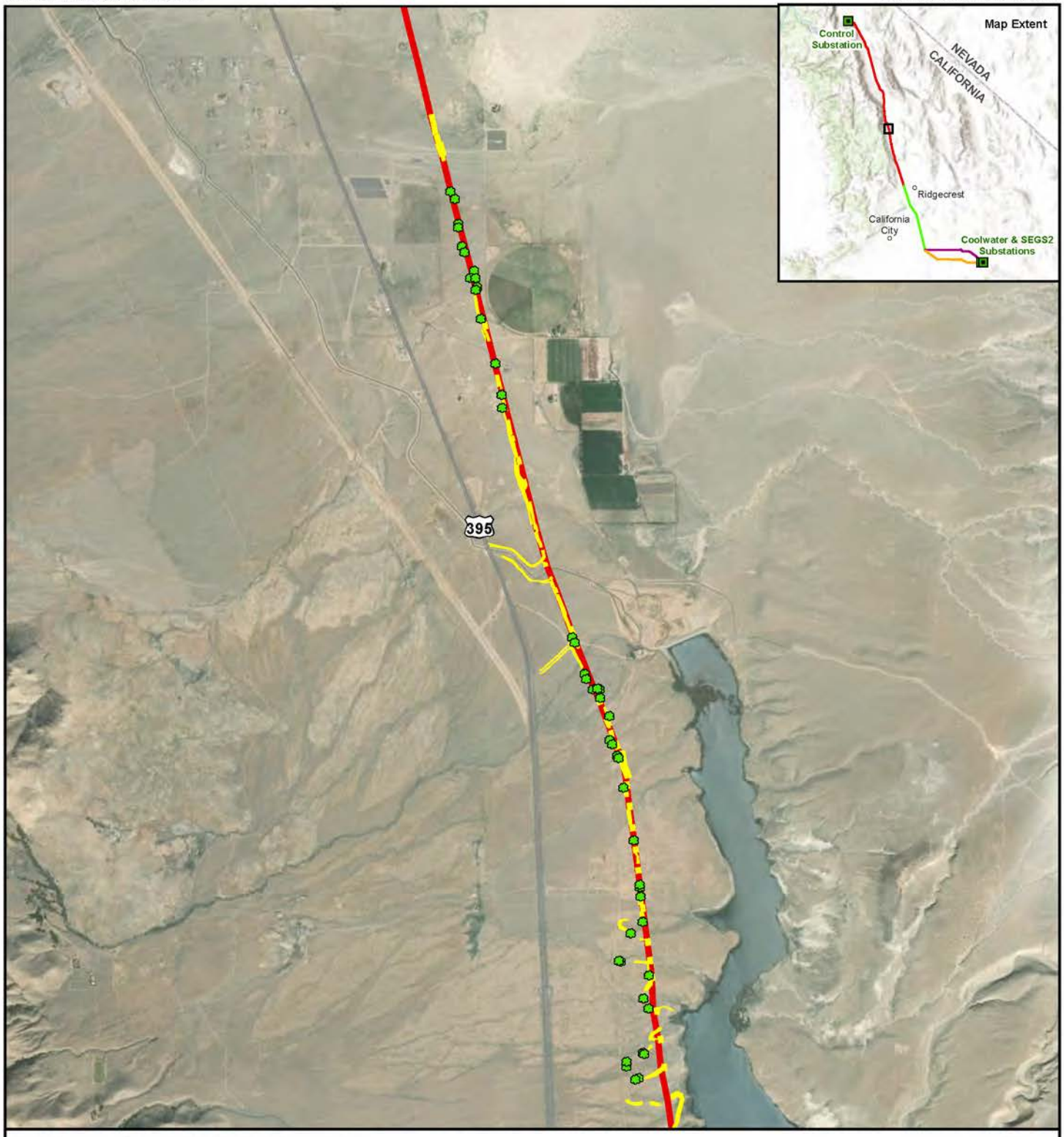
Plant Occurrences
- *Chorizanthe spinosa*
- *Menodora spinescens* var. *mohavensis*
- *Mentzelia tridentata*
- *Mimulus mohavensis*
- *Pediomelum castoreum*
- *Sclerocactus polyancistrus*

Substation

Ivanpah-Control Proposed Project Segments
- Segment 3N: Kramer-Coolwater
- Segment 3S: Kramer-Tortilla-Coolwater

1:150,000

N 0 2 miles



Source: Aspen, 2024; Esri, 2024; SCE, 2024.

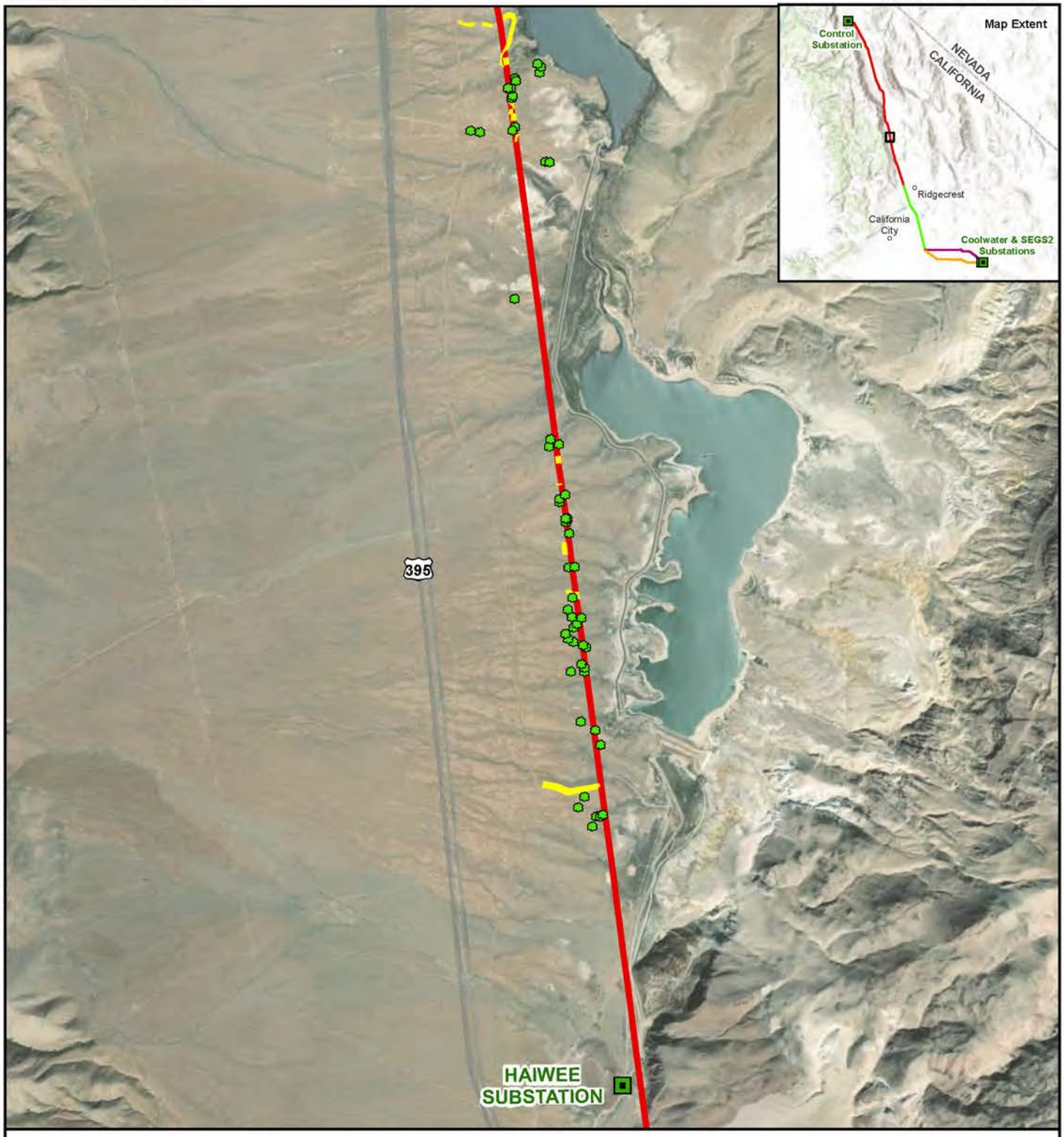
Figure 3.5-3a

Western Joshua Tree
Segment 1 Central North

Ivanpah-Control Proposed Project Segments
Segment 1: Control-Haiwee-Inyokern
Western Joshua Tree
Group of Western Joshua Trees

1:48,000

N 0 1 miles



Source: Aspen, 2024; Esri, 2024; SCE, 2024.

Figure 3.5-3b

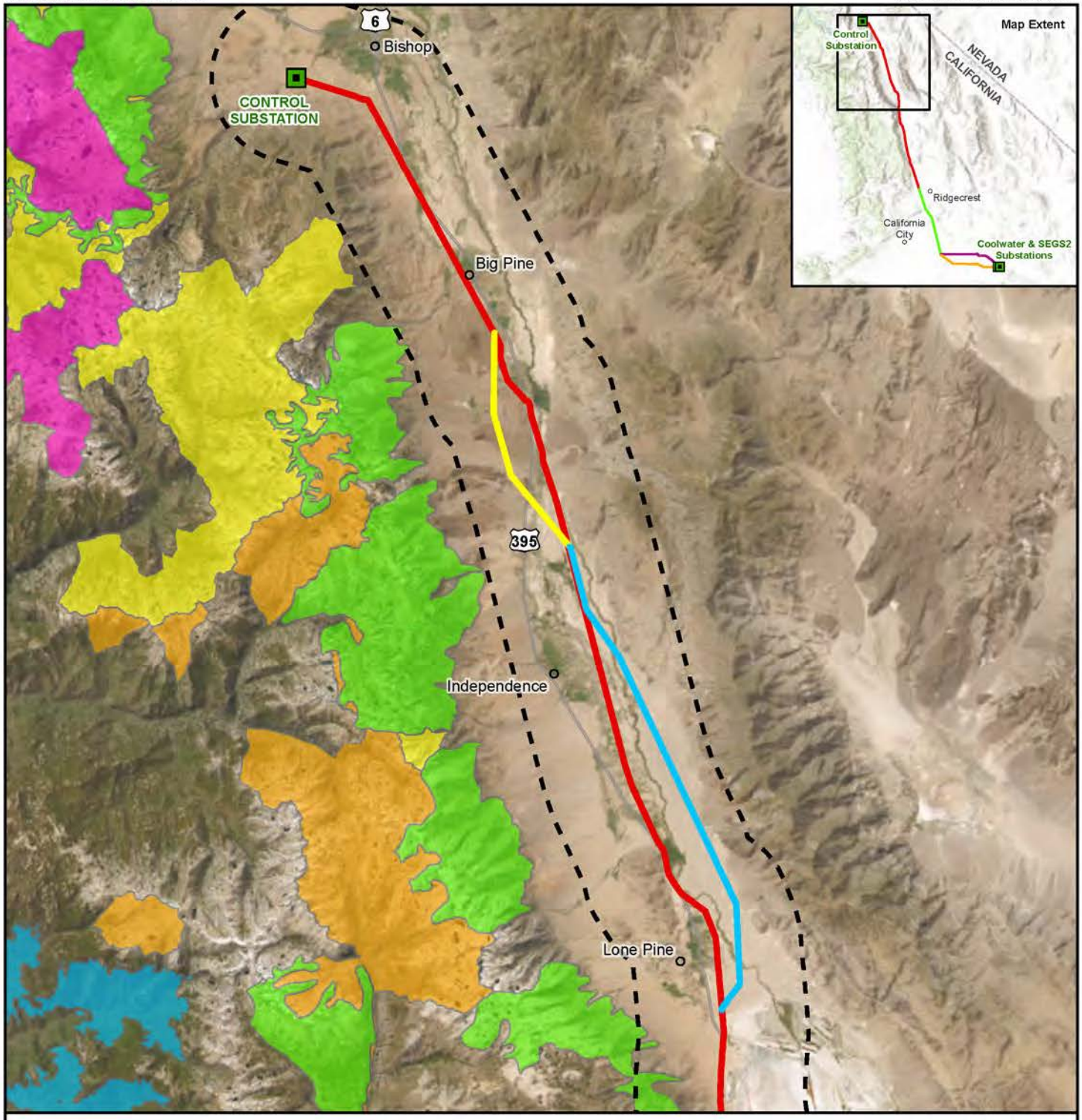
Western Joshua Tree
Segment 1 Central South

Substation
Western Joshua Tree
Group of Western Joshua Trees

Ivanpah-Control Proposed Project Segments
Segment 1: Control-Haiwee-Inyokern

1:48,000

N
0 1 miles



Source: Aspen, 2024; BLM, 2004; USFWS, 2024; Esri, 2024; SCE, 2024.

Figure 3.5-4a

Critical Habitat and Conservation Areas Segment 1 North

USFWS Critical Habitat
- Fisher
- Mountain Yellow-Legged Frog
- Sierra Nevada Yellow-Legged Frog
- Sierra Nevada Bighorn Sheep
- Yosemite Toad

- Substation
- 5-mi Buffer

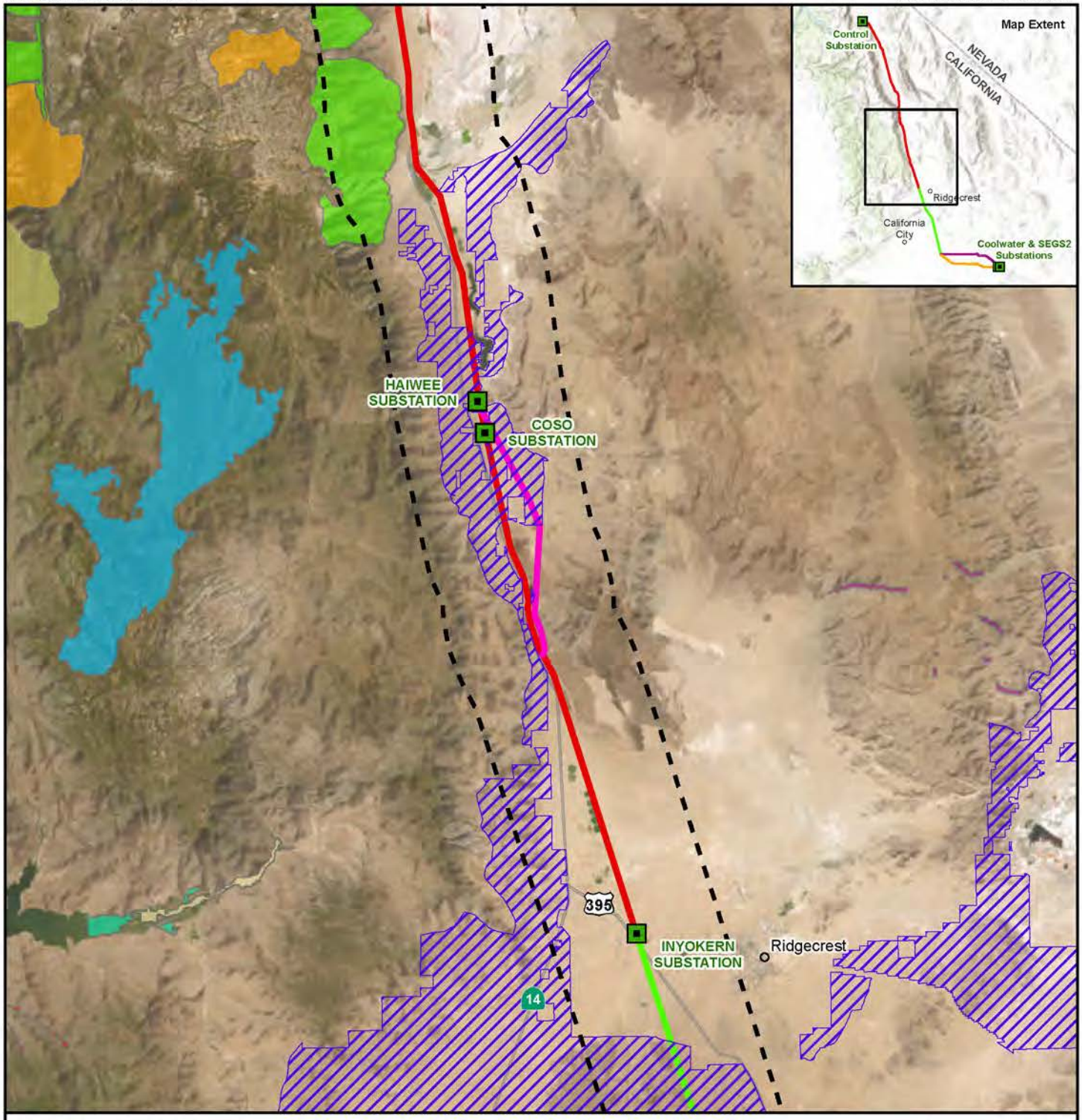
Ivanpah-Control Proposed Project Segments
- Segment 1: Control-Haiwee-Inyokern

Ivanpah-Control Project Alternatives
- Crater Mountain Realignment Alternative
- Manzanar Realignment Alternative

1:535,000

N

0 5 miles



Source: Aspen, 2024; BLM, 2004; USFWS, 2024; Esri, 2024; SCE, 2024.

Figure 3.5-4b

Critical Habitat and Conservation Areas Segment 1 South and Segment 2 North

BLM Mohave Ground Squirrel Conservation Area

USFWS Critical Habitat

- Fisher
- Inyo California Towhee
- Kern Canyon Slender Salamander
- Little Kern Golden Trout
- Mountain Yellow-Legged Frog
- Sierra Nevada Bighorn Sheep
- Southwestern Willow Flycatcher
- Yellow-Billed Cuckoo

Substation

5-mi Buffer

Ivanpah-Control Proposed Project Segments

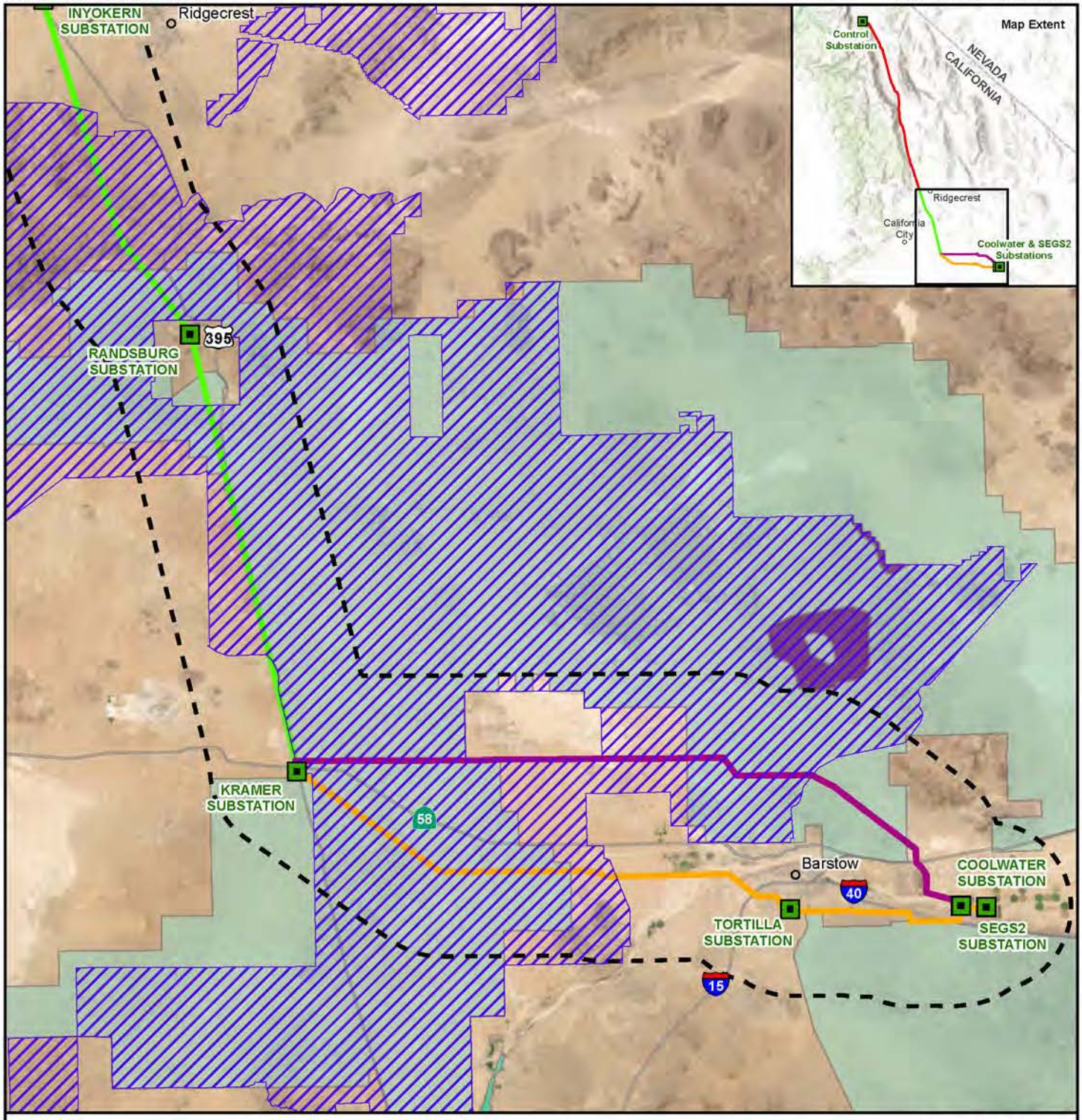
- Segment 1: Control-Haiwee-Inyokern
- Segment 2: Inyokern-Kramer

Ivanpah-Control Project Alternatives

- Fossil Falls Realignment Alternative

1:535,000

N 0 5 miles



Source: Aspen, 2024; BLM, 2004; USFWS, 2024; Esri, 2024; SCE, 2024.

Figure 3.5-4c

Critical Habitat and Conservation Areas Segment 2 South and Segments 3N and 3S

BLM Mohave Ground Squirrel Conservation Area

USFWS Critical Habitat

- Desert Tortoise
- Lane Mountain Milk-Vetch
- Southwestern Willow Flycatcher

Substation

5-mi Buffer

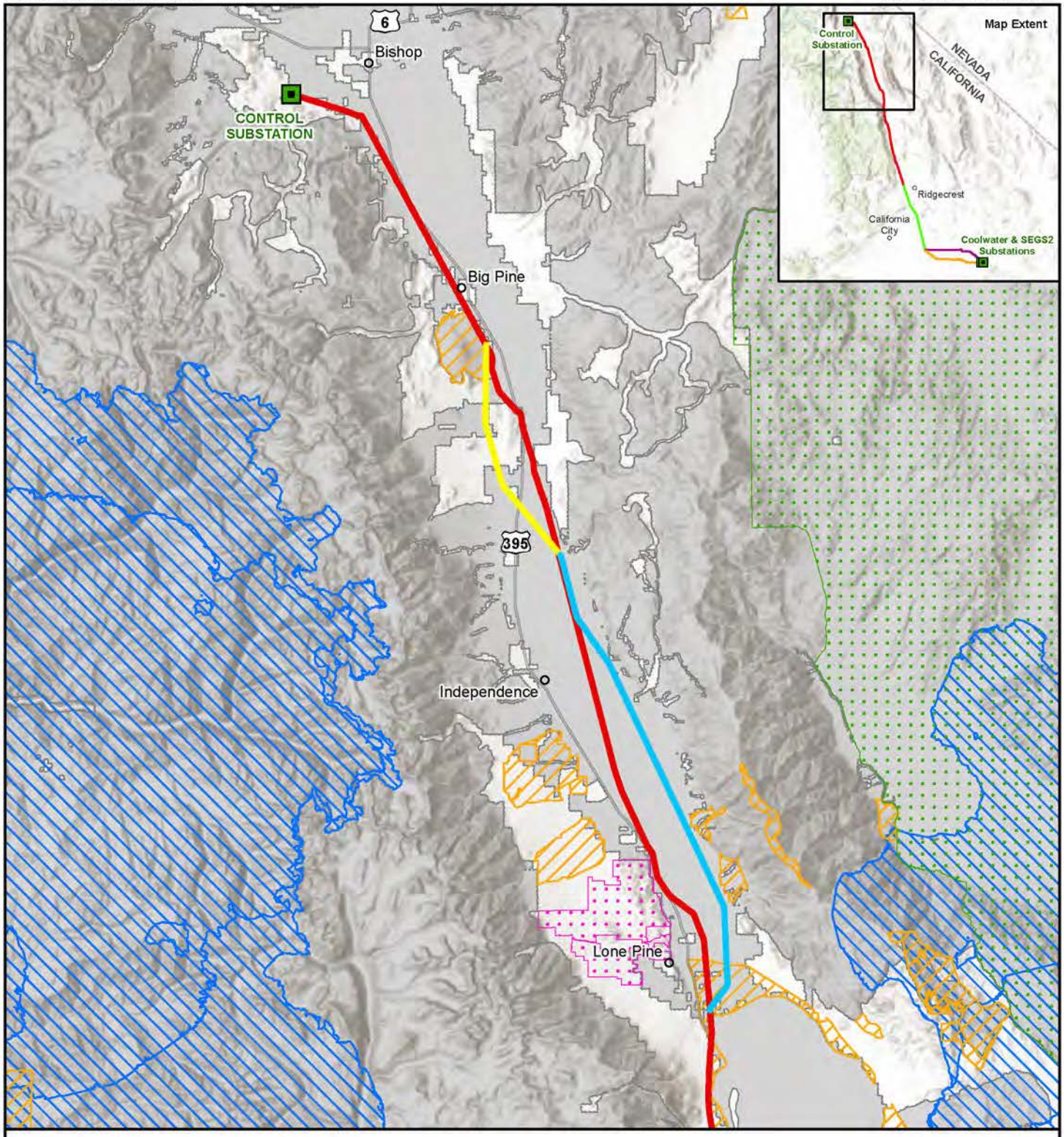
Ivanpah-Control Proposed Project Segments

- Segment 2: Inyokern-Kramer
- Segment 3N: Kramer-Coolwater
- Segment 3S: Kramer-Tortilla-Coolwater

1:535,000

N

0 5 miles



Source: Aspen, 2024; BLM, 2024; CDFW, 2024; NPS, 2024; Esri, 2024; SCE, 2024.

Figure 3.5-5a

Wildlife Movement Segment 1 North

BLM Area of Critical Environmental Concern (ACEC)
BLM National Monument
National Park Land

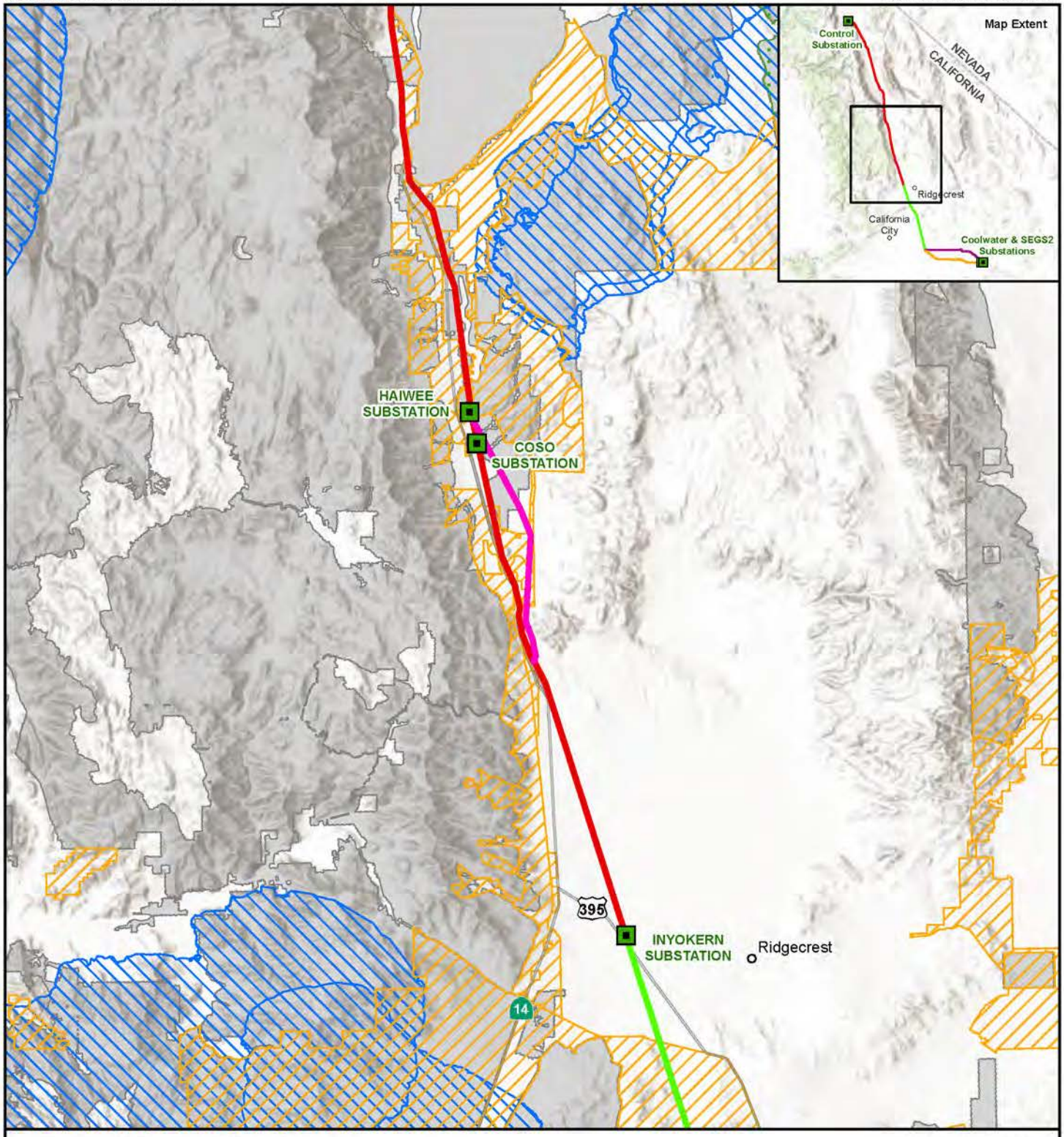
California Essential Habitat Connectivity (CEHC) (Spencer, 2010)
Essential Connectivity Area
Natural Landscape Block

Substation

Ivanpah-Control Proposed Project Segments
Segment 1: Control-Haiwee-Inyokern

Ivanpah-Control Project Alternatives
Crater Mountain Realignment Alternative
Manzanar Realignment Alternative

1:535,000
N
0 5 miles



Source: Aspen, 2024; BLM, 2024; CDFW, 2024; NPS, 2024; Esri, 2024; SCE, 2024.

Figure 3.5-5b

Wildlife Movement Segment 1 South and Segment 2 North

BLM Area of Critical Environmental Concern (ACEC)
National Park Land

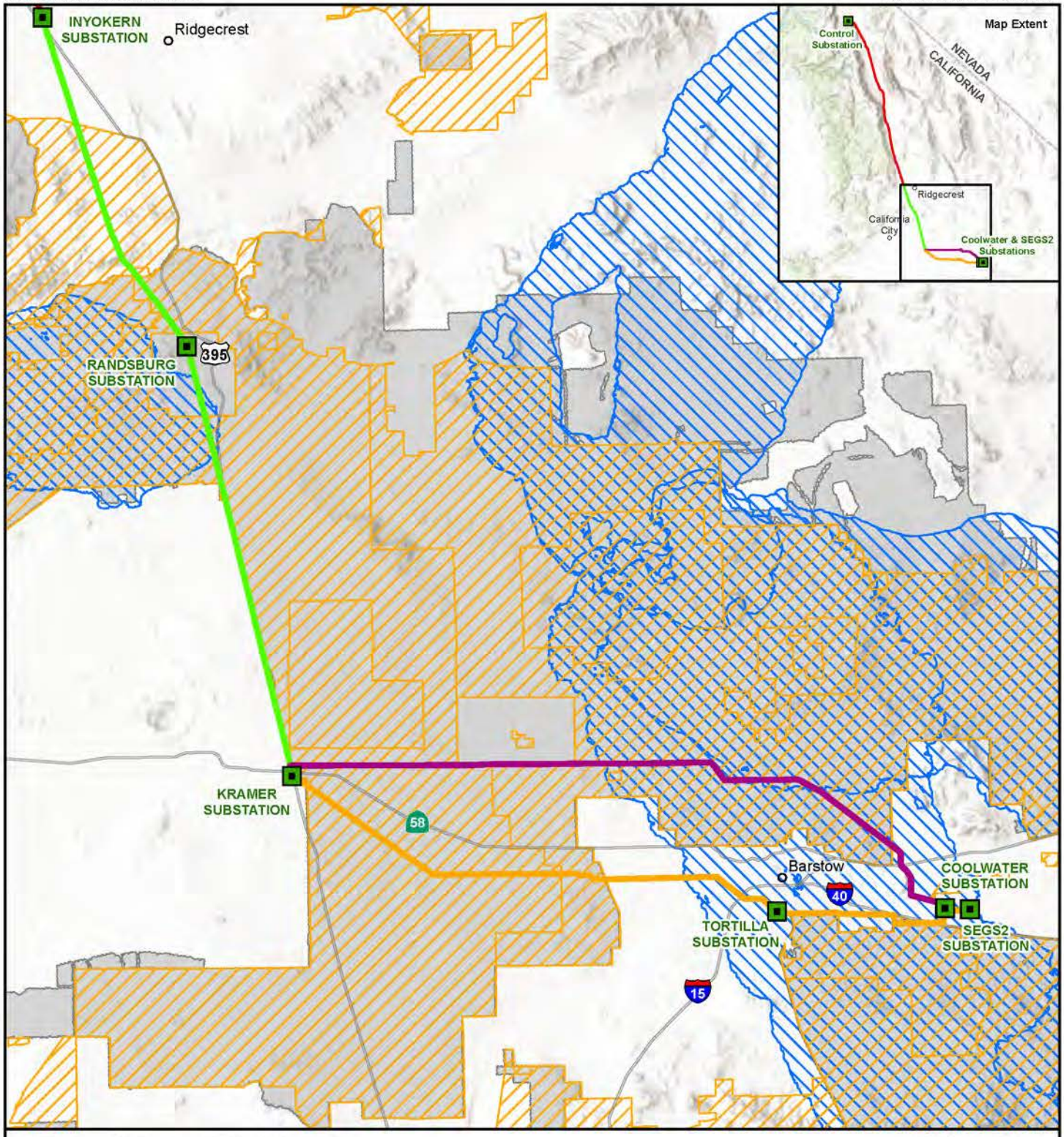
California Essential Habitat Connectivity (CEHC) (Spencer, 2010)
Essential Connectivity Area
Natural Landscape Block

Substation

Ivanpah-Control Proposed Project Segments
Segment 1: Control-Haiwee-Inyokern
Segment 2: Inyokern-Kramer

Ivanpah-Control Project Alternatives
Fossil Falls Realignment Alternative

1:535,000
N
0 5 miles



Source: Aspen, 2024; BLM, 2024; CDFW, 2024; NPS, 2024; Esri, 2024; SCE, 2024.

Figure 3.5-5c

Wildlife Movement Segment 2 South and Segments 3N and 3S

BLM Area of Critical Environmental Concern (ACEC)
National Park Land
California Essential Habitat Connectivity (CEHC) (Spencer, 2010)
Essential Connectivity Area
Natural Landscape Block
Substation
Ivanpah-Control Proposed Project Segments
Segment 1: Control-Haiwee-Inyokern
Segment 2: Inyokern-Kramer
Segment 3N: Kramer-Coolwater
Segment 3S: Kramer-Tortilla-Coolwater

1:535,000
N
0 5 miles

3.6. Cultural Resources

This section describes existing environmental conditions and anticipated impacts associated with the Proposed Project for cultural resources. Many cultural resources are also tribal cultural resources; therefore, both are described here, but the detail on tribal cultural resources and the Native American consultation completed for the Proposed Project is presented in Section 3.7.

This section summarizes data related to cultural resources in 11 tables. Several tables present summaries of resources by category; the extremely large number of resources in the project area required the development of summary tables in this section, supported by details presented in Appendix 5A. The appendix presents an additional 14 tables. These tables list the resources affected by the Proposed Project's direct and indirect effects, by segment, as well as data for the alternatives and for tribal cultural resources.

Cultural resources can reflect the history, diversity, and culture of the region, as well as the people who created them. Cultural resources are unique in that they are often the only remaining evidence of human activity that occurred in the past. Many cultural resources are present in the region surrounding the proposed Project area, located both on the ground surface and buried beneath the ground surface, which could be affected by development without adequate protections in place.

Terms and Definitions

The following terms are important to understanding the potential impacts that may occur and the analysis process.

- The term **cultural resources** is a broad term that includes resources that encompass archaeological and built environment resources.
- **Archaeological resources** are a type of cultural resource that consist of the material evidence of past human life and activity that are recovered, analyzed, and interpreted to understand human history and culture. These resources include artifacts (portable items like tools, pottery, and coins), features (non-portable resources like pits, hearths, postholes, walls, or trash deposits), ecofacts (natural materials like seeds and animal bones that relate to human activity), and human remains.
- **Built environment resources** are a type of cultural resource that consists of man-made or modified structures that provide people with living, working, and recreational spaces. They can include buildings (residential, industrial, and commercial), water management structures (levees, canals, dams, ditches), and engineered structures (railroad alignments, roads, transmission lines, and bridges).
- **Historical resources** are a subset of cultural resources that are historically significant under CEQA and can be associated with any time period. Impacts to a historical resource are considered potentially significant if the affected resource is eligible for the California Register of Historical Resources (CRHR). In addition to being at least 50 years old, a resource must be associated with important events (Criterion 1); important people (Criterion 2); embody distinctive characteristics of a type, period, region, or method of construction; represent the work of an important creative individual; or possess high artistic values (Criterion 3); or yield important information about the past (Criterion 4). In addition, historical resources must be well preserved enough, or have enough integrity, to communicate their importance. (Cal. Code Regs., tit. 14, § 4852.)
- **Tribal cultural resources (TCRs)** include sites, features, places, cultural landscapes, and sacred places or objects that have cultural value or significance to a Tribe. Impacts to a TCR are considered potentially significant if the affected resource is eligible for the CRHR or if a CEQA lead agency has determined it to be significant, as supported by substantial evidence.
- **Landscapes** are a type of cultural resource or TCR that includes geographic areas, including both natural and cultural resources, associated with a historic event, activity or person.

The ***CEQA Area of Potential Impact (API)*** defines the area within which resources could be affected by the Proposed Project. This area is the same as the area referred to by BLM as the Area of Potential Effect (APE). There are two geographic areas within the API:

- The ***Direct API*** consists of a 75-foot (23-m) buffer along the Proposed Project transmission corridor (i.e., SCE ROW), a 50-foot (15.2-m) buffer around ancillary areas, as well as a 25-foot (7.6-m) corridor for all access roads.
- The ***Indirect API*** consists of a one-mile (1.6 km) radius on the portions of the Proposed Project where new subtransmission structures will be installed, where existing structures will be upgraded, and a one-mile buffer to the outer edges of the 150-foot-wide corridor that brackets the existing and proposed subtransmission lines, as well as the Independence Telecom Tie (ITT). The CEQA indirect API is the same as the BLM APE for visual effects.

Reports Providing Data for this Section

The information in this section is based on confidential and non-confidential reports prepared for SCE for the Proposed Project, unless otherwise referenced. The confidential reports document the studies completed for the Proposed Project and the archaeological resources identified in the direct and indirect API. They include: Ainis et al 2022a, b, c; Arias et al 2022; Bever and Dumm 2021; Bever et al 2022; Vicari 2021; Vyhmeister et al 2022; Wesson et al 2025; and Wesson et al 2024. The non-confidential report (Urbana 2025) documents the studies that identified built environment resources in the direct and indirect API.

Scoping Comments

The following scoping comments relevant to historical resources were received from the National Park Service (NPS), Naval Air Weapons Station China Lake (NAWS), and the Native American Heritage Commission (NAHC). These comments are summarized as follows:

- Concern with impacts relating to placement of contractor material yard at the Manzanar Airfield (National Historic Site and National Historic Landmark). Recommend eliminating or relocating the material storage area to a different area. (NPS)
- Concern with potentially adverse impacts to precontact and historic resources adjacent to the transmission line. Recommend avoidance measures or off-site mitigation. (NPS)
- Require notification if any archaeological sites are found on Navy-managed lands. (NAWS)
- Recommend contacting the appropriate regional California Historical Research Information System Center for an archaeological records search. (NAHC)
- Recommend preparation of a professional report detailing findings and recommendations of the research search and field survey if an archaeological inventory survey is required. (NAHC)
- Contact the NAHC for a Sacred Lands File search and Native American Tribal Consultation List. (NAHC)
- Be aware that the lack of surface evidence of archaeological/tribal cultural resources does not preclude their subsurface existence. (NAHC)

Other comments were received from Native American tribes or tribal members; those comments are presented in Section 3.7. The comments listed above are addressed in this section.

3.6.1. Environmental Setting

Information provided regarding the setting of the Proposed Project places it in its geographical and geological context. Additionally, the precontact, ethnographic, and historical background provides the context for the evaluation of the eligibility of any identified cultural resources for the CRHR within the API for the Proposed Project.

3.6.1.1. Regional Setting

Identifying the kinds and distribution of resources necessary to sustain human life in an environment, and the changes in that environment over time, is central to understanding whether and how an area was used during prehistory and history. During the time that humans have lived in California, the Owens Valley and Mojave Desert have undergone several climatic shifts. These shifts have resulted in variable availability of vital resources, and that variability has influenced the scope and scale of human use of the vicinity of the Proposed Project site. Consequently, it is important to consider the historical character of local climate change, or the paleoclimate, and the effects of the paleoclimate on the physical development of the area and its ecology.

The API spans two U.S. Environmental Protection Agency (EPA)-designated Level III Ecoregions: Central Basin and Range/Owens Valley, and Mojave Basin and Range/Mojave Desert. As these ecoregions are quite different, as such the following discussion of the environmental setting is organized by region.

Central Basin and Range/Owens Valley

The northern portion of the API falls within the Central Basin and Range Ecoregion. This geomorphic province is bordered on the west by the Sierra Nevada, on the southeast by the Mojave Desert, and on the northeast by the Nevada border. The focus here is the Owens Valley, an approximately 180-mile valley bordered by the Sierra Nevada Range to the west and the White and Inyo Mountains to the east. The narrow Owens Valley initiates east of Mono Lake to the north and terminates at the Coso Range to the south. Other notable features include the El Paso Mountains, Indian Wells Valley, Fremont Valley, and Rose Valley.

The climate in the Owens Valley is arid, sunny, and windy, with moderate to low humidity. Roughly 70 percent of the annual precipitation falls in the adjacent Sierra Nevada Range; the effecting rain shadow releases an annual precipitation of only 4 to 6 inches within the Owens Valley.

The valley floor is composed of mostly unconsolidated alluvial fan, transition-zone, glacial and talus, and fluvial and lacustrine deposits. This “valley fill” also contains recent volcanic and pyroclastic rocks, and as a result native plant communities found in the Owens Valley range from intolerant to highly tolerant of alkalinity and salinity in the soil. Within the alluvial fans bordering the Owens Valley, plant communities are composed of big sagebrush, California buckwheat, and antelope brush. In the highly alkaline areas, such as lakebeds, plant communities are composed of rubber rabbitbrush, and greasewood or *Juncus* spp. in the meadows. Common wildlife species include mule deer, coyote, bobcat, and black-tailed jackrabbit. Endemic fishes in this region include Lahontan cutthroat trout, White River springfish, Pahranagat roundtail chub, Monitor Valley speckled dace, and Independence Valley tui chub.

Mojave Basin and Range/Mojave Desert

South of the Central Basin and Range sits the Mojave Basin and Range Ecoregion, extending from Death Valley National Park to the north to Joshua Tree National Park to the south. The Mojave Desert province is bound by the California-Nevada border to the east and the San Andreas Fault Zone and the Transverse Ranges to the southwest. This region contains scattered north-south-trending mountain ranges, with large basins, valleys, lake beds, and alluvial fans occurring between. A predominant feature amongst the API landscape is the Mojave Desert. Other notable landscape features include Ivanpah Valley, Cronese Valley, Shadow Valley, Soda and Silver Lakes, Soda Mountains, and Mojave Valley.

The Mojave Basin and Range Ecoregion has a dry, subtropical desert climate with an average annual precipitation of approximately 6.6 inches, ranging from 2 inches in the lowest elevations, at 279 feet (85 m) below msl, to over 35 inches on the highest peaks, over 10,827 feet (3,300 m) above msl. The southern API is largely composed of Pleistocene and Holocene-aged alluvial fan surfaces.

Characterized by sparse vegetation, plant communities in the Mojave Basin and Range are composed of creosote bush, white bursage, Joshua tree, saltbush, and big sagebrush on mountain slopes. Wildlife

species common to the area include desert bighorn sheep, coyote, kit fox, black-tailed jackrabbit, desert cottontail rabbit, desert tortoise, sagebrush lizard, desert horned-lizard, rattlesnakes, hawks, owls, and many neotropical migrants.

3.6.1.2. Cultural Setting

The precontact, ethnographic, and historical background presented in the cultural setting provide the context for the evaluation of the California Register of Historical Resources eligibility of any identified cultural resources.

Precontact Period

The precontact period is defined as the time in the Americas before the arrival and influence of European explorers and settlers, when indigenous societies lived developed, and governed themselves independently. In California, the precontact period ended around 1769, when the Spanish mission system started to be established.

The API is located within both the Mojave Desert and the Owens Valley, which are part of the area archaeologists define as the larger southwestern Great Basin region and the California Deserts region. The Great Basin is an extensive geographic region encompassing portions of California, Oregon, Nevada, Idaho, Wyoming, and Utah. However, there are substantial differences between the precontact Native American archaeology in the Mojave Desert portion of the Proposed Project and the Owens Valley portion. Numerous researchers have developed chronological sequences for these areas throughout the past 100 years of archaeological research. No single chronology is applicable to the whole of the California desert or Great Basin regions, in part because there is great archaeological variation both within and between regions, in part based on shifting distributions of plants and animals following climatic oscillations throughout the Holocene. A summary of the regional precontact cultural chronology is presented below.

Central Basin and Range/Owens Valley

The chronological framework most often used in the Owens Valley divides the precontact period into five subperiods.

Paleoindian Period and Clovis Complex (14,000 – 11,500 years BP[1]). The earliest evidence for the human presence in the Proposed Project vicinity has been recovered from the Mojave Desert and Owens Lake, and in western Nevada with radiocarbon dates from Fort Irwin and China Lake confirming human presence in the region by ca. 11,600 years ago. Paleoindian populations lived in small, highly mobile groups, who ranged over large distances hunting and gathering near permanent or perennial sources of water such as pluvial lake and outwash drainages. The artifact assemblage of the Clovis tradition includes large, lanceolate bifaces with distinctive fluting, large scrapers, blades made from prepared cores, and expedient flaked stone and bone tools.

Little Lake Phase (11,000 – 3,800 years BP). This period's archaeological assemblage has much in common with that of the Pinto Complex described below for the Mojave Desert. It includes Little Lake series, Lake Mojave and Pinto Series projectile points, Borax Lake Wide Stem bifaces, and possible early manifestation of both Humboldt basal-notched and Elko projectile points. Stemmed points from this period have been found in large sites alongside artifacts with dates spanning thousands of years indicating long-term occupations. Extensive trade with coastal groups is evidenced by the presence of Olivella shells and beads in Little Lake sites. Ground stone and milling tools indicate that plant-processing was on the rise at least 9,000 years BP. Faunal remains indicate plant processing focused on smaller fauna. Little Lake site types range from small camp sites and workshops to extensive residential sites, suggesting centralized long-term residences.

[1] "BP," or "Before Present," indicates the number of years before the present, standardized as the year 1950.

Newberry Period (3,800 – 1,280 years BP). The Newberry period is further divided into the Early Newberry period (3,800 – 2,000 years BP) marked by a lower representation of sites with smaller groups foraging over broad areas, and the Late Newberry period (2,000 – 1,350 years BP) marked by base camps and lithic reduction sites indicating more consistent settlement and subsistence strategies. Obsidian extraction and intensive use of major regional quarries peaked during the Newberry period. Artifact assemblages for the period as a whole are characterized by prepared bifaces, an abundance of Elko series points, medium lanceolate Humboldt basal-notched points and Mojave Gypsum Complex points. Data gathered from faunal and palaeobotanical remains suggest a broadening of the diet base during the Newberry Period.

Haiwee Period (1,350 – 650 years BP). Haiwee lithic technology shows an overall decrease in the reliance of obsidian around 1,000 years ago, more expediently made flake cutting tools and a shift toward crafting smaller points out of locally sourced material. Archaeological assemblages include an abundance of smaller-sized Rose Spring projectile points and variants as well as Eastgate projectile points. Technological patterns from this period are defined by the introduction of the bow and arrow, a focus on small-bodied animals, and early manifestations of Owens Valley Brown Ware. Discoveries at Haiwee period habitation sites, similar to the Rose Spring period of the Mojave Desert, suggest a significant shift toward household economies. This is marked by an increase in sedentism and subsistence intensification, particularly the processing of seeds and nuts utilizing bedrock mortars.

Marana Period (650 years BP – Contact). Cultural trends initiated during the Haiwee period continue in the Marana period, including resource intensification and household focused economies. During this period, archaeological assemblages were characterized by an increase in local sourcing for lithic materials and a shift towards flake-core reduction strategies. They are composed of Desert Series points including the thin, small triangular Desert Side-notched, and the slightly larger Cottonwood and Western Triangular projectile points. The adoption of pottery, intensification of trade with coastal communities, increased densities of ground stone artifacts, more permanent residential structures and possibly the practice of incipient horticulture also defines this period in the Owens Valley.

Mojave Basin and Range/Mojave Desert

The chronological framework most often used in the Mojave Desert divides the precontact period into six subperiods.

Paleoindian Complex (pre-14,000 – 11,000 years BP) and Clovis Complex (13,500–12,900 years BP). In this ecoregion, and in the Mojave Desert specifically, terminal Pleistocene sites are often found along remnant shorelines of Pleistocene lakes, although the rare fluted projectile point associated with the Clovis tradition has been found in the southeastern Mojave Desert. The assemblages of this period include lunate and eccentric crescents, small flake engravers, a variety of scrapers, leaf-shaped knives, basally thinned lanceolate points, drills, and heavy choppers or hammer stones.

Lake Mojave Complex (11,000-8,000 years BP). Lake Mojave Complex archaeological assemblages include percussion- flaked cores and pressure-flaked bifaces, unifacial scrapers, crescents, stemmed Lake Mojave and Silver Lake projectile points. Nonlocal lithic materials and beads made from marine shell suggest wide-ranging interaction and trade. Lake Mojave Complex sites with fluted projectile points have been documented near the API.

Pinto Complex (10,000-3,800 years BP). This period has been traditionally defined based on the presence of Pinto points with characteristic upward-sloping shoulders and concave bases. In the Mojave region, Pinto sites are found in a wide variety of environmental settings suggesting a wide-ranging and generalized land-use pattern. Pinto Complex sites contain milling slabs and other tools indicating an increase in the use of plants, specifically small seeds. Sites assigned to this time period are uncommon in the region, suggesting a sparse population and/or mobile populations dependent on hunting and gathering.

Gypsum Complex (4,000 -1,000 years BP). During this period, the subsistence system appears to have broadened. A greater exploitation of hard seeds is inferred by a higher frequency of milling stones that often include portable manos and metates while the presence of mortars and pestles may indicate exploitation of mesquite beans. This intensification supported larger populations. In addition, large-game hunting resumed importance during this interval largely due to improving climatic conditions. Changes in subsistence strategies were accompanied by a shift from family-based social organization to larger, multifamily bands. Flaked stone assemblages include a higher frequency of microcrystalline raw material (often from non-local sources), a greater use of pressure flaking, and medium to large Elko, Humboldt, and Gypsum dart points.

Rose Spring Complex (1,800-900 years BP). The smaller Rose Spring and Eastgate points found in this period are generally considered to represent the onset of bow-and-arrow technology. The period is also characterized by more diversified toolkits and a narrowing in the spatial range of raw material sources, indicating declining foraging territories. Artifact assemblages may include a range of grinding equipment, ceramics (including extra-local trade items), and non-subsistence-related items such as ornaments and ritual objects. Several large Rose Spring Complex sites with rich middens have been documented in the Mojave area which have been interpreted as village sites. Other localities in the Mojave appear to have had more mobile, loosely based settlement systems characterized by considerable mobility and heavy reliance on springs.

Late Prehistoric Complex (900 years PB - Contact). This period is defined by the presence of Cottonwood and Desert Side-notched arrow points. It also includes various rough brownware ceramics, as well as small steatite and shell beads, and large, unshaped milling equipment. This period is also marked by the inception of agriculture with floodplain farming. These assemblages are generally equated with the entry of Numic groups into the region. Beginning about AD 1850, inhabitants of the region were directly and indirectly affected by Euro-American incursions and by Euro-American technology, economy, and culture. This resulted in less mobile, but family-centered settlement patterns.

Ethnographic Setting

Several present-day Native American groups occupy and regularly travel through the Central Basin and Range (Owens River Valley) and the Mojave Basin and Range (Mojave Desert), as did ancestors of these groups. Native American groups having historical Tribal territories falling within the vicinity of the Proposed Project include the Owens Valley Paiute in the valley of the Owens River along the eastern slope of the Sierra Nevada; the Timbisha Shoshone (Western Shoshone) in Death Valley; the Southern Paiute and Chemehuevi in the eastern half of the Mojave Desert; Kawaiisu in the Tehachapi Mountains; the Mojave, whose subsistence activities extended well into the Mojave Desert along the Mojave River and the Colorado River; and the Vanyumé (Desert Serrano) who ranged and occupied modern-day Barstow.

See Section 3.7, Tribal Cultural Resources, for more detailed information about these groups.

Historic-Period Setting

The post-contact history of the region where the Proposed Project lies and the surrounding area is typically broken into three main periods, the Spanish, or Mission Period (1769 - 1821), the Mexican or Rancho Period (1821 - 1848), and the American Period (1848 - present).

Spanish Period (1769–1821)

Early European presence in the Spanish Period was generally limited to coastal regions of California and only impacted interior California later. The first written record of exploration into the Mojave Basin and Range region of the Proposed Project occurred in 1772, when Don Pedro Fages documented his expedition from San Diego to San Luis Obispo in pursuit of Spanish Army deserters (Wesson et al 2021:3-28). Soon after, in 1776, Fr. Francisco Garcés explored the Tehachapi Mountains during his travels from the San

Joaquin Valley to the Mojave River near Barstow, adjacent to the north side of Segment 3S. It is on this trip, that he is known to have named a large river Río de San Felipe, now known as the Kern River (Wesson et al 2021:3-28). From this time until the 1880s, little documentation exists for European presence in the Mojave Desert and beyond, however, it is certain that such contacts did occur and directly and indirectly affected Native American lifeways in these areas.

Although the Spanish were determined to gather all Native Americans into the mission system, there are numerous examples of interior Native American villages that are not represented in the mission registers. As the Spanish presence in southern California increased, many Native neophyte converts attempted to escape the missions, seeking refuge with interior Tribes, including those in the southern San Joaquin Valley, as well as the Mojave Desert and adjacent mountains. The latter includes the Proposed Project vicinity. Due to its distance from the missions and presidios, the Mojave Desert and adjacent mountains served as a haven for escaped fugitives, particularly Native Americans, and this area's exploration primarily came from expeditions sent after those fugitives. There were numerous forays into these regions by Spanish soldiers who were attempting to recapture runaway neophytes.

Mexican Period (1821–1848)

After more than a decade of intermittent rebellion and warfare, New Spain (Mexico and the California territory) won independence from Spain in 1821, beginning the Mexican Period. Governor José Maria Echeandía issued two decrees (in 1826 and 1831), effectively launching the secularization of the California missions. The removal of Native Americans from mission land was officiated under Governor José Figueroa with the Secularization Proclamation of 1834, resulting in the subdivision of former mission lands and establishment of large ranchos. During the Mexican Period, these ranchos became important economic and social centers, although none of them were within the API. By the 1830s, economic activity in southern California centered on agriculture and ranching, with cattle hides being a primary export from the region.

U.S. government-commissioned explorer Captain John C. Frémont led a mapping expedition through Kern County in 1843 and 1844. He was responsible for naming several landmarks in the area, including Kern River (named after Edward Meyer Kern, his topographer on the expedition), the Mojave River, and the Old Spanish Trail, the first major non–Native American transportation and trade route through southern California. Frémont and several famous frontiersmen such as Kit Carson and Joseph Walker joined the American forces fighting in the Mexican–American War in 1846. The war officially ended with the Treaty of Guadalupe Hidalgo in 1848, and California officially became a state with the Compromise of 1850.

The Central Basin and Range remained largely unexplored by non-Natives throughout the Mexican Period. The first recorded accounts of Euro-American exploration of the area occurred with Joseph Walker's return from the Bonneville trapping expedition in 1833 and Frémont's first pass through the region in 1842.

The Mojave Basin and Range also remained largely unexplored by non-Natives throughout the Mexican Period. There are secondary accounts, told to Frémont, of Native American groups living along the Mojave River and the mountains to the north at this time, trading amongst each other and traveling by route of the historic Mojave Trail. This was a traditional thoroughfare of desert-dwelling Native Americans, which ran between watering holes across the Mojave Desert between the Colorado River and Mojave River. The route of this trail is currently a dirt road across what is now within the National Park Service's (NPS) Mojave National Preserve. The Mojave Trail intersects the Ivanpah-Control Project corridor along Segment 3S.

American Period (1848–present)

The Treaty of Guadalupe Hidalgo ushered California into its American Period. Most of the historic resources identified in the API are associated with the American Period, therefore, the discussion here within emphasizes the American Period.

After the California Gold Rush of 1848, the Central Basin and Range was a key destination for prospectors and miners seeking new sources of wealth in the 1860s. After the turn of the nineteenth century, the

water wealth of Owens Valley attracted engineers and developers from Los Angeles. These changes were controversial for both the Native Americans who lived in the Valley and later for Euro-Americans who settled in the region. Transportation routes facilitated the exploitation of metals and water, leaving their mark on the landscape. During World War II (WWII), the Manzanar War Relocation Center, located within the Proposed Project API, interred Californians of Japanese ancestry who were removed to the area as a wartime defense measure. After WWII, the region became known for its active recreation opportunities such as hiking, skiing, and other outdoor pursuits.

The Mojave Basin and Range, immortalized by stories of early travelers who struggled to cross the barren desert terrain like the Lost '49ers of the Manly Party, later became a center of transportation outposts including camps, stage stations, and railroad depots. In the 1860s, the Mojave Desert became a destination area as increased mining efforts called for transportation routes to extend from main lines to distant locations of precious metals and minerals. During WWII and the Cold War that followed, the region became a destination for military facilities utilizing the wide-open spaces. During the boom years of the 1950s and 1960s, recreational enthusiasts discovered the natural and cultural attractions of the desert. Today, communities of the Mojave Desert are linked to these established military facilities, mining locations, and transportation corridors.

Historical Themes

The resources found in the API are tied to 8 historical themes in the region: Water Conveyance; Electrical Power Conveyance; Mining; Exploration, Transportation and Travel Pathways; National Defense; Agriculture and Ranching; Homesteading and Settlement; and Recreation.

Water Conveyance (1870s – 1930s)

The Owens River and the numerous tributaries descending from the snowmelt of the Sierra Nevada Mountain Range feed the Owens Valley. Such as the Owens Valley Paiute who dug by hand extensive irrigation systems, ancestral Native groups in the area developed similar irrigation ditch technology as was recorded by civil engineer Allexey W. Von Schmidt in 1855-1866. In the 1870s, American settlers diverted creeks to irrigate newly developed lands before Owens Valley farmers organized between 1878 and 1905 to build an irrigation network carrying water from the Owens River by way of canals and ditches. Many of these canal water conveyances, such as the Rawson Canal (ca. 1886), the Stevens Ditch (ca. 1887), and the Big Pine Canal (ca. 1893), intersect with the Proposed Project corridor.

Competing with Owens Valley farmers for access to a fresh water supply was the rapid-growing City of Los Angeles. The Los Angeles Aqueduct was constructed between 1907 and 1913, complete with 142 tunnels, 120 miles of railroad track, 500 miles of highways and roads, two power plants, 169 miles of transmission lines, and 240 miles of telephone wire. Much of the associated infrastructure from the L.A. Aqueduct construction intersects with the Proposed Project corridor. Portions of canals and ditches of which farmers and ranchers relied on were destroyed in the construction process, leading the Los Angeles Department of Water and Power (LADWP) to construct a 100-foot-tall dam. Big Pine Creek Power Plant (beginning operation in 1925) and the Haiwee Power Plant (beginning operation in 1927) joined Division and Cottonwood Creek power plants (ca. 1908) to deliver hydroelectric power to the Owens Valley.

In the drought years experienced by the Owens Valley in the 1920s, several of the early canal water conveyance systems were acquired by the LADWP when local farmers and ranchers sold their land and associated water rights, cementing the “Water War” period.

The Mojave Desert, in contrast, is considered the driest and smallest desert in North America. Underground rivers, three active rivers (the Mojave, Amargosa and Colorado Rivers), several major artesian bodies of water and geothermal-heated hot springs located throughout the desert have sustained human presence in one of the driest landscapes in North America. Noted by Fr. Garcés in 1776, precontact trails were

traversed by way of a network of desert oases and springs. Some Native American populations navigated the Mojave Desert by learning routes to water sources through song.

As early as the 1840s, visiting explorers, soldiers, and fur trappers crossing the desert were led to these Mojave Desert watering holes by local Native guides. During the California Gold Rush, non-Native traffic increased along these trails, ultimately depleting desert resources and negatively impacting and displacing Native American populations, a conflict that worsened and grew hostile. Newly arriving homesteaders beginning in the 1870s and through the 1920s competed with ranchers for land and water, further draining the region's scant supply. The demand for more water did not cease, eventually led to the federal construction of Parker Dam (ca. 1939) on the Colorado River.

Electrical Power Conveyance (1905 – 1947)

Southern California lacked sufficient electrical power to accommodate population growth and urban expansion at the beginning of the twentieth century. Nevada Power Mining and Mining Company (NPMMC) owners, engineer Loren B. Curtis and Charles M. Hobbs, developed an interest in generating an alternate and reliable energy source for mining communities in the mountains. Curtis selected Bishop Creek as the location to produce hydroelectricity. By September 1905, the NPMMC began supplying power from the Bishop Creek Hydroelectric System (in the northern portion of the API) to mining companies in the Goldfield-Tonopah silver and gold mining districts. Construction continued until 1938, resulting in an energized mining boom and period of economic prosperity for the Eastern Sierra region.

California power companies, having exploited hydrological sources within the state, soon explored fuel-burning alternatives in other states for power production. By 1936, Boulder Dam (known today as Hoover Dam) was built on the Colorado River for the purposes of irrigation, drinking water, and power generation.

The Bureau of Power and Light and LADWP entered into contract with the U.S. Bureau of Reclamation in 1930 to purchase electrical power from Hoover Dam. LADWP began construction of the 270-mile Boulder Transmission Lines 1 and 2 in June 1933 and completed them in mid-1936. The Proposed Project would set a standard for long-distance transmission through investments in research, development, and technological advances in the design and construction of towers, conductors, control mechanisms, and auxiliary equipment for the 270-mile system. Aside from the construction of widely spaced galvanized metal towers, an access road paralleling all 3 side-by-side lines was bladed and used for construction, maintenance, and operation purposes. By 1940, 11 power transmission lines originating from Hoover Dam were dedicated to providing southern California and Nevada with electrical power.

Mining (1850s – 1940s)

Gold was first identified by Mexican traders at Salt Springs in the late 1820s and later confirmed in 1849 by members of a Mormon party led by Captain Jefferson Hunt, recognized as one of the founders of the Mormon colony in San Bernardino. Although placer mining and lode mining operations were established, early mining development in the southwest portion of San Bernardino County was sporadic during this early period. Gold strikes continued to be made through the late 1800s, and metal mining of gold, copper, and silver-lead-zinc sustained as a significant draw to San Bernardino County until 1900. The central region of the county, near Barstow, has been mined longer than any other region in the county. The Proposed Project intersects this area, in addition to other prominent mining areas including the Rand Mining Historic District, which is comprised of 17 discontiguous locations.

Silver was discovered in the New York Mountains in 1861, in the Providence Mountains in 1863, in the Ivanpah Mountains in the 1860s, and in the Avawatz Mountains in 1870. The Calico mining district, the largest silver strike in California history, was established in 1881 and ceased operation by the mid-1890s.

WWI efforts called for a heavy demand for all mineral resources, including borate, iron, tungsten, and talc. Mining projects were once again on the rise and continued to feed the demand produced by consumer product manufacture through the 1920s until the Great Depression 1890s.

Exploration, Transportation and Travel Pathways (1776 – 1950s)

Trails, roads, highways, and railroads throughout the centuries have connected the wider United States with the Great Basin region and the California Coast. Most of these routes are east-west oriented and terminate in the Los Angeles area. The precontact and historic trails are better described as trail systems, rather than single trails. Before the onset of automobiles, wagon roads were utilized to cross the terrain, access ranch and agricultural lands and connect mining communities to the wider area. In some cases, remnants of wagon wheel tracks are still visible. In other cases, they have been repurposed for vehicular traffic or railroads.

Several well-traversed wagon roads that acted as a backbone to the region in the 1800s later served as farm-to-market roads in the early 1900s and major highways post WWII. U.S. Route 395, the major north-south route through the API, was cobbled together by connecting segments of trails and wagon roads over time. Tinemaha Road (ca. 1907), or Old U.S. Route 395, traversed through Owens Valley connecting major points of interest. El Camino Sierra (ca. 1910) was constructed with the purpose of attracting tourists to the Mojave Desert and the Owens Valley. State Route 247 in the Mojave Desert was extended from its ca. 1921 alignment to serve an increased local residential population post WWII. Some other key routes intersecting the Proposed Project corridor include: the Old Spanish Trail; the Mormon Trail/ Mormon Road; Stoddard Wells Road; the Old Mojave Trail/Mojave Road; the Owens Valley Midland Trail/ Midland Trail; the Old Arrowhead Trail/Interstate 15; the National Old Trails Highway/U.S. Route 66; the Southern Pacific Railroad ("The Jawbone"); the Atchison, Topeka & Santa Fe Railroad (AT&SF); and the San Pedro, Los Angeles & Salt Lake Railroad (SP, LA & SL).

National Defense (1846 – 1980s)

While there are a large number of military facilities and training grounds present in the Owens Valley and Mojave Desert regions, the national defense theme in WWII and post-WWII eras focuses on four facilities within the API and vicinity: Naval Air Weapons Station China Lake, Edwards Air Force Base, Marine Corps Logistics Base Barstow, and Fort Irwin National Training Center.

Naval Air Weapons Station (NAWS) China Lake is the largest single land holding for the U.S. Navy. It covers portions of Inyo, Kern, and San Bernardino counties, for a total of more than 1.1 million acres. NAWS China Lake was established in 1943 under the name Naval Ordinance Test Station and quickly developed into a large facility, attracting top talent to the war effort. Two noteworthy national defense accomplishments from NAWS China Lake during this time include the development and manufacture of nuclear explosion technology and the tactical delivery of the first atomic bomb. The southern portion of the I-C Project's Segment 1 runs along the western boundary of the NAWS China Lake.

Edwards Air Force Base, formerly Muroc Air Force Base, started as an auxiliary bombing range for March Air Force Base in the 1930s. By 1940, its footprint had grown to over 1,000 square miles as additional public land was acquired through executive order. During WWII, Edwards Air Force Base was used as a flight training base. During the Cold War, activities at the base shifted to experimental flight testing of rocket engines with the X-1 program. These advances set the stage for research that would result in space flight and, eventually, the space shuttle. The Rogers Dry Lake site at Edwards Air Force Base was listed on the National Register of Historic Places and designated a National Historic Landmark in 1985. The Kramer Substation (where Segments 2, 3N, and 3S meet) is on land within Edwards Air Force Base.

The Marine Corp Logistics Base (MCLB) in Yermo was originally established by the U.S. Navy in 1942 as a large inland storage depot, providing supply and warehouse functions during WWII. Shortly thereafter, the Marine Corps took control of the facility. The MCLB is currently comprised of three locations, all east of Barstow: The Main Base at Nebo, the Yermo Annex, and the Marine Corps Rifle Range located just outside the annex. The MCLB is located just east of the southern end of Segment 3N. The Rifle Range is bisected by the Proposed Project corridor in Segment 3S.

Fort Irwin, named in memory of WWI battle commander Major General George Irwin, was erected on 1,000 square miles of repurposed public land in 1940 through Presidential order. In 1958, the first antenna of the Goldstone space antenna array was built. Goldstone, one of three complexes known as the Deep Space Network (DSN), is listed on the National Register of Historic Places and deemed a National Historic Landmark in 1985. The facility went through periods of active status during war years and inactive status in between wars until 1981 when Fort Irwin was reactivated as the National Training Center (NTC), a realistic training center for desert and urban combat. The NTC is northeast of Segment 3N.

The Manzanar War Relocation Center is also included as part of the National Defense theme because of its close association with WWII as one of ten such centers established under direction of executive order in 1942. The center served as an internment camp during WWII, after the Japanese attack on Pearl Harbor, for people of Japanese ancestry who were removed from exclusion zones. The Manzanar site was designated as a National Historic Landmark in 1985 and listed on the National Register of Historic Places in 1976. The NPS visitor center for the Manzanar National Historic Site is about one mile east of the I-C Project Segment 1.

Agriculture and Ranching (1860s – 1940s)

By the turn of the twentieth century, 90 percent of Owens Valley's 5,000 residents were involved in agriculture, despite the challenges due to climate, water supply and soil condition. Mining operations in the surrounding areas created a steady and reliable market for local farmers and ranchers. Agricultural activity in locations such as Deep Springs Valley and the Piper Ranch supported emerging mining camps in the Inyo-White Mountain Range and in western Nevada. Along the lower part of the Owens River alluvial fans, non-forage crops were cultivated. Among the early crops wheat and corn dominated. Also included are barley, oats, and potatoes. Later, commercial fruit production was in demand, particularly apples and pears.

The start of construction of the Los Angeles Aqueduct in 1907 did not immediately affect agriculture in the Owens Valley. For the next two decades, the businesses of farmers and ranchers were effectively undermined by the diversion of water away from the Valley. By 1927, most of the Owens Valley agricultural sector was bankrupt.

The cattle industry in California stems back to the Spanish and Mexican eras. Cattle ranching started in the Owens Valley as early as 1861, in tandem with the mining boom and its demand for meat provisions. It was an important focus of the economy from the early 1900s through the 1950s. Sheep ranching also has deep roots in the Owens Valley, with Basque sheepherders arriving to the area in the early 1860s. The sheepherding industry expanded during the Civil War era, with a demand for wool for uniforms, and continued to have a strong presence in Owens Valley through the 1930s.

Early agriculture in the arid Mojave Desert was limited to hay and grain cultivation in river-bottom lands and stock grazing between the San Bernardino Mountains and the desert. After the Mexican-American War, stock caravans from southern California replenished from the steady waters of the Mojave River in route to Arizona. Offering immediate respite from the dry desert, cattle were grazed and mostly watered on the public domain, both in the mountains and in the desert. By the 1850s, use of the Mojave River as public domain led to tensions between ranchers and local Native American groups. Grazing on public lands, especially in the desert, was improved upon at times by the development of a well or the aid of a windmill. Nine ranches were listed as operating in the Mojave Desert by the 1870s. The construction of Southern Pacific Railroad (ca. 1876) provided a distant cattle market for those ranchers who stuck out the harsh desert environment.

Homesteading and Settlement (1862 – 1970s)

The homesteading and settlement theme is directly associated with the periods and events in history described in the agriculture and ranching theme above. For detailed information regarding Native American communities, refer to Section 3.7.11, Ethnographic Setting.

Spanish and Mexican era settlements were situated in the coastal regions of California. Before large-scale mining endeavors, non-native residential communities had not existed before in the Owens Valley and Mojave Desert regions. First to be erected were "boom town" settlements, close to the mining operation. Next to spring up were the merchants and service industry, filling more permanent community needs. With time, travel routes and military outposts were added. Early homestead communities settled the Owens Valley during the 1880s.

Beginning with the Homestead Act of 1862, formal settlement and ownership of land owned by the federal government in the western United States was made possible. The suite of homestead laws was reinterpreted and modified over time allowing homesteaders more economic diversification and a shift to ranching. Consequently, larger tracts of land were being acquired even before the Desert Land Act of 1877 which increased the number of acres settlers could acquire and eliminated the requirement for homesteaders to live on the land.

Seeking clear and dry desert air, former WWI veterans and others combatting lung ailments settled in the Mojave Desert creating a population boom in the early 1900s. Reasonably, the expansion between 1908 and 1930 coincided with new automobile technology. During the years of the Great Depression, farmers from the Dust Bowl areas of Oklahoma and Arkansas and other economic refugees from the east traveling along Route 66 sought better lives in California. Homesteading in the Mojave Desert was expanded again through the late twentieth century with the Small Tract Act of 1938. However, the Homestead Act was repealed in 1976.

Bishop and Big Pine were important early towns in the Owens Valley. Several towns developed around Bishop by 1890 including Warm Springs, Sunland, and Poleta. Incorporated in 1903, Bishop was the largest town in the Valley, naturally becoming the seat of commerce for the area.

Recreation (1890 – 1970s)

Improved transportation routes, particularly the paving of Route 66, allowed more access to recreation areas in both the Owens Valley and Mojave Desert regions.

Early recreation developed in the Owen Valley around the scenic, natural beauty of the area. Local activities included hunting, fishing, mountaineering, swimming, ice-skating in earthen canals and visits to geothermal hot springs or the Inyo National Forest established in 1907. In 1904, a pack trail was opened from Lone Pine serving a long history of pack trains in the Valley including those of Remi Nadeau and the Twenty-Mule Team. With the Roaring Twenties came an upswing in the development of tourist resorts and lodges in the Owens Valley Area. For example, the Keough Hot Springs opened as a health and leisure resort in 1919. The Owens Valley was backdrop to hundreds of western film productions since the 1920s. Ski lifts in Mammoth opened in 1955. By the 1970s, revenue from tourism doubled that of ranching, mining, and logging combined.

Recreational tourism, popular in the 1920s, developed later in the southern portion of the API. The first catalyst for tourism in the Mojave Desert was the creation of the Death Valley National Monument in 1933. The presidential order preserved nearly two million acres, providing a destination for tourism to the Mojave Desert area. Recreation activities that followed included hot spring resorts, rock hounding, visiting old mining sites and ghost towns (such as the Calico Ghost Town centered on the Silver King mine), and during the post WWII era, off-road recreational vehicles.

3.6.1.3. Approach to Resource Identification and Defining Area of Impact

This section describes the CEQA study area for cultural resources and area of impact for cultural resources. It also describes cultural resources types and summarizes the various efforts to identify resources that might be older than 50 years and historically important enough for listing in the CRHR.

Resource Types

Historical Resources

Under state historic preservation law (see Section 3.6.2), historical resources must be at least 50 years old to have sufficient historical importance to merit consideration of eligibility for listing in the CRHR. Historical resources can include precontact archaeological resources, historic era archaeological resources, and historic era-built environment resources.

- **Precontact:** These resources are associated with the human occupation and use of California prior to prolonged European contact. In California, the precontact period began over 12,000 years ago and extended through the eighteenth century until 1769, when the first Europeans settled in California.
- **Historic:** Historic-period resources, both archaeological and architectural, are associated with Euro-American exploration and settlement of an area and the beginning of a written historical record. This period can be further divided into three periods in California: Spanish Period (1769 - 1821), Mexican Period (1821 - 1848), and American Period (1848 - present).
- **Multicomponent:** Resources that include components from more than one time period. This usually indicates resources with both precontact and historic period components but could also include multiple precontact components or multiple historic components.

Historical resources may be further classified as buildings, sites, districts, structures, or objects – sharing definitions originally developed for federal jurisdictions (NPS, 1995; Cal. Code Regs., tit. 14, § 4852).

- **Building:** A resource, such as a house, barn, church, or hotel, created principally to shelter or assist in carrying out any form of human activity. It may also refer to a historically and functionally related unit, such as a courthouse and jail or a house and barn.
- **Structure:** Made for functional purposes other than creating human shelter. Examples include bridges, roads, fences, canals, and transmission towers.
- **Object:** Primarily artistic in nature or relatively small in scale and simply constructed. They can be movable; however, they are associated with a specific setting or environment. Examples include boundary markers, mileposts, and sculptures.
- **Site:** The location of a significant event, a precontact or historic occupation or activity, or a building or structure, whether standing, ruined, or vanished, where the location itself possesses historic, cultural, or archeological value regardless of the value of any existing structure. Examples include trails, designed landscapes, battlefields, habitation sites, Native American ceremonial areas, petroglyphs, and pictographs.
- **District:** A district contains more than one resource that are related historically, by plan, by development or by function. It can include any combination of buildings, structures, sites, or objects. There are two types of districts: contiguous, where all of the resources are physically adjacent to each other, and discontiguous, where they are separated by areas that do not contribute to the significance of the district. Discontiguous districts are related to each other historically, culturally, or architecturally. A district may be considered eligible even if all of the components are not individually eligible, provided that the grouping achieves significance as a whole within its historic context. Examples include irrigation systems, residential areas, rural villages, and transportation networks.

If a building, structure, or object has lost any of its basic structural elements, it is considered a "ruin" and is categorized as a site for the purposes of this analysis.

Tribal Cultural Resources

Tribal cultural resources (TCRs) include sites, features, places, cultural landscapes, and sacred places or objects that have cultural value or significance to a California Native American Tribe (Public Resources Code [PRC] § 21074). These resources are the focus of EIR Section 3.7. Examples of TCRs include locations associated with traditional beliefs of Native American groups about their origin, cultural history, or the nature of the world; traditional cultural practices such as plant gathering; or locations where Native American religious practitioners have traditionally gone and are known or thought to currently go to perform ceremonial activities per traditional cultural rules of practice. Types of TCRs that are relevant to this discussion of the Proposed Project are the following:

- **Sacred Places/Sites** are identified by a Native American tribe as sacred because of its religious significance to, or ceremonial use by, a tribe.
- **Cultural Landscapes** consist of geographic areas, including both natural and cultural resources, associated with a historic event, activity or person. Landscapes can be spaces rather than things that can be owned. These spaces or places are given meaning through their association with local and regional histories, cultural identities, beliefs, and behaviors. Landscapes can include horizons, unmarked spiritual corridors, and places of connection between the earth's surface and the upper and lower realms. Cultural landscapes that are geographically defined in terms of size and scope can be determined eligible and nominated for inclusion on the CRHR as either sites or districts. (PRC § 21074(b).) As such, these landscapes can be contiguous or noncontiguous.

Area of Impact

The geographic study area for cultural resources, referred to here as the "CEQA Area of Impact" consists of the geographic area or areas within which the Proposed Project may directly or indirectly cause changes in the significance of historical resources, if such resources exist. The definition of the CEQA Area of Impact is influenced by the scale and nature of the Proposed Project and may be different for different kinds of cultural resource impacts caused by the Proposed Project. In addition, the CEQA Area of Impact may be buffered for purposes of cultural resource inventory to facilitate the identification of resources that may be located in proximity to the API and indirectly affected by the Proposed Project or to allow the redesign of Proposed Project components to avoid direct impacts to cultural resources. The CEQA Area of Impact is referred to as the API, defined above. The CEQA Area of Impact (API) includes both a CEQA Area of Direct Impacts and a CEQA Area of Indirect Impacts, defined as follows:

- The **Direct API** is the geographic area within which the Proposed Project may directly cause physical damage or destruction to the characteristics of the resource that qualifies it for inclusion in the CRHR. It consists of a 75-foot (23-m) buffer along the existing stretch of the transmission corridor (i.e., SCE ROW), which includes an approximately 150- foot (46-m)-wide swath for 331 miles (533 km). The API further includes an approximately 50-foot (15.2-m) buffer around ancillary areas needed during construction and for staging, equipment laydown, materials storage, vehicle parking, etc., as well as a 25-foot (7.6-m) corridor applied to all access roads needed for project construction. This area totals 6,468.4 acres. For the purposes of this Proposed Project the direct API is the same as the area referred to by BLM as the direct APE.
- The **Indirect API** is the geographic area within which the Proposed Project may change the setting of a resource, when the setting alters the characteristics of the resource that qualifies it for inclusion in the CRHR. These limits are based upon the distance from which Proposed Project components can be seen. Resources closer to the API are considered to have greater indirect effects. The CEQA Indirect API is the same as the BLM APE for visual effects. The Indirect API consists of a one-mile (1.6 km) radius on the portions of the Proposed Project where new subtransmission structures will be installed, and where existing structures will be upgraded. In addition, it consists of a one-mile buffer to the outer edges of the 150-foot-wide corridor that brackets the existing and proposed subtransmission lines, as well as

the Independence Telecom Tie (ITT), resulting in a continuous corridor approximately two miles wide. No construction material yards, helicopter landing zones, or other ancillary APIs offset from the corridor were buffered in the creation of the Indirect API for any segment.

3.6.1.4. Approach to Archaeological Resource Identification

Resource identification for archaeological resources includes the following studies: literature and record searches, archival research, a pedestrian survey, a buried resource sensitivity and geoarchaeological analysis, a visual impact analysis, Tribal consultation (discussed in Section 3.7 of this EIR) and two ethnographic desktop reviews. Each of these is summarized below. While these reports were written for the needs of both the NEPA and CEQA lead agencies, only the conclusions relevant to the CEQA lead agency are presented here.

Record Search

The purpose of a record search is to understand the kind of resources that are present in the survey area so that the field crew are prepared to record them. In addition, the record search identifies previously recorded resources in the survey area which allows the survey crew to be certain to revisit them and record their current condition. The record search also identifies resources in the Direct API and the Indirect API. The resources in the Indirect API are analyzed for potential impacts in the visual analysis below and the built environment visual analysis. The record search results include both archaeological and built environment resources. However, only archaeological resources are presented here. See Section 3.6.1.5. (Built Environment Resources Identified) for the results of the built environment record search.

Resource records and previous studies located within a one-mile (1.6 km) radius of the Direct API were reviewed in 2018. This area is congruent with the Visual APE/Indirect API. Records were primarily obtained from the California Historical Resources Information System (CHRIS) centers and supplemented with information from the BLM, SCE, the BLM Government Land Office (GLO) website, other related internet sources, and local and regional libraries and museums in an effort to obtain all available information on precontact and historic resources within the records search area. The specific CHRIS centers consulted include: the Southern San Joaquin Valley Information Center (SSJVIC), located at California State University, Bakersfield; the South Central Coastal Information Center (SCCIC), located at California State University, Fullerton; and the Eastern Information Center (EIC), located at University of California Riverside. An additional record search was conducted after SCE made changes to the Proposed Project footprint in April and October of 2020.

Previously Recorded Archaeological Resources Within the Direct API

The records search found that 523 cultural resource studies have been conducted in the record search area. Cultural resources studies are considered current only within five years of when the field work was conducted. This is because, as time passes, more and more resources become 50 years old or older, for purposes of determining historic register eligibility. In addition, professional standards regarding survey methods and technology for recording resource locations have changed and improved over time. Therefore, it is important to know both how much of the API has been surveyed previously, and also how much has been surveyed to current standards. Approximately 1,115 acres, or 13 percent of the Direct API, has been subject to survey prior to 2021, when the surveys for the current Proposed Project were conducted. This means that very little was known about the resources present in the API prior to the surveys completed for the I-C Project.

In total, 959 previously recorded cultural resources are present within or intersect the Direct API. Of these, 564 are archaeological and 395 are built environment resources. The built environment resources are discussed below in Section 3.6.1.6 and are not considered further here. Of these resources 263 are historic, 102 are precontact, and 199 are multicomponent resources. The temporal affiliation of one cultural resource is unknown. The majority of the previously recorded cultural resources within the Direct API were

recorded more than 5 years before the time of the search (set at 2019). The previously identified resources include precontact lithic procurement and quarry sites, lithic and ceramic artifact scatters, village sites, house ring complexes, trails, rock shelters, rock features, pictographs, and petroglyphs. Types of historic-era buildings previously recorded within the Direct API include commercial, farm/ranch, and industrial buildings. Previously recorded historic-era archaeological sites within the Direct API are characterized by various feature types including privies, dumps, refuse scatters, building foundations, and linear features.

Within the Direct API, two cultural resources are listed in the National Register of Historic Places (NRHP), the Manzanar War Relocation Center National Historic Site (NRHP no. 76000484). and the Patsiata Tübiji Nüümü-na Awaedu Ananisudüheina (Patsiata Historic District; NRHP no. 100009210). Listing on the NRHP also makes these resources eligible to CRHR. The Manzanar War Relocation Center is also a California State Historical Landmark (CRHR no. 850).

Of the 123 previously recorded cultural resources within the Direct API that have been determined eligible or recommended eligible by federal agencies for the NRHP, or by state agencies for the CRHR, 22 are historic, 35 are precontact, and 66 are multicomponent.

Previously Recorded Archaeological Resources Within the Indirect API

In total, 726 cultural resource studies have been previously conducted within the Indirect API, defined as a 1-mile (1.6-km) buffer around the Direct API. Most of these studies were conducted more than 5 years before the time of the search (in 2019).

The previously recorded resources within the Indirect API consist of 9 districts, 21 elements of a district, 2,007 archaeological sites, 177 built environment resources, 576 isolated finds, and 599 resources for which no information was available. In total, 3,389 previously recorded cultural resources are present within 1 mile (1.6 km) of the Direct API. Of the 3,389 previously recorded cultural resources present within the Indirect API, 1,905 are precontact, 1,170 are historic, and 242 are considered multicomponent sites, as they include both historic-era and precontact components. The temporal affiliation for 72 resources was not identified.

NRHP/CRHR eligibility determined by federal or state agencies is unknown for 1,618 resources, approximately 48 percent of the resources within the Indirect API. Within the Indirect API, of the 1,771 resources, 30 were identified as either listed in the NRHP/CRHR and 61 were defined as being eligible for the NRHP. Of the 61 resources described as eligible for the NRHP, 56 are listed on the CRHR. Of the remaining 1,680 previously recorded resources, 1,397 are listed as ineligible and 283 are unevaluated for the NRHP/CRHR. Of the NRHP ineligible resources, 1,134 are listed as ineligible and 263 are either unevaluated or unknown for the CRHR. Of the 283 NRHP unevaluated resources, 196 are unevaluated and 87 are unknown for the CRHR.

Previously Recorded Historic Districts that Overlap with the Direct and Indirect API

The districts that overlap with the Direct and Indirect API include Fossil Falls Archaeological District (P-14-006028; NRHP no. 80004492 and CRHR no. N888), the Rand Historic District (P-15-007069), and the Patsiata Tübiji Nüümü-na Awaedu Ananisudüheina (Patsiata Historic District; NRHP no. 100009210).

Fossil Falls Archaeological District (P-14-006028). The District is in the Rose Valley, just north of Little Lake. Contributing resources for the district include village sites, rock shelters, temporary campsites, milling stations, and lithic concentrations. This district was identified in 1976 and listed in the NRHP in 1980. The district is considered significant under NRHP and CRHR Criterion D/4 for its data potential ranging from 10,000 BP to at least 750 BP. This is due to the area containing rare subsurface deposits representing major occupation areas dated to the Pinto or Little Lake periods, dated 5,000 to 2700 BP. There are 14 resources in the Direct API that are contributors to this district.

Rand Historic District. The Rand Historic District is a historically rich gold, silver, and tungsten mining region in the northern Mojave Desert of California, located in Kern and San Bernardino counties. The district initially focused on gold, with the discovery of the Yellow Aster mine in Randsburg in 1895. Later, significant tungsten was found in Atolia, and a major silver discovery occurred near Red Mountain in 1919. The Randsburg Railway was built to serve the district's mines, operating for 35 years before ceasing in 1933 due to the Great Depression and mining decline. The district is recognized as a California State Historical Landmark #938 and is home to the Rand Historic Mining Complex (RHMC), a collection of sites including the Kelly Silver Mine, the Yellow Aster Mine, and the Marigold Mine. There are 17 resources in the Direct API are contributors to this district.

Patsiata Tübiji Nüümü-na Awaedu Ananisudüheina (Patsiata Historic District). This district was added to the NRHP on March 3, 2025. Encompassing approximately 186 square miles in Inyo County's southern Owens Valley, the district includes Patsiata (Owens Lake) and the many shorelines formed as lake levels fluctuated over the past 14,000 years. The traditional cultural property is associated with the creation of the world and the lifeways and history of the Nüümü and Newe (Owens Valley Paiute and Western Shoshone Indigenous People). A unique cultural landscape that includes many features related to creation and to the continued maintenance and restoration of balance in the world, the district is also a physical, place-based manifestation of the United States' genocidal policies toward the Indigenous inhabitants of the American West and the colonization of Indigenous homelands in what became the United States of America. The district's significance includes its focus for passing on culture and history to younger generations, and for sharing ecologically relevant traditional knowledge with agencies responsible for land stewardship (OHP, 2022).

Bishop Creek Hydroelectric System Historic District is considered significant for its role in the expansion of hydroelectric power generation technology, in the development of eastern California, and in the development of long-distance electrical power transmission and distribution. The hydroelectric system consists of five sets of independent electrical power generating plants, established at various elevations along the south, middle, and north forks of Bishop Creek on the eastern slopes of the Sierra Nevada Mountains, Inyo County (Taylor, 1994).

Pedestrian Survey

Pedestrian surveys of the Direct API were conducted by SCE's consultant team to inventory archaeological resources. An approximately 12,244-acre area was surveyed for archaeological resources. The area encompasses the majority of the Direct API, as well as the size of the resources that were identified and continue outside of the API. The archaeological inventory was conducted from February 2018 to January 2019, in October and November 2020, October 2023, and August 2024. A total of 566 archaeological sites are present in the Direct API.

Table 3.6-1 summarizes the number of archaeological resources identified in the pedestrian survey within each Proposed Project segment. This table shows that most resources are present in Segment 1, followed by Segment 2. In particular, Segment 1 has a large amount of precontact and multicomponent resources which are of interest to local tribes, as discussed in Section 3.7 of this EIR. Segments 2, 3N, and 3S are dominated by historic era resources, and have a much lower site density. Details on these resources are presented in Tables Ap.5-1 through Ap.5-4 in EIR Appendix 5A.

Table 3.6-1. Archaeological Resources in the Direct API by Project Segment and Resource Age

	Resource Age				
Segment	Precontact	Historic	Multicomponent	Undetermined	Total Sites
1	86	104	71	1	362
2	0	102	1	0	103

	Resource Age				
Segment	Precontact	Historic	Multicomponent	Undetermined	Total Sites
3N	6	32	3	0	41
3S	10	46	4	0	60
Total	**102**	**284**	**179**	**1**	**566**

Geoarchaeology and Buried Site Sensitivity

As part of the cultural resources inventory, a geoarchaeological study was conducted to identify sections of the Proposed Project that are most likely to have buried cultural resources. Archaeological monitoring would be required during construction in order to avoid inadvertent impacts to these hidden resources. In order to evaluate the potential for buried archaeological sites within the Direct API, aerial imagery, Natural Resources Conservation Service (NRCS) soils data, and digital geologic data for the API were reviewed. These data were incorporated into a GIS-based digital sensitivity model indicating areas of the Direct API with high, moderate-high, moderate, and low potential for buried cultural deposits.

The results of the sensitivity model show that most of the high potential areas identified within the Direct API are located on low slopes near to water sources. Areas deemed as having high potential consist of stream terraces and floodplains along the Owens and Mojave Rivers, playa rims, distal fan surfaces, and other associated lacustrine landforms.

For precontact archaeological sites (or the precontact components of multicomponent sites), the potential for buried deposits to be present was a factor that was considered when evaluating each resource, and in determining whether test excavation might be warranted. In general, eligibility recommendations for sites with low potential for buried deposits can be made based on surface indicators alone, since, in the presumed absence of a buried component, surface documentation likely provides a relatively complete picture of site characteristics. However, sites with moderate to high sensitivity for a buried component might require further investigation, such as archaeological testing or archaeological monitoring during construction.

The youngest sediments in the Direct API as identified through geologic mapping are older than the oldest historic-era archaeological resources, which are no more than ca. 150 years old at the very oldest. Additionally, most of the historic-era sites within the Direct API are surficial refuse scatters resulting from unauthorized dumping; these typically do not have a subsurface component. For these reasons, modeled geoarchaeological sensitivity generally is not applicable to the evaluation of historic-era archaeological sites in this region.

Visual Impact Assessment

A visual impact assessment was done in order to identify indirect or visual impacts to archaeological resources in the Direct API and Indirect API that are historically important because of their association with important events (Criterion 1), important people (Criterion 2), or for their design/artistic characteristics (Criterion 3). These resources tend to be particularly sensitive to impacts to their integrity of setting, feeling, and association. Most archaeological resources are important for their data potential (Criterion 4) which tends to be gathered with scientific or historical research. As such, these archaeological resources are not subject to visual impacts. However, some resource types are subject to those impacts, such as precontact petroglyphs, pictographs, and cupules. Petroglyphs are images created by removing part of a rock surface by incising, picking, carving, or abrading, as a form of rock art. Pictographs are rock paintings created by applying pigment (mixed with a binding agent) directly to the rock's surface. In some cases, rock art is categorized as both petroglyph and pictograph. Cupules are artificially made depressions on rock surfaces that resemble the shape of an inverse spherical cap or dome. They are made by direct percussion with hand-held hammer-stones, on vertical, sloping or horizontal rock surfaces, possibly having

a ceremonial or non-utilitarian function. These resource types are historically important for their association with important ceremonial events (Criterion 1) and for their artistic value (Criterion 3). Historic-era resources associated with a district are subject to visual impacts due to the importance of setting, feeling, and association in their eligibility status. Identification of these sites as having higher potential for visual impacts is not meant to imply that they will automatically suffer adverse effects, but rather, the intention is to stress that further discussion regarding the association of sites with the broader context of the district may be required.

The results of the record search and the pedestrian survey, as described above, were used to identify these resource types in both the Direct API and Indirect API that were previously identified or newly identified. In total, 93 sites were identified by SCE's consultant for inclusion in the visual impact analysis consisting of 47 sites in the Indirect API and 46 sites in the Direct API. The GIS analysis shows that new subtransmission structures would not be visible from 3 of the 93 sites. The remaining 90 sites have the potential for visual impacts that could result in impacts to setting, feeling and association. Essentially this means that these resources were built in precontact times, and these industrial structures intrude into a previously non-industrial landscape. Sites with views of poles consist of 49 precontact sites, 24 historic-era sites, 15 multicomponent sites, and two districts.

This visual assessment included only archaeological resources. Built resources are addressed in Section 3.6.1.5.

Archaeological Testing to Support Eligibility Determinations

In order to determine if an archaeological site is eligible for the CRHR, the physical extent of the site both horizontally and vertically must be determined; cultural affiliation, site function and age must be identified; and the preservation status of archaeological deposits must be determined. Some of this information can be gathered during pedestrian surveys where only the ground surface is examined. If this information cannot be collected during surveys, other methods must be used. For historic era resources, this additional information gathering phase can be conducted with in depth, resource specific historical research. For precontact resources and a small subset of historic era archaeological resources, archaeological testing in the form of limited excavation should be conducted to aid in eligibility recommendations.

Sixty-eight archaeological precontact sites, or precontact components of multicomponent sites, were subjected to excavation for the purpose of informing CRHR eligibility recommendations, specifically their eligibility under Criterion 4 (research potential). These resources could not be evaluated using surface information collected during the survey alone, therefore archaeological testing was required. Most of these sites are small lithic scatters dominated by obsidian artifacts. The fieldwork consisted of surface collection of certain categories of artifacts and very limited test excavation within the Direct API and a 30-meter (m) radius. Because of the limited nature of the testing, which usually would include excavation units spread across the entire site, comprehensive CRHR eligibility evaluations for each site were not always possible.

Excavation at 68 sites resulted in enough artifacts and other data for SCE's consultant team to recommend these sites to be eligible for the CRHR. Excavation at 26 sites resulted in no subsurface artifacts, making them recommended ineligible for the CRHR. Of the 68 sites tested, SCE's consultant team recommended 12 eligible and 56 sites ineligible for the CRHR. SCE's consultant team states that "It is important to stress that most eligibility recommendations apply only to the investigated portions of the sites within the IC Project's ADI, and overall site eligibility may differ (i.e., in some cases entire sites were evaluated; in others, portions outside the project ADI remain unevaluated)" (Hesse, et al. 2022:MS, i).

Details on all resources are presented in Tables Ap.5-1 through Ap.5-4 in EIR Appendix 5A.

3.6.1.5. Built Environment Resources Identified

For the purposes of this EIR, the historic-era built environment was defined to include any building, structure, built object, property improvement; human-made road or circulation route; and human-made park, open space, or other scenic location which could be regarded as a designed cultural landscape.

In advance of the field survey effort, research was conducted to identify all built environment cultural resources in the in the Proposed Project Direct API and Indirect API. Eighty-five previously recorded resources were identified through a CHRIS record search. The locations of additional built environment resources were identified using current aerial imagery (obtained from Google Earth Professional), review of historic aerial imagery ca. 1974-1975 (obtained from the United States Geological Survey Earth Explorer database), and Inyo County, Kern County, and San Bernardino County Assessor's Office Property Information System along with other real estate databases. This same information was used to determine if these built environment resources were 50 years old or older and therefore potentially historical resources which should be analyzed for the Proposed Project.

A built environment field survey was conducted in California in March, July, and August 2019 with a second round of fieldwork in November of 2020. Table 3.6-2 shows the distribution by project segment of the 260 built environment resources in the Indirect API and 405 resources in the Direct API.

Table 3.6-2. Built Environment Resources in the Direct API by Proposed Project Segment

Segment	# of Resources in Direct API	# of Resources in Indirect API
1	160	144
2	78	26
3N	52	22
3S	115	68
Total	**405**	**260**

Note that some resources span multiple segments

3.6.1.6. Archaeological Resources in the Direct and Indirect API

There are 282 precontact archaeological resources or precontact components of multicomponent resources, 463 historic archaeological resources or historical components of multicomponent resources, and one unknown resource, potentially subject to impacts by the Proposed Project in the Direct API.

A total of 38 archaeological sites are present in the Indirect API. This analysis focuses on both precontact and historical resources that are sensitive to visual impacts. Given the large number of archaeological resources in the Direct and Indirect API, the resources are described by type. A definition of these resource types is provided below.

Table 3.6-3 summarizes the number of resources in the Direct API by Proposed Project segment and resource type. The majority of the resources are lithic concentrations (47%), followed by multi-class artifact concentrations and residential bases.

Table 3.6-3. Number of Precontact Archaeological Resources in the Direct API by Proposed Project Segment and Resource Type

	Bedrock Milling Station	Burial Area	Ceramic Concentration	Habitation Area	Lithic Concentration	Multi-Class Artifact Concentration	Quarry	Residential Base	Rock Feature*	Rock Art	Temporary Camp	Trail	Total
Segment 1	17	2	0	7	120	58	2	28	1	1	21	1	258
Segment 2	1	0	0	1	0	0	0	0	0	0	0	0	1
Segment 3N	0	0	1	0	5	1	0	1	0	0	1	0	9
Segment 3S	0	0	0	0	7	0	3	0	1	0	3	0	14
Total	**18**	**2**	**1**	**8**	**132**	**59**	**5**	**29**	**2**	**1**	**25**	**1**	**282**

* One rock feature resource of undetermined age is not included on this table. One of the 282 precontact sites is assigned two resource types (Lithic concentration and Rock feature), so the total number of resources by type is 282.

Precontact Archaeological Resources – Resource Types

A set of 11 resource types is considered and evaluated: bedrock milling station burial area, ceramic concentration, habitation area, lithic concentration, multi-class artifact concentration, quarry, residential base, rock art, temporary camp, and trail. A brief definition of each resource type is provided below.

Bedrock Milling Stations. A bedrock milling feature is a "non-portable bedrock outcrop or boulder with surfaces and/or depressions ground into it for purposes of milling" (OHP, 1995). These milling surfaces must have been intentionally manufactured and show evidence of grinding such as striations, pecking, smoothing, or polish within the surface. These features are grouped into bedrock mortars, an intentionally manufactured circular or oblong bowl-shaped depression, and bedrock slicks, where flat or shallow surfaces show evidence of grinding, usually as polish. An additional type is the cupule, a depression similar in form to a mortar but too small to have been used for grinding plant foods that may have been used for cracking acorn shells or grinding pigment, medicine, or herbs, but are usually considered features not related to subsistence. While the term "bedrock" is used for these features, they also occur in large boulders that are on or partially buried in the ground surface (Whitaker et al., 2021).

Resources categorized as bedrock milling stations are those that contain bedrock mortars or slicks. Bedrock milling stations may contain lithic debitage or small amounts of other materials associated with the milling features themselves, but if there is habitation debris or features and evidence of occupation at the site, it would be considered a residential base or a habitation area. These resources were used for processing vegetal resources such as acorns and other seeds. Milling station features often have associated artifacts such as pestles and handstones (manos). Bedrock mortar technology and bedrock slick technology are very similar but differ in the types of grains and other foods that they are used to process. Mortars can easily accommodate milling of acorns and roots, whereas slicks were used to process smaller grains and materials such as grass seeds and pine nuts. A total of 18 bedrock milling stations were identified in the Direct API.

Burial Areas. Burial areas are defined as a broad term encompassing locations where the dead are prepared for burial or cremation as well as where the remains of the dead are placed (Potter and Boland 1992). In both the Owens Valley and the Mojave Desert regions, indigenous burial places are commonly represented by cairns or secondary internments of cremated human remains. These features may include artifacts such as shell beads, ornaments, ceramic fragments, and fire-affected rock. Burials in cairns continued into the post-contact period, evidenced by glass beads found in some burial cairns (Wilke, 1978). Burials were also conducted as full body interments in both the Owens Valley and the Mojave Desert and

include extended and flexed positions. In some cases, cairns were built over the burial locations (Busby et al., 1979; Norwood et al., 1980; Stickel et al., 1980; Warren et al., 1980).

A particular form of cremation burial cairns located in dune sands areas of the southern Owens Valley has been described by Haverstock (SCE, 2022) as the Southern Owens Valley Mortuary Complex. These sites consist of a large number of mortuary cairns concentrated in areas of deflated dunes located on riverine terraces or lake high strands. These cairns include ceramic sherds, lithic tools, and charcoal and ash, along with fragments of burned and calcined human bone. Southern Owens Valley Mortuary Complex burial areas may also include other types of burials and mortuary features that date from approximately 1,000 to 150 years BP. This type of burial area, with its arrangement of cairns, is unique to the Owens Valley (Wesson et al., 2021:8.95-8.96). Burial areas are commonly revisited by descendants and others during remembrance ceremonies and continue to be cared for by descendant communities. Two burial areas were identified in the Direct API, both in Segment 1.

Ceramic Concentrations. These resources consist entirely of a cluster of pottery sherds. Ceramic concentrations were specifically defined by individual BLM field office archaeologists and definitions of a ceramic concentration could change depending on which field office has jurisdiction. These may contain as few as 3 sherds within a 10 x 10 m area with seven artifacts of other types or 10 sherds without other artifacts in Segments 1 and 2, or as few as 3 sherds and 1 other artifact or 4 sherds within a 15-m radius in Segments 3N and 3S. Pottery is associated with the late precontact and early historic period, with the most common ware, Owens Valley Brown Ware, being a temporal marker of the Marana period, post-dating approximately 700 years BP. One ceramic concentration was identified in the Direct API, in Segment 3N.

Habitation Areas. Habitation areas include villages and large, extensively used residential bases. All artifacts used by a group are likely to be represented at these sites, along with middens and other subsistence refuse, remains of dwellings, storage features, and cooking and processing features. These sites also are likely to contain ceremonial places, such as dance areas, and may contain human burials. They represent long term and persistent occupation locales, including virtually permanent and year-round occupation. The more recent of these sites may have ethnographically attested names and may still be used and venerated by the descendant communities. A total of 8 habitation areas were identified in the Direct API: seven in Segment 1 and one in Segment 2.

Residential Bases. Residential bases or seasonally and periodically occupied camps are sites that represent locations where people lived during a particular time of the year or during particular activities. These sites are generally larger than temporary camps and are characterized by larger assemblages and more evidence of habitation and may be associated with gathering or processing activities. These sites may include features such as hearths, earth ovens, concentrations of fire-affected rock, cleared circles and rock rings, a small number of house structures, or middens. Artifacts at residential bases may include large amounts of lithic debitage, processed faunal remains, milling tools, and pottery in later periods. Residential bases are smaller and more temporary than village sites and the groups that used them usually were only a segment of the larger village population. Sites with habitation indicators and processing tools or features that are relatively small and do not contain extensive middens or simultaneous occupation by large groups will be categorized as residential bases while larger and more established sites will be categorized as habitation areas and sites without other features or more ephemeral evidence of habitation will be categorized as temporary camps. A total of 29 residential bases were identified in the Direct API: 28 are in Segment 1 and one is in Segment 3N.

Lithic Concentrations. The most common precontact archaeological resource encountered in the Proposed Project API and the surrounding region is the lithic concentration. The process of manufacturing flaked stone tools is reductive, with a larger piece of toolstone material referred to as a core being subjected to impacts and pressure that removes flakes, eventually resulting in a finished tool, or with the flakes themselves removed from the core with an intention to be used as implements such as blades or scrapers. Flakes removed during this process are collectively referred to as debitage, and even flakes that are waste

from making another tool may be used as expedient tools for cutting and scraping. When flakes represent one event of stone tool manufacture, the distribution is considered a single reduction locus (Cain, 2012; Chartkoff, 1995).

Lithic concentrations may be part of larger sites with diverse assemblages, in association with other artifacts, or compose the only constituents of a site. However, this analytical category will only be used for sites where the assemblage is composed entirely of flaked stone tools and debitage without any other artifacts, associated features, or evidence of occupation. Lithic concentrations containing a single material and different types of flakes confined to an area no more than 5 m in diameter will be considered as representing single reduction loci, unless field observations suggest otherwise (Behm 1983). Medium-sized lithic concentrations may represent multiple single reduction loci, secondary discard behaviors, palimpsest sites, or the post depositional movement of artifacts. Lithic concentrations may also be very large, covering multiple acres (Slaughter et al., 1994). The largest of these are referred to as lithic landscapes, defined as areas where the artifact density is within the regional site thresholds and extends so far that the boundaries would be too large to be managed by land-holding agencies as a single site. These are then broken down into multiple sites encompassing areas where other artifact types, features, or deposits are present (and are thus not considered lithic concentrations here) or where the debitage density is higher than 15 artifacts in a 10 by 10-m area (Wesson et al., 2021). If a lithic concentration contains raw or assayed toolstone material, it will be categorized as a quarry site.

Within the Owens Valley, these lithic debitage assemblages are almost exclusively of obsidian, while those in the Mojave Desert show a wider variety of toolstone materials in addition to obsidian, including quartzites, cryptocrystalline silicates (CCS) such as chert and calcedony, and fine-grained volcanics (FGV) such as basalt and rhyolite (Hintzman and Garfinkel, 2011; Wilke and Schroth, 1989). A total of 132 lithic concentrations were identified in the Direct API: 120 in Segment 1.

Multi-Class Artifact Concentrations. This category represents sites that contain more than one type of artifact, generally flaked stone tools and debitage along with some combination of milling equipment, pottery, bone tools, or other artifacts. In some cases, these sites can contain subsistence and resource processing remains and form middens from the discarded refuse of those activities. These sites may represent a palimpsest of multiple uses across time, but more often are the result of short-term presence of small groups of people engaging in multiple activities, unlike lithic concentrations that may represent only a single activity. The precontact activities at these sites may be spatially distinct with specific areas for different tasks, leading to different artifact types being present but not intermingled. The distinction between multi-class artifact concentrations and temporary camps can be difficult. In this analysis, differentiating between the two relies on the absence of any habitation debris or features at this category of site. Precontact components that primarily consist of ceramics with fewer than 10 lithic artifacts will not be included in the multi-class artifact concentration category and will be treated as ceramic concentrations to better evaluate these small sites. A total of 59 multi-class artifact concentrations were identified in the Direct API: 58 in Segment 1 and one in Segment 3N.

Quarries. Quarry sites are places where people obtained the naturally occurring raw stone for flaked or groundstone tools, clays for ceramics, and other minerals for determined eligible, paints, and decorative artifacts. Although the term quarry may evoke images of excavated areas of mineral collection, this category also encompasses places where mineral resources are obtainable on the surface and were used repeatedly by people. Toolstone quarries for flaked tools often show assayed and discarded cobbles along with hammer stones and primary reduction debitage. These may also show discrete flaking stations or reduction loci where raw material was formed into basic forms for transportation. Groundstone quarries contain in-process or broken artifacts, typically metates. Clay quarries are areas where people dug into clay beds to gather materials and may contain broken sherds or digging implements, along with small amounts of flaking debris. Other types of quarries can be difficult to identify, but areas near the API in the

eastern Mojave show evidence of turquoise quarrying. A total of 5 quarries were identified in the Direct API: 2 in Segment 1 and 3 in Segment 3S.

Rock Features. Precontact rock features include a variety of forms, including alignments, cairns, piles, walls, rings, and cleared areas. Within the API, SCE's consultant identified cairns, rock piles, rock rings, and walls. Rock rings are circular formations of rocks, either in a single level or in a small number of courses, and can represent the edges of cooking features, the base of temporary structures, or the foundations and low walls of permanent dwellings. The latter two types are categorized here as temporary camps, residential bases, or habitation areas rather than as rock features. Cairns are stacks or piles of small to medium-sized rocks that appear to be purposely constructed, rather than piles of waste rock, excavation spoils, or mining tailings. Precontact cairns may represent trail markers, grave or cremains markers, prayer places, or offering areas. Discrete piles of thermally affected rocks represent cleared roasting features, ovens, or basketry cooking stone discards. Small walls or sections of linearly stacked rocks can represent hunting blinds or wind breaks. Rock features are difficult to date, however, as these resources generally do not have temporally diagnostic styles and any artifacts nearby are difficult to positively associate with the construction and use of the resource. This category includes only those sites where the rock feature is the primary or most significant feature of the site rather than those within larger complex sites or where the rock features represent dwellings. One rock feature was identified in the Direct API in Segment 3S.

Rock Art Sites. Rock art sites are areas of exposed rock, usually bedrock outcrops but also boulders, that have had motifs, designs, or figures either incised (petroglyphs) or painted on their surface (pictographs). These areas may be located on vertical surfaces, the ceilings of caves and overhangs, on the tops of outcrops, or on boulders. Rock art often appears in association or nearby to other precontact features or artifacts. Generally, where other cultural constituents are present, the resource will not be categorized as a rock art site. The exceptions are where any other artifacts are limited in number or density and would be considered an isolate without the rock art, or where rock art is associated with artifacts or features that would not otherwise be considered significant. In those cases, the site will be categorized as a rock art site.

The term "rock art" is commonly used today but it is unlikely the creators of the images would have viewed it as "art" in the way 21st century people do. For some types, such as cupules, what is viewed as rock art may result from a creative spiritual process. While rock art alone is often considered significant in its form and aesthetic merit, there may be significant associations between rock art or rock art locations and events or patterns of history or with persons, groups, or mythological beings in the past (Whitley, 2000). Within the Owens Valley and Mojave Desert area, rock art styles may be associated with specific ethnolinguistic groups, or particular social roles within those groups. Rock art locations are also viewed by contemporary Native American groups as places of power and may be used for traditional purposes and prayer (Whitley, 2015). One rock art site was identified in the Direct API, in Segment 1.

Temporary Camps. Temporary camps are sites that a small number of people occupied for a short time, from a single night to limited periodic visits. These sites may include a small number of simple features as well as concentrations of artifacts. Unlike other concentrations of artifacts, temporary camps show evidence of habitation, such as hearths and fire-affected rocks, or have more complex artifact assemblages that are interpreted to represent a short-term occupation. These sites are smaller and less complex than residential bases and periodic camps and do not exhibit features indicative of repeated periodic visits, such as bedrock milling features, but may contain small numbers of portable milling equipment. These sites may be associated with hunting blinds, lithic quarries, and other occasionally used resource areas as well as with trails. Sites lacking indicators of short-term habitation will be categorized as multi-artifact concentrations. If there are short term habitation indicators and additional features such as bedrock milling features, earth ovens, etc., the site will be categorized as a residential base or a habitation area, depending on size and intensity of habitation. A total of 25 temporary camps were identified in the Direct API: 21 in Segment 1, one in Segment 3N, and three in Segment 3S.

Trails. Precontact trails may be difficult to discern depending on the environment and may be linear impressions or lines cleared of rocks or subtle shelves along slopes demonstrating where people traveled. Trails can either be created over time by multiple users following the same route or can be formally constructed. They average 30 cm in width and can be traced for many kilometers, interrupted only by gullies and washes. Trails are usually the shortest and most convenient routes from one point on the landscape to another. Historic-era and modern travel routes often follow or obscure precontact trail routes. In places where trails do not leave much trace, people sometimes erected cairns or deposited pottery sherds may to mark the way. Trail-associated sites or features can include concentrations of ceramics or "pot drops," cleared circles, rock rings, rock clusters, rock cairns, rock alignments, petroglyphs, and geoglyphs.

Trails sites may also be associated with trail shrines/offering areas and temporary camps. When the trail itself is not preserved, its route can sometimes be approximated or inferred by patterns of sites, features, or artifacts likely or known to be associated with the trail. If any sites or features are likely associated with a trail, they will be considered as part of the trail site. One trail was identified in the Direct API, in Segment 1.

3.6.1.7. Historic-Era Resources in the Direct API and the Indirect API

Historic-era Resources – Archaeological and Built Environment Resources

There are 463 historic-era archaeological resources and 395 built environment in the Direct API (see Tables Ap.5-1 through Ap.5-5 in Appendix 5A), and 340 historic-era archaeological resources and 218 built environment resources in the Indirect API/Visual APE. (see Table Ap.5-6 and Table Ap.5-7). Each resource was evaluated for the CRHR individually but also as potential contributors to these districts. The difference between archaeological and built environment resources for the purposes of this Proposed Project is whether the resource is a standing built resource (which will be classified as a built environment resource) or a resource that was once built but is now in ruins (which would be classified as an archaeological resource).

Historic-era resources within the Proposed Project are related to eight basic historic themes: electrical infrastructure, exploration and transportation, homestead/farm/ranch, military, mining, refuse deposit, rock features, and water infrastructure. These themes and resource types are similar but not exactly the same as those used in SCE's consultant's reports.

Historic-era Resources – Resource Themes and Types

Electric and Gas Infrastructure

The energy development theme is composed of resources belonging to the electric power generation and transmission industry.

The steep slopes of the eastern Sierra Nevada provided opportunities for hydroelectric energy production, such as the Bishop Creek Hydroelectric System. Following the completion of the Los Angeles Aqueduct, LADWP took advantage of the water rights, the reservoirs, and the aqueduct itself to build hydroelectric generation plants. Three of these – the Big Pine, Division Creek, and Cottonwood powerplants – are near the Direct API, while another, the Haiwee Power Plant, is also in the Direct API. From 1913 onwards, electric utility providers installed major electric power conveyance systems in the San Bernardino and the Mojave region to expand the power grid and help industrialize burgeoning southern California. Within the Direct API, there are several historic-era electric power conveyance systems. These include the Bishop Creek to San Bernadino Transmission Line (1913), the Los Angeles Department of Water and Power (LADWP) Boulder Dam Transmission Lines (1936), the Boulder Dam to San Bernadino Sub-Transmission Line (1937), and the Southern California Edison (SCE) First, Second, and Third Boulder Dam Transmission Lines (1941).

This category encompasses all archaeological and built environment resources associated with the development and construction of features to generate, transmit, and distribute electrical power surrounding

the Direct and Indirect API. A typical energy development resource or feature could vary from a small area, such as substation; to a linear feature, such as a penstock, or transmission line; to a series of features such as dams within hydroelectric projects. They may have an associated sheet midden of trash and industrial debris. Hydroelectric penstocks are generally at or near ground level, while transmission lines are suspended above ground along a series of structures. These linear features often are associated with parallel dirt access roads.

Archaeological Resource Types

- Other: Dump at Control Plant 5 in Segment 1.

Built environment resource types

- Haiwee Powerhouse in Segment 1 and a natural gas pipeline in Segment 3S.

Exploration and Transportation

This category encompasses all cultural resources associated with the exploration of the region and travel and transportation through and within the region. This resource type includes the remains of abandoned foot trails, wagon trails, and motorized vehicle roads; railroad systems including rail grades, rails, rail ties, trestles, and switches; aircraft landing areas; and landings for water vessels. Vehicles themselves may also fit into this category. As the exploration and mapping of the region was common to find and establish travel routes or to identify the ideal routes for railroads, resources that are associated with that effort, such as camps, are assigned to this category.

A typical transportation corridor within the API would be a linear feature. Some transportation features, such as historic-era footpaths and wagon trails, would not contain any evidence of construction, as opposed to more modern features. Even railroads that have had their ties and tracks removed should still display evidence of construction in the form of a noticeable berm. Many transportation resources had ancillary features, such as construction camps, depots, gas stations, right-of-way fencing, cut-and-fill landscape modifications, and a variety of structures such as bridges and tunnels. Aircraft landing areas associated with military activities will be included in the military resource category.

Trail, Road, and Highway Resources

Along with the Caltrans (2016) Historical Context and Methodology for Evaluating Trails, Roads, and Highways in California, the West Mojave Regional Management Plan Historic Trails Context Study (Winslow et al., 2019) provides a framework for assessing historic-era trail, road, and highway resources in the project API. This context divides these historic-era resources into three thematic categories: Spanish, Mexican, and Emigrant Trails; early automobile roads and highways, 1900-1940; and modern highways, 1940-1956. For a historic-era trail, road, and highway resource to be determined eligible, it must date to one of these periods of significance, overall spanning 1776 to 1956, beginning with Francisco Garcés' travel along the Mojave Trail (Winslow et al., 2019). It must also be associated with these overall themes. Winslow et al. define character-defining features of resources within each of these categorical themes (2019).

The character-defining features of Spanish, Mexican, and Emigrant trails may include a footprint wider than a footpath, varying from 10-15 ft, small campsites, artifacts dating before 1900, wagon ruts, rock features such as trail markers or graves, or historical inscriptions on rockfaces along the route. Routes such as the route of the Forced March (Inyo Wagon Road) were used by the US military to remove indigenous groups from the area. These routes may include a mixture of historic-era and precontact-era artifact types and larger but very temporary camp sites. When identified, these early travel routes are significant in both the association with this history and for the information that their route, their physical form, and any associated artifacts or features provide about that history.

Character-defining features of early automobile roads may include that they conform to topography and curve and bend to avoid significant earth movement, consist of unpaved or partially paved two-track roads, narrow with no more than one lane in each direction, have associated signposts providing guides to water and direction of routes, and may have few bridges, instead using fords and crossing points across washes. Later roads and highways may include some of these characteristics, such as conforming to topography, but are wider, were paved at some point, and are more likely to have bridges.

Railroad Resources

Archaeologists and architectural historians have identified the types of resources and features that could be classified as railroad-related resources (Polk, 2022). For instance, the South Dakota State Historic Preservation Office provides this definition: "A railroad is an inherently complex and interrelated set of buildings, structures, linear elements and archaeological features, all of which are part of a single system designed to transport persons and goods between points" (Hufstetler and Bedeau, 2007). The study proposes a tripartite classification—railway buildings, structural features, and sites—that have related subtypes. Buildings include depots and terminals, freight houses, roundhouses and engine houses, railway-owned housing, and other associated buildings. Structural features include bridges, tunnels, railway line segments, switches, and minor associated features. Sites include railway yards and operating terminals, and community station sites.

Archaeological resource types

- Other: One railroad embankment and one railroad siding in Segment 1 and one bridge in Segment 2.

Built environment resource types

- Access Roads – One-lane unpaved roads, usually fairly short, that terminate at a house, a transmission tower, a lake, or some other feature on the landscape. A total of 138 access roads were identified in the Direct API: 65 in Segment 1, 20 in Segment 2, 27 in Segment 3N and 26 in Segment 3S.
- Local Roads – These roads are longer than access roads, often have names, and provide a street grid in planned subdivisions and routes into local regions. Some of these roads are partially paved. A total of 120 local roads were identified in the Direct API: 31 in Segment 1, 25 in Segment 2, 14 in Segment 3N and 50 in Segment 3S.
- Two Lane Roads – These roads are two lanes wide, often paved or graded, and consistently maintained for the most part. Some of these roads are partially paved. A total of 42 two lane roads were identified in the Direct API: 24 in Segment 1, 5 in Segment 2, 5 in Segment 3N and 8 in Segment 3S.
- Historic Transportation Routes – These roads follow earlier older wagon or explorer trails in the area, as well as older automobile routes in the early 20th Century. A total of 16 historic transportation routes were identified in the Direct API: 6 in Segment 1, 4 in Segment 2, 1 in Segment 3N and 5 in Segment 3S.
- Freeways, U.S. Highways, and State Routes – These include paved and numbered Interstates, Route 66, and various state highways. A total of 10 freeways, U.S. highways, and state routes were identified in the Direct API: 6 in Segment 1, 2 in Segment 2, none in Segment 3N and 2 in Segment 3S.
- Railroads – Intact rail lines. A total of 7 railroads were identified in the Direct API: 2 in Segment 1, 2 in Segment 2, 1 in Segment 3N and 2 in Segment 3S.

Homestead/Farm/Ranch

This category encompasses all archaeological and built environment resources associated with settlement and agricultural activities surrounding the API. A typical homestead, farm, or ranch within the API would have a central residential building, and most likely have included several outbuildings and structures, such as storage sheds and barns. Farms generally were more contiguous economic units than ranches, a consequence of crop production versus animal grazing. Ranches often required additional acreage through a

lease agreement, but a "home ranch" still provided an identifiable nucleus. There were exceptions, of course, such as the Rock Springs Land & Cattle Company, a corporate entity formed in 1894 whose holdings amounted to 1 million acres in the Mojave Desert. Nevertheless, the typical pattern of homesteads, farms, and ranches for the API would follow a core-periphery model, with ranches having a much wider periphery consisting of scattered features such as corrals, cattle chutes, and line camps (Starrs 1998). The domestic occupation resources within this category also contain privies, buried refuse disposal, sheet scatter, dumps, property boundaries, landscaping elements, and family cemeteries. When refuse deposits are in association with foundations or other elements of these resources, those deposits will be assigned to this category rather than the surface refuse deposit category.

The API includes the locations of former historic-era homesteads, farms, and ranches. Homesteads are understood to mean residential sites acquired under government patent for the expressed purpose of settlement and agricultural production. Farming and ranching are two fundamental forms of agriculture; the former an intensive land use associated with crop cultivation, and the latter an extensive land use associated with grazing animals such as cattle and sheep. Homesteads, farms, and ranches are not mutually exclusive terms, especially in the western United States where there is considerable overlap both historically and economically.

Archaeological Resource Types

- Homesteads/Ranch: Foundations or other features that indicate the area was the location of a home and possibly outbuildings. A total of 38 homestead/ranch resources were identified in the Direct API: 30 in Segment 1, 1 in Segment 2, 3 in Segment 3N and 4 in Segment 3S.
- Agricultural: Features such as fences, corrals, rock and barb wire enclosures, that indicate use of the site for animal husbandry, probably of cattle or sheep. Wells are also included in this category. Refuse may also be present at these locations. A total of 7 agricultural resources were identified in the Direct API: 7 in Segment 1, none in Segment 2, none in Segment 3N, and none in Segment 3S.

Built environment resource types

- Residential Buildings: Intact residential buildings and structures. A total of 10 residential buildings were identified in the Direct API: 2 in Segment 1, 2 in Segment 2, 1 in Segment 3N, and 5 in Segment 3S.
- Other resources: Town site of Cartago in Segment 1, Kerr McGee Youth Sports and Staufer Park in Segment 2, and Resource #581 (concrete foundation) in Segment 3S.

Military Resources

The Proposed Project crosses through or adjacent to two current military installations – Naval Air Weapons Station (NAWS) China Lake and Marine Corps Logistics Base Barstow – and runs very close to two others – Fort Irwin and Edwards Airforce Base. The API also crosses areas that were part of the Desert Training Center/California-Arizona Maneuver Area (DTC/CAMA), an enormous World War II-era training complex, although the route is not near any of its constituent camps. Another installation within the API—the Manzanar Relocation Center—had a somewhat different mission during World War II: a Japanese-American internment camp (Unrau, 1996). Finally, there are resources near the API that are associated with the military actions against Native Californians, notably massacre sites, temporary camps, and forts where indigenous populations were confined and interned, and the routes of removal of indigenous people to other areas, notably Fort Tejon.

Research issues for WWII-era resources in the region fall into two general groups: training and exercise activities for the planned invasion of North Africa and subsequent actions, and the forced relocation and incarceration of Japanese-Americans under Executive Order 9066. Training and exercise activities must be discernable to contribute to this research theme. Japanese-American internment is such a significant

event in local, state, and national history that most associated resources would be eligible for listing in the CRHR.

Research issues concerning Cold War properties relate to their function and the methods by which they were constructed and/or maintained. China Lake and Fort Irwin both contain properties dating to that period of significance. Significant historical events have occurred at both installations; numerous achievements in weapons technology, particularly regarding missiles and rocket systems, were accomplished at the NAWS China Lake facility. Many buildings that were designed for specific functions for Cold War programs are quite unusual and rare, and a related research issue to consider when evaluating a building is if it is a distinguished example of a certain building or structure type or method of construction, such as built features on the ground used to test military instruments (i.e., targets).

A typical military resource or feature within the API would be characterized by the various functions of the base in question. Military bases are self-contained communities with the added features that make their mission possible. The cantonment itself would resemble a small town with identifiable components such as housing, commerce, recreation, administration, utilities, and a host of buildings and structures with military significance. An installation may have an airfield with landing strip, tower, and hangers. Beyond the confines of the cantonment proper, there may be designated zones for weapons training and ground maneuvers. There may be bunkers for ammunition storage on the periphery of the base as well. Resources associated with the DTC/CAMA include tank tracks, temporary camps, and rock-built foxholes. In addition to the remains of the Manzanar Relocation Center itself, resources associated with it include areas that provided support to the internment camp in terms of transportation, water, and electrical infrastructure, as well as buildings and structures that were removed from the Relocation Center for use elsewhere after the camp closed.

Archaeological Resource Types

- The Manzanar Sewer Plant in Segment 1 and a bombing target in Segment 3.

Built environment resource types

- Other: Manzanar Detention Center, Manzanar/Inyo Airport tarmac, and Manzanar Road in Segment 1.

Mining

The mining research theme focuses on mineral extraction activities in the past, an industry that was significant in the development of California broadly and the area surrounding the API specifically. Research issues for historic-era mining resources relate both to their function and to the engineering methods they represent (Francaviglia, 1992; Whitley, 2006). Mining resources are often considered within the context of a historic mining district. There are two mining districts within the Proposed Project API: the Rand Historic District and the Stringer Mining District.

One important research issue to consider is whether a mining resource can contribute to understanding the history of mining in the area. For example, a mine may exist that can be documented only through field recording. Another significant research issue is whether historic-era resources can further the understanding of mining technology. Although the technology of mining is amply documented in the historical record, it is possible that some mine resources may provide new information or offer an especially important example of a particular method of mining. It is imperative that any mine considered for CRHR eligibility retain sufficient integrity to allow for its interpretation within the context of regional mining history and/or to inform us about aspects of mining technology that are not fully understood.

Historic-era mining resources include those from which precious metals (i.e., gold, silver, and copper), minerals (i.e., borax, tungsten, and zinc), and rock materials (e.g., gravels and granite) were extracted as well as their associated features such as shafts, adits, inclines, cairns, prospects, waste rock piles, tailings, miscellaneous mining equipment, and various industrial buildings and structures, including residential

features (buildings, foundations, tent flats and dugouts, and trash scatters), and linear transportation and communication features (roads, railroad grades, and utility lines). Gold mining was important to the history of California and involved four fundamental types—placer, hydraulic, river, and hard rock. The report by the SCE consultant provides a detailed review of historic-era mining in the three California counties—Inyo, Kern, and San Bernardino—traversed by the Proposed Project. In addition to a discussion of the California Gold Rush, it includes sections on more specific periods, such as depression-era gold mining, as well as specific industries, such as copper mining and granite quarrying.

Also relevant to the API are quarries, excavated as large open pits. California has many extant rock quarries, for example the Guadalupe Quarry in San Mateo County, which provided needed building stone following the 1906 San Francisco Earthquake, or the Griffith Quarry in Placer County, which provided the granite for the California State Capitol in Sacramento. Copper and borax mining also use the open pit form of extraction. The Rio Tinto Boron Mine in Kern County is the largest open pit mine in California and the largest borax mine in the world.

A typical working mine within the API, whether for precious metals, tungsten, borax, or rock, would have had common features regardless of industrial variation. Mining is an extractive industry, and the primary feature or features were places where the commodity was removed from the earth, whether that be via mine shafts, surface scrapes, or open pits. There would have been provisions for transporting the commodity to mill or market, whether that be narrow-gauge railroad or 20-mule team. The typical mine would have had an assemblage of buildings for offices, shops, and possibly on-site residences. Most historic-era mining locations had designated areas for trash disposal, as well as a "bone yard" for a variety of equipment.

Archaeological Resource Types

- Mine: Mine shafts or adits. Building foundations, large refuse scatters and machinery is often present. Additionally, four of the sites classified as mines are large scale gravel or rock quarrying areas. A total of 20 mines were identified in the Direct API: 3 in Segment 1, 16 in Segment 2, 1 in Segment 3N and none in Segment 3S.
- Prospect Pits: Areas where prospect pits have been dug, either by hand or by machine. A total of 19 prospect pits were identified in the Direct API: 9 in Segment 1 and 10 in Segment 2.

Built environment resource types

- Other: Rand Historic District in Segment 2.

Refuse and Discard

This theme includes only those sites where the refuse deposit is the dominant feature and not ancillary to other features such as mines, foundations, or roads. Virtually all mining sites, for example, have refuse deposit features that may be contributing elements to site significance based on a mining theme. Most homesteads also have a generalized refuse sheet midden that can help establish temporal parameters and contribute to research questions, but the homestead, not the sheet midden, is the focus of significance. Finally, there are refuse deposits along rural roads with little or no relationship to the transportation features themselves; the roads are simply conduits for garbage disposal.

One important distinction is the difference between primary and secondary refuse deposits (Schiffer, 1972; South, 1977). The former is a deposit at or near its place of generation, whereas the latter is some distance removed from its place of generation. This is critical insofar as secondary deposits are almost always anonymous, which detracts from their research value. The Arizona State Historic Preservation Office document explains this vis-à-vis waste piles. "When the source of the garbage and the waste pile have no clear physical proximity, it is difficult to establish an association. Without an association, a waste pile has limited or no research potential" (Sullivan and Griffith, 2021:22).

Another distinction is whether a refuse deposit is surficial or has depth. Trash scatters and waste piles are generally surface deposits. Open dumps, on the other hand, often have a long period of use resulting in subsurface stratified deposits, which enhance their archaeological information value. A final consideration is the length of time it took for refuse deposits to accumulate. Trash scatters and open dumps were used over a much longer time than waste piles. A single family or business could discard trash within, or on the periphery of, their property over a period of years. Open dumps, by definition, were long-term trash concentrations used by a community. Waste piles, however, were short-term, perhaps even single event, refuse deposits that are most often found on what had been vacant land.

Trash scatters and waste piles only have significance in association with their source, and therefore the generation place must be identifiable using proximity, the materials present, and/or by archival research on adjacent or nearby properties. As trash scatters are primary deposits, this is easier than for waste piles, where it is most often not possible. The generation source must have significance in itself that it lends to the refuse deposit and where the refuse deposit may provide information about the occupants of those places, even if their particular identities are not known. Open dumps, on the other hand, may be eligible independent of another resource or generation point because the volume and diversity of artifacts contained in open community dumps may be used to address a wide variety of research issues at the community, regional, and national levels (Sullivan and Griffith, 2021:36-38).

Refuse deposits are probably the most common archaeological site type within the API, with approximately 372 identified (second would be precontact lithic scatters and concentrations at a count of 132). They are assemblages of historic-era debris that have been discarded on the landscape and range from a single dumping episode to an established community waste disposal site used multiple times. Artifact assemblages also vary from a few cans in the countryside (Rock, 1984) to large landfills containing acres of material culture (Rathje and Murphy, 2001). Refuse disposal sites or features within the API are surface manifestations and therefore this category only applies to surface sites. Covered sanitary landfills became the norm only after open dumps were banned by the Environmental Protection Agency (EPA) in 1979 (Sullivan and Griffith, 2021:22). Privies were often areas of discard, particularly for 19th century dwellings, but are not found in isolation and are therefore considered part of the broader site, usually a homestead, but also mining resources and transportation resources. Although refuse deposits such as large landfills can be considered elements of the built environment, all refuse deposits are treated as archaeological sites for purposes of this analysis.

Refuse deposits can be primary or secondary in nature (Schiffer, 1972:163; South, 1977:296-297). Primary deposits are located at or near the place where the refuse was generated, while secondary deposits have been moved from the place of generation, either immediately or after a period of being stored.

Archaeological Resource Types

- **Very Small Refuse Scatter:** 20 items or less. Often these sites are the result of casual roadside or camp disposal.
- **Small Refuse Scatter:** More than 20 items and less than 201 items. They are probably the result of a single episode of dumping and casual trash disposal.
- **Medium Refuse Scatter:** More than 200 items but less than 500. These sites are indicative of more than one episode of dumping, by the same persons or multiple individuals, at a single location.
- **Large Refuse Scatter/Dump:** More than 500 items, or encompassing multiple loci or trash piles, these sites are the result of multiple uses of the same location as a convenient, ad hoc local dump.
- **Non-Domestic Refuse Scatter:** Materials derived from a non-domestic context such as construction materials or electrical items.

Built environment resource types

- Not applicable.

Rock Feature Resources

Historic-era rock feature resources include a variety of forms, including alignments, cairns, piles, walls, and rings. Within the API, SCE's consultant identified cairns, rock piles, rock rings, and walls. Rock rings are circular formations of rocks, either in a single level or in a small number of courses, and in historic-era contexts generally represent campfires. Cairns are stacks or piles of small to medium-sized rocks that appear to be purposely constructed, rather than piles of waste rock, excavation spoils, or mining tailings, which are assigned to the Mining resource category. Historic-era cairns that represent mining claims are assigned to the Mining resource category as well. Walls and foundations are assigned to the resource types that represent the use of the features, usually the homestead/farm/ranch resource or mining resource categories. Rock alignments associated with these other uses will be assigned to homestead/ farm/ranch resource or mining resource categories as well.

This category is used for cairns and alignments that most likely are associated with the exploration and mapping of the region, as well as transportation activities. These resources are most commonly survey markers or monuments installed by the US GLO during the platting of the US and mark sections or other points in the Public Lands Survey System. They may also represent survey benchmarks or monuments installed by other government agencies such as the US Geological Survey (USGS). Both GLO and USGS survey markers include a post capped with a marker within the cairn and are thus easily identifiable. Rock alignments in this category are those that mark paths or the edges of roads or otherwise direct travel or relate to exploration.

Archaeological Resource Types

- Survey Markers: Official survey monuments, stakes and posts that appear to indicate property corners, or rock cairns forming mining claim corners. These locations often have a sparse refuse scatter surrounding them. A total of 6 are in the Direct API.
- Rock Features---29 sites.

Built environment resource types

- Other: Rock erosion control wall.

Water Infrastructure

This category encompasses all resources associated with retention, diversion, and conveyance of water, as well as flood control measures. These are hydraulic engineering features, which may be as simple as an irrigation ditch or as complex as an aqueduct. Water infrastructure features could include the following: diversion structures (weirs, dams, and natural lakes); conduits (pumping stations, open canals, flumes, tunnels, and pipelines); flow control devices (gates, gauges, valves, distribution boxes, intake structures, and spillways); cleansing devices (sand traps and trash gates); and associated resources and settings (construction camps, ditch tenders' camps, hydroelectric power plants, and agricultural landscapes).

Caltrans and JRP Historical Consulting Services (2000:84) identify five generalized components of water infrastructure, each containing types and subtypes: diversion structure, some type of conduit, and a functional association with one or more activities, whether agriculture, mining, domestic water supply, hydroelectric power generation, or other uses. This resource category does not include water infrastructure used to deliver water to power stations, as hydroelectric power generation resources are included in the separate electrical infrastructure category. Mining resources also often contain diversion and conduit features as well as settling ponds and other liquid storage ponds. If water infrastructure features are associated with mining, they are categorized as mining resources rather than as water infrastructure

resources. Similarly, if a water feature is associated with a military facility, such as the Manzanar War Relocation Center, it is considered in association with military resources. Water infrastructure features that are part of domestic settlements or agricultural complexes are assigned to the homestead/farm/ranch category, but if a feature is simply leading to agricultural areas, dwellings, or cities, it is assigned to the water infrastructure category.

Archaeological resource types

- One depression with a pipe (associated with the Alabama Gates Camp from the construction of the Los Angeles Aqueduct), one capped well pipe, one well, one metal pipe, one resource consisting of two drainage ditches (within an archaeological site), one sewer pipe, one berm or dam, and one metal pipe embedded vertically. A total of 8 resources are present in the Direct API.

Built environment resource types

- Water Conveyance and Control: Intact small ditches to very large water delivery systems. A total of 17 water conveyance and control resources were identified in the Direct API: 12 in Segment 1, 1 in Segment 2, 1 in Segment 3N and 3 in Segment 3S.

Summary of Historic Era Archaeological Resources

As shown in Table 3.6-4, there are a total of 463 historic era archaeological sites in the Direct API. The majority of these resources, 373, are refuse scatters of various types. The next most common resource types are those related to mining, including mines and prospect pits.

Table 3.6-4. Summary of Historic Era Archaeological Resources in the Direct API

	Refuse Scatters													
	Very Small Refuse	Small Refuse	Medium Refuse	Large Refuse/Dumps	Non-Domestic Refuse	Homestead	Agricultural	Water Control	Mine	Prospect Pits	Survey Marker	Rock Feature	Other	Total
Segment 1	76	108	22	7	9	30	7	8	3	9	5	22	9	273
Segment 2	20	39	12	3	1	1	0	0	16	10	1	2	2	105
Segment 3N	19	9	1	2	0	3	0	0	1	0	0	2	1	34
Segment 3S	22	18	4	0	0	4	0	0	0	0	0	3	0	49
Total	**137**	**174**	**39**	**12**	**10**	**38**	**7**	**8**	**20**	**19**	**6**	**29**	**12**	**511**

Notes: Many historic era archaeological sites are assigned to more than one resource type. Three **Rock Feature** sites. of undetermined age are included. Sites characterized as **Other** include remnants of Electrical, Military, Bridge, Railroad and Road resources

Summary of Built Environment Resources

There are a total of 395 built environment resources in the Direct API. The majority of these resources – 326 (80%) – are roads including access roads, local roads, two lane paved roads, historic routes, freeways, highways, and state routes. The next most common resource types are transmission/utility lines and water convenance and control features (Table 3.6-5).

Table 3.6-5. Summary of Built Environment Resources in the Direct API

	Access Roads	Local Roads	Two Lane Paved Roads	Historic Routes	Freeways, U.S Highways, State Routes	Railroads	Transmission/ Utility Lines	Substations	Residences and Buildings	Water Convey-ance and Control	Other	Total
Segment 1	65	31	24	6	6	2	5	2	2	12	5	160
Segment 2	20	25	5	4	2	2	7	3	2	1	7	78
Segment 3N	27	14	5	1	0	1	3	0	1	1	0	53
Segment 3S	26	50	8	5	2	2	8	2	5	3	4	115
Total	**138**	**120**	**42**	**16**	**10**	**7**	**23**	**7**	**10**	**17**	**16**	**406**

Notes: Several resources extend across multiple segments. **Other** includes 2 Districts, Townsite, Subdivision, Service Station, Airport, Landing Strip, Sewer System, Motel, Junction, Sports Complex, Pipeline, Concrete foundation, Retaining Wall and a Right-of-way.

3.6.2. Applicable Regulations, Policies, and Standards

The API is situated on a combination of federal and state-administered public lands, federal (DoD) lands, and privately owned lands, thus requiring compliance with both CEQA and NHPA Section 106, and its implementing regulations (36 CFR 800). This section summarizes the regulatory requirements relevant to cultural resources that apply to the Proposed Project.

3.6.2.1. Federal Regulations, Policies and Standards

A federal undertaking is a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a federal agency, including those carried out by or on behalf of a federal agency; those carried out with federal financial assistance; those requiring a federal permit, license, or approval; and those subject to state or local regulation administered pursuant to a delegation or approval by a federal agency (36 CFR 800.16[y]). Portions of the Proposed Project are under the jurisdiction of the BLM Bishop, Ridgecrest, Barstow, and Needles Field Offices, and DoD installations including NAWS China Lake, Edwards Air Force Base, and MCLB Barstow.

National Environmental Policy Act

The National Environmental Policy Act (NEPA) requires the federal government to carry out its plans and programs in such a way as to "preserve important historic, cultural, and natural aspects of our national heritage" (42 USC 4331[b][4]). The intent of the statute is to require that agencies obtain sufficient information regarding historic and cultural properties (including consulting, for example, appropriate members of the public; other federal, state, and local government agencies; and Native American tribes, organizations, and individuals) to make a determination of the historical and cultural significance of affected historic properties or cultural resources and to take into account whether irreversible adverse impacts to such resources will result from a federal decision, and whether those impacts can be avoided, minimized, or mitigated.

National Historic Preservation Act of 1966

Enacted in 1966 and amended most recently in 2014, the NHPA (54 USC 300101 et seq.) instituted a multifaceted program, administered by the Secretary of the Interior, to encourage sound preservation policies of the nation's cultural resources at the federal, state, and local levels. The NHPA authorized the expansion and maintenance of the NRHP, established the position of State Historic Preservation Officer (SHPO), and provided for the designation of State Review Boards. The NHPA also set up a mechanism to

certify local governments to carry out the goals of the NHPA, assisted Native American tribes in preserving their cultural heritage, and created the Advisory Council on Historic Preservation (ACHP).

National Historic Preservation Act Section 106

Section 106 of the NHPA (54 USC 306108) states that federal agencies with direct or indirect jurisdiction over federally funded, assisted, or licensed undertakings must take into account the effect of the undertaking on any historic property that is included in or eligible for inclusion in the NRHP, and that the ACHP must be afforded an opportunity to comment, through a process outlined in the ACHP regulations in 36 CFR 800, on such undertakings. The Section 106 process involves identification of historic properties within an "area of potential effect; determination if the undertaking will cause an adverse effect on historic properties; and resolution of those adverse effects through execution of a Memorandum of Agreement." Federal agencies must consult with the SHPO, Native American tribes that attach religious or cultural significance to historic properties that may be affected by an undertaking, local governmental agencies, and other parties with a demonstrated interest in the undertaking and provide opportunities for public involvement in the Section 106 process.

BLM, as the lead Federal agency for the undertaking, is consulting with Federally recognized Tribes.

National Register of Historic Places

The NRHP was established by the NHPA as "an authoritative guide to be used by federal, state, and local governments, private groups and citizens to identify the Nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment" (36 CFR 60.2). The NRHP recognizes properties that are significant at the national, state, and local levels. To be eligible for listing in the NRHP, a resource must be significant in American history, architecture, archaeology, engineering, or culture. Districts, sites, buildings, structures, and objects of potential significance must also possess integrity of location, design, setting, materials, workmanship, feeling, and association.

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 (25 USC 3001 et seq.) protects human remains, funerary objects, sacred objects, and items of cultural patrimony of Indigenous peoples on federal lands. NAGPRA stipulates a process for the disposition of Native American human remains or cultural items excavated or discovered on federal or tribal lands, or in the possession and control of an agency that has received federal funding.

NAGPRA also provides for the repatriation of human remains and associated items previously collected from federal lands and in the possession or control of a federal agency or federally funded repository. Implementing regulations are codified in 43 CFR 10. In addition to defining procedures for dealing with previously collected human remains and associated items, these regulations outline procedures for negotiating plans of action or comprehensive agreements for treatment of human remains and associated items encountered in intentional excavations, or inadvertent discoveries on federal or tribal lands.

Archaeological Resources Protection Act

The Archaeological Resources Protection Act (ARPA) of 1979 provides for the protection of archaeological resources more than 100 years old and that occur on federally owned and administered lands, Native American lands, and lands for which fee title is held by the federal government. The statute makes it unlawful to excavate and remove items of archaeological interest from federal lands without a permit, and it defines the process for obtaining such a permit from the responsible federal agency. This process includes a 30-day notification to interested persons, including Native American tribes, by the agency to receive comments regarding the intended issuing of a permit. The law establishes a process for prosecuting persons who illegally remove archaeological materials from lands subject to ARPA. The law also provides

for curation of archaeological artifacts, ecofacts, notes, records, photographs, and other items associated with collections made on federal lands. Standards for curation are provided for in regulations at 36 CFR 79.

American Indian Religious Freedom Act

The American Indian Religious Freedom Act of 1978 (Public Law 95-431; 92 Stat. 469; 42 USC 1996, 1996a) establishes U.S. policy to protect and preserve American Indian, Eskimo, Aleut, and Native Hawaiian freedom to believe, express, and exercise traditional religions and ways. This includes access to religious sites and the freedom to worship through ceremonial and traditional rites. Federal agencies must determine if policy and procedure changes are needed to protect such rights and freedoms. The act is aligned with the First Amendment guarantee of religious freedom and was amended in 1994.

Protection and Enhancement of the Cultural Environment (1971), Executive Order 11593

Executive Order 11593 encourages state and local historic preservation officials to evaluate federally owned properties and, when appropriate, to nominate such properties for listing in the NRHP. It encourages them to develop and make information concerning professional methods and techniques for preserving, improving, restoring, and maintaining historic properties available to federal agencies and state and local governments (NPS, 2011).

Indian Sacred Sites (1996), Executive Order 13007

Executive Order 13007 states that in order to protect and preserve Indian religious practices, each executive branch agency that has jurisdiction of federal lands must accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners. The agency must prevent damage to the physical integrity of such sacred sites and must maintain the confidentiality of sacred sites. An agency should strive for these objectives when practicable, permitted by law, and not clearly inconsistent with the functions of the agency (Clinton, 1996).

Consultation and Coordination with Indian Tribal Governments (2000), Executive Order 13175

The purpose of Executive Order 13175 is to ensure that all executive departments and agencies consult with Indian tribes and respect tribal sovereignty for policy issues that impact Indian communities. This executive order reaffirms the federal government's commitment to tribal sovereignty, self-determination, and self-government (Clinton, 2000).

Preserve America (2003), Executive Order 13287

Executive Order 13287 (Bush, 2003) states that the federal government will manage its historic properties as assets that can support department and agency missions. Each agency must encourage, support, and foster public-private initiatives and investment in the use, reuse, and rehabilitation of historic properties. Executive Order 13287 also encourages integrating historic properties with tourism.

Federal Land Policy and Management Act (FLPMA)

This law (Public Law [PL] 94-579; 90 Statute 2743, USC 1701–1782) requires that public lands be managed in a manner that will protect the quality of their scientific values. Specifically, FLPMA was established as a public land policy to "provide for the management, protection, development, and enhancement of the public lands." FLPMA requires federal agencies to manage public lands so that environmental, historic, archeological, and scientific resources are preserved and protected, where appropriate. Though 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 (43 USC 1701 Section 102, 302).

3.6.2.2. State Regulations, Policies and Standards

Pursuant to GO 131-D, the CPUC has sole and exclusive jurisdiction over the siting and design of electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities in the state of California. Under CEQA, the CPUC is the lead agency for such proposed project elements. SCE is required to comply with GO 131-D and is seeking a Permit to Construct from the CPUC for the proposed project; therefore, compliance with CEQA and other state environmental statutes involving cultural resources is required. The CPUC is tasked with compliance for all provisions in CEQA and the State CEQA Guidelines that concern cultural resources, as explained below.

California Environmental Quality Act

CEQA requires a lead state agency to analyze whether historic and/or archaeological resources may be adversely affected by a proposed project. Under CEQA, a "project that may cause a substantial adverse change in the significance of a historic resource is a project that may have a significant effect on the environment" (PRC 21084.1). Answering this question is a two-part process: first, the determination must be made as to whether the proposed project involves cultural resources; second, if cultural resources are present, the proposed project must be analyzed for a potential "substantial adverse change in the significance" of the resource.

California Register of Historical Resources

The CRHR (PRC § 5024.1) is a listing of properties that are to be protected from substantial adverse change. It includes properties that are listed, or have been formally determined to be eligible for listing in the NRHP; State Historical Landmarks; eligible Points of Historical Interest under CEQA; and cultural resources listed in, or determined to be eligible for listing in, the CRHR or a local register which meet the CEQA definition of "historical resources" and must be given consideration in the CEQA process. Under the California Code of Regulations, Title 14, Chapter 11.5, properties listed on or formally determined to be eligible for listing in the NRHP are automatically eligible for listing in the CRHR. A resource is generally considered to be historically significant under CEQA if it meets the criteria for listing in the CRHR. These criteria are essentially the same as the eligibility criteria for the NRHP. In addition to being at least 50 years old, a resource must meet at least one of the following four criteria:

- Criterion 1 is associated with events that have made a significant contribution to the broad patterns of our history.
- Criterion 2 is associated with the lives of persons significant in our past.
- Criterion 3 embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
- Criterion 4 has yielded, or may be likely to yield, information important to history or prehistory. (Cal. Code Regs., tit. 14, § 4852.)

In addition, historical resources must also possess integrity of location, design, setting, materials, workmanship, feeling, and association.

Unique Archaeological Resources. Additionally, CEQA states that it is the responsibility of the lead agency to determine whether the project will have a significant effect on "unique" archaeological resources. An archaeological artifact, object, or site can meet CEQA's definition of a unique archaeological resource even if it does not qualify as a historical resource (PRC § 21083.2[g]; 14 CCR 15064.5[c][3]). An archaeological artifact, object, or site is considered a unique archaeological resource if "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" (PRC § 21083.2[g]):

- 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.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.
- If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require that reasonable efforts be taken to preserve these resources in place or provide mitigation measures.

Assembly Bill 52

AB 52 (2014) requires consultation with a tribe that is traditionally and culturally affiliated with the geographic area where a project is located if the tribe has requested consultation regarding projects in the tribe's area of traditional and cultural affiliation. (Public Resource Code (PRC) §§ 21073, 21074, 21080.3, 21082.3, 21083.09, 21084.2, and 5097.94.) Public Resources Code Section 21074 defines a TCR as "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." TCRs also include "non-unique archaeological resources" that may not be scientifically significant but still hold sacred or cultural value to a consulting tribe.

CEQA requires that impacts to TCRs be identified and, if impacts are significant, that mitigation measures be implemented to reduce those impacts to the extent feasible (PRC § 21081). In the protection and management of the cultural environment, both the statute and the CEQA Guidelines provide definitions and standards to be used for the assessment of potential impacts to TCRs.

Impacts to a TCR are considered potentially significant if the affected resource is: (1) listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in PRC § 5020.1(k); or (2) a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in of PRC Section 5024.1(c). (PRC § 21074). In applying these criteria, the lead agency must consider the significance of the resource to a California Native American tribe.

Thus, a project may have a substantial adverse change in the significance of a TCR if:

- The adverse change is identified as being substantial through consultation with any California Native American tribe that requests consultation and is traditionally and culturally affiliated with the geographic area of a proposed project (PRC § 21084.2).
- The resource is listed, or eligible for listing, in the CRHR or in a local register of historical resources, and if the resource or its immediate surroundings are subject to physical demolition, destruction, relocation, or alteration such that the significance of an historical resource would be materially impaired. (CEQA Guidelines § 15064.5).

The fact that a TCR is not listed in or determined to be ineligible for listing in the CRHR, is not included in a local register of historical resources or is not identified in a historical resources survey does not preclude a lead agency from determining that the resource may be a historical resource.

California Health and Safety Code

Section 7050.5(b) of the California Health and Safety Code requires that in the event of discovery of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or

disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the County coroner has been notified. The coroner will determine whether or not the remains are subject to the provisions of Government Code section 27491 or any other related provisions of law concerning investigation of the circumstances, manner and cause of any death, and the recommendations concerning the treatment and disposition of the human remains. The coroner shall make his or her determination within two working days from the time of notification.

California Native American Graves Protection and Repatriation Act

The California Native American Graves Protection and Repatriation Act of 2001 (CalNAGPRA) (Health and Safety Code [HSC] § 8010, et seq) establishes the state repatriation policy and:

- Ensures that a consistent state policy is followed with respect to handling of all California Indian human remains and cultural items, and that the state's repatriation policy is applied consistently with the provisions of the federal NAGPRA (25 USC § 3001 et seq.).
- Facilitate implementation of the provisions of NAGPRA with respect to publicly funded agencies and museums in California and encourages voluntary disclosure and return of remains and cultural items by agencies and museums.
- Provides a mechanism whereby lineal descendants and culturally affiliated California Indian tribes that file repatriation claims for human remains and cultural items under NAGPRA or CalNAGPRA with California state agencies and museums may request assistance from the Native American Heritage Commission (NAHC) in ensuring that state agencies and museums are responding to those claims in a timely manner and in facilitating the resolution of disputes regarding those claims.
- Provides a mechanism whereby California tribes that are not federally recognized may file claims with agencies and museums for repatriation of human remains and cultural items.

PRC Section 5097.98(b) and (e) requires a landowner on whose property Native American human remains are found to limit further development activity in the vicinity until he or she confers with the NAHC-identified Most Likely Descendants (MLD) to consider treatment options. In the absence of MLDs or of a treatment acceptable to all parties, the landowner is required to re-inter the remains elsewhere on the property in a location not subject to further disturbance. Section 5097.99 establishes as a felony the acquisition, possession, sale, or dissection with malice or wantonness Native American remains or funerary artifacts. Finally, Section 5097.991 establishes as state policy the repatriation of Native American remains and funerary artifacts. HSC Section 7050 makes it a misdemeanor to mutilate, disinter, wantonly disturb, or willfully remove human remains found outside a cemetery and further requires a project owner to halt construction if human remains are discovered and to contact the county coroner.

3.6.2.3. Local Regulations, Policies and Standards

Pursuant to General Order 131-D, the Proposed Project is not subject to local authority because the CPUC has exclusive jurisdiction over the siting, design and construction of electric power line projects, distribution lines, substations, and electric facilities constructed by public utilities subject to CPUC jurisdiction. SCE would still consult with local agencies regarding land use matters.

Inyo County

The Inyo County General Plan (2001, as amended) contains policies intended to protect and promote cultural and historic resources within its jurisdiction The Conservation and Open Space Element presents goals, policies, and implementation measures for multiple resources in the County, including cultural resources. The cultural resources goals and policies that are contained within the Inyo County General Plan are listed below:

- **Goal CUL-1:** Preserve and promote the historic and prehistoric cultural heritage of the County

- **Policy CUL-1.3**: Protection of Cultural Resources. Preserve and protect key resources that have contributed to the social, political, and economic history and prehistory of the area, unless overriding circumstances are warranted.
- **Policy CUL-1.4**: Regulatory Compliance. Development and/or demolition proposals shall be reviewed in accordance with the requirements of CEQA and the National Historic Preservation Act.
- **Policy CUL-1.5**: Native American Consultation. The County and private organizations shall work with appropriate Native American groups when potential Native American resources could be affected by development proposals.

Kern County

The Kern County General Plan (2004) contains policies intended to preserve archaeological, cultural, and historical resources within its jurisdiction The Land Use, Open Space, and Conservation Element presents policies and implementation measures for multiple resources in the County, including cultural resources. The cultural resources policies that are contained within the Kern County General Plan are listed below:

- **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

The San Bernardino County General Plan (2020) contains policies intended to preserve and conserve cultural resources within its jurisdiction. The Cultural Resources Element presents goals and policies for cultural, tribal cultural, and historic resources. The relevant goals and policies contained within the San Bernardino County General Plan are listed below:

- **Goal CR-1**: Tribal Cultural Resources. Tribal cultural resources that are preserved and celebrated out of respect for Native American beliefs and traditions.
  - **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 in surveys, testing, excavation, and grading phases of development projects with potential impacts on tribal resources.
- **Goal CR-2:** Historic and Archaeological Resources. Historic resources (buildings, structures, or archaeological resources) and paleontological resources that are protected and preserved for their cultural importance to local communities as well as their research and educational potential.
  - **Policy CR-2.1:** National and state historic resources. We encourage the preservation of archaeological sites and structures of state or 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.

City of Barstow

The City of Barstow General Plan (2015 - 2020) contains policies intended to preserve and conserve cultural resources within its jurisdiction. The Resource Conservation and Open Space Element presents goals and policies for cultural, Native American cultural, historic, and archaeological resources. The relevant goals and policies contained within the City of Barstow General Plan are listed below:

- **Goal 4:** Strive to preserve and protect important features and sites (historic, archaeological and paleontological), as defined under this Element's Cultural Resources Management Plan, from degradation or destruction.
  - **Policy 4 A:** The City shall encourage efforts to collect and preserve available local historical resources.

3.6.3. Environmental Impacts of the Proposed Project

3.6.3.1. Impact Analysis Approach

Impact analysis for historical resources is based on consideration of resource eligibility for the CRHR. If a resource is determined to be eligible for the CRHR, and it would be damaged or destroyed by project activities, this would be a significant impact. The impact approach is organized by resource type – precontact resources, historic, archaeological, built environment, and tribal cultural resources – following the subtypes defined in Section 3.6.1.

Impact analysis follows these steps:

- Determining the historical significance of each identified cultural resource in the API, which is defined by its potential eligibility for the CRHR.
- Identifying whether each resource in the API would be affected by project activities (construction or operations and maintenance) and, if so, determining whether effects could be avoided.
- Assessing the severity of the effects of the Proposed Project on the significant historical resources and tribal cultural resources that cannot be avoided.
- Developing mitigation measures that would reduce the severity of project impacts or avoid impacts.

Approach to Resource Evaluation for CRHR Eligibility

Historical Resources

As defined in Section 3.6.2.2, a cultural resource must be determined to be important for at least one of following four historical reasons in order to be considered an historical resource that is eligible for the CRHR (NPS, 1995).

- **Criterion 1:** Resources associated with events that have made a significant contribution to the broad patterns of our history. This criterion recognizes resources associated with single events, or with a pattern of events, repeated activities, or historic trends. For example, a site where precontact Native Americans annually gathered for seasonally available resources, a hilltop associated in oral historical accounts with the founding of an Indian tribe or society and for social interaction, or a trail associated with western migration.
- **Criterion 2:** Resources associated with the lives of persons significant in our past. These are individuals whose activities are demonstrably important within a local, State, or national historic context. These resources must be associated with a person's productive life, reflecting the time period when he or she

achieved significance. For example, the person's home, business, office, laboratory, studio, homestead, or precontact village.

- **Criterion 3:** Resources that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of an important creative individual, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction. For example, a building representing a significant style of architecture (e.g., Romanesque Revival style) or an important representative of the aesthetic values of a cultural group (e.g., precontact petroglyphs).
- **Criterion 4:** Resources that have yielded, or may be likely to yield, information important in prehistory or history. To be eligible, the resource must be related to a particular time period or cultural group. A site that has been partially excavated or disturbed, but still retains substantial intact deposits, is eligible. A site composed only of surface materials cannot be eligible for its potential to yield information that could only be found in stratified deposits. Research questions are developed that can be answered by the data contained by the resource. For example, for a precontact village site research topics might include an exploration of the settlement and subsistence patterns of the occupants or whether the region was a center for the domestication of plants.

Resource Integrity. In order to be determined eligible for the CRHR, a historical resource must also be well preserved enough to communicate its historical importance. This preservation, also referred to as integrity, is reflected in the following seven different aspects:

- **Location:** Integrity is retained if the resource has not been moved from where it was originally created or where the event occurred.
- **Setting:** Integrity is retained if everything around the resource, including natural and man-made features, is similar to how it was when it was originally made.
- **Design:** Integrity is retained when the design is preserved the form, plan, space, structure and style is substantially similar to when it was originally made.
- **Materials:** Integrity is retained if the original materials and original technology are clearly present.
- **Workmanship:** Integrity is retained when physical evidence of the crafts of a particular culture or people during a given time are present.
- **Feeling:** Integrity is retained if the resource expresses the aesthetic or historical sense of a particular period of time.
- **Association:** Integrity is retained if it reflects a direct link between an important event or person and the resource.

Tribal Cultural Resources

TCRs are resources that have cultural value or significance to a Tribe. Evaluation of TCRs was guided by the Governor's Office of Planning and Research *Technical Advisory: AB 52 and Tribal Cultural Resources in CEQA (2017)*. This guidance states that "(w)hen a lead agency chooses to treat a resource as a tribal cultural resource, that determination shall be supported with substantial evidence, applying the criteria in the historical register, and considering the significance of the resource to a California Native American Tribe (PRC § 5024.1, PRC § 21074)". Substantial evidence can include elder testimony, oral history, testimony of an expert certified by the Tribal Government, official tribal government declarations or resolutions, and formal statements from a certified Tribal Historic Preservation Officer (THPO). This evidence can also include historical notes and anthropological records (OPR, 2017). As described in Section 3.6.1.5, the following sources of information were used: the record search, an ethnographic literature review and geospatial analysis, and tribal consultation.

A TCR may be determined eligible for the CRHR based on Criteria 1 through 4 (defined above) and based on resource integrity. A TCR may also be determined eligible for the CRHR if tribal consultation provides information or evidence to the CEQA lead agency that supports a determination of eligibility. As discussed in Section 3.6.1.5, there are both landscape and individual resources that are TCRs and could be affected by the Proposed Project. These resources are evaluated for their significance and eligibility for the CRHR through tribal consultation, an ethnographic literature review, and geospatial analysis.

Approach to CRHR Eligibility Determination for Precontact Archaeological Resources and Tribal Cultural Resources

During tribal consultation, the consulting tribes stated their belief that all precontact resources in the Owens Valley (Segment 1) Direct and Indirect API should be identified as TCRs that are part of a larger landscape. This landscape is defined in this EIR as the Owens Valley Landscape, which contains 257 eligible resources (which includes all precontact resources in Segment 1). The characterization of the Owens Valley Landscape is presented in detail in Section 3.7 (Tribal Cultural Resources). Therefore, precontact archaeological resources in Segment 1 are considered as a single group, as contributors to the Owens Valley Landscape, and in some cases are also individually eligible.

In Segments 2, 3N, and 3S, 9 precontact resources are considered eligible for the CRHR. These resources were evaluated based on resource type as described below.

Some of the resources considered to be eligible are also contributors to other landscapes or historic districts, such as the Patsiata Historic District (described below). Although the Salt Song Trail Cultural Landscape overlaps with the Direct and Indirect API, no resources were associated with it, so it is not considered further (see Section 3.7.1.2, Tribal Cultural Resources, for a detailed description). Finally, each resource was evaluated by resource type. The eligibility criteria are considered here, but the specifics regarding integrity are provided in the technical report prepared by SCE's consultant.

Approach to Eligibility of Landscapes and Historic Districts

Owens Valley Landscape. As a result of tribal consultation, including elder testimony and statements from THPOs, all 257 precontact resources in Segment 1 in the Direct and Indirect API are identified as contributors to the Owens Valley Landscape, which is considered to be a TCR and eligible for the CRHR under Criterion 1 (see Table Ap.5-8 in EIR Appendix 5A). Under Criterion 1, a resource is eligible if it is associated with "events that have made a significant contribution to the broad patterns of our history." In the context of a Native American site where its importance is not recorded in written form, "history" includes both traditional oral and written history. Important events can include specific events, or repetitive trends. Places referred to in Native American oral histories and creation stories, therefore, are potentially eligible. The resources that make up the Owens Valley Landscape are considered to be significant under CRHR Criterion 1 for their ties to important events in history. However, most resource types associated with the Landscape exist today as archaeological resources. This include habitation sites, rock art, and artifact scatters.

Patsiata Historic District. This district encompasses approximately 186 square miles in Inyo County's southern Owens Valley, including Patsiata (Owens Lake) and the many shorelines formed as lake levels fluctuated over the past 14,000 years. The traditional cultural property is associated with the creation of the world and the lifeways and history of the Nüümü and Newe (Owens Valley Paiute and Western Shoshone Indigenous People). A unique cultural landscape that includes many features related to creation and to the continued maintenance and restoration of balance in the world, the district is also a physical, place-based manifestation of the United States' genocidal policies toward the Indigenous inhabitants of the American West and the colonization of Indigenous homelands in what became the United States of America. The district's significance includes its focus for passing on culture and history to younger generations, and for sharing ecologically relevant traditional knowledge with agencies responsible for land stewardship. The district was listed on the NRHP in March of 2025.

Contributing resources to the Patsiata Historic District include natural elements such as springs, streams, Owens River, and Owens Lake, cultural and historical features such as the route of the Forced March (Inyo Wagon Road), and precontact archaeological sites. The overarching landscape is considered a single resource contributing to the district as a whole. The district is defined to include the period of significance from time immemorial through the present.

The Patsiata Historic District is significant under Criterion 1 for its local association with the creation of the world and lifeways and history of the indigenous people. This includes the history of violence perpetrated on these communities and attempts to erase and diminish traditional culture through forced assimilation and the usurpation of Indigenous land-use patterns. The association with the history of indigenous people in the Owens Valley also includes evidence of their resistance and resilience in the face of ethnic-based persecution and violence. Specifically, it is associated with three families who originally occupied the lake region and who preserved the cultural continuity of the Indigenous peoples there. Patsiata is also significant at the local level under Criterion 2 for its association with seven individuals important in Nüümü and Newe history.

Under Criterion 3, the Patsiata Historic District is significant as a unique cultural landscape encompassing features related to creation and to the continued maintenance and restoration of balance in the world. It is considered a sacred landscape that embodies the traditional ways of life and represents the history of adaptations to changing climates in the past and to the Euroamerican incursions and settlements in the 19th and 20th centuries. The landscape represents the history and use of traditional ecological knowledge, an importance that permeates both individually distinctive features within the district and the landscape as a whole (OHP, 2022; SHRC, 2022).

Under Criterion 4, the Patsiata Historic District is significant at the local level as a focus for passing on traditional culture and history to younger generations of indigenous communities and for sharing traditional ecological knowledge with agencies responsible for land stewardship. All precontact resources in the API and within the boundaries of the Landscape are considered contributors to the landscape and eligible under Criterion 3 and Criterion 4. Any historic-era resources that are associated with the families and individuals listed in the nomination are considered under Criteria 1 and 2 as contributors to the District.

Approximately 514 acres of the District are within the Direct API. There are 70 contributors to the Patsiata Historic District in the Direct API.

Approach to Individual Eligibility Determination for Precontact Archaeological Resources and TCR Evaluation by Resource Type

The resource types used below are defined in Section 3.6.1.6. The eligibility rationale for each resource type is as follows:

- **Bedrock Milling Stations.** All bedrock milling stations are considered to be individually eligible under Criterion 4 for their data potential, given the capacity of milling equipment to be examined using starch grain and use-wear analysis techniques, as well as analysis of the typology of any artifacts present, which may indicate the manner in which the site was used.
- **Burial Areas.** All burial areas are considered to be individually eligible under Criterion 1 for their association with an event important in prehistory as these resources provide direct insight into precontact Paiute Shoshone ceremonial mortuary practices. Burial areas that fit the definition of the precontact Paiute Shoshone burial tradition are considered individually eligible under Criterion 3 as this site type, with its arrangement of cairns, is unique to the Owens Valley. As this resource type is composed of multiple features, a diverse artifact assemblage, and often a high potential for buried cultural deposits, these resources have the potential to yield significant information concerning prehistory in the region. Therefore, all burial areas are also considered to be individually eligible under Criterion 4.

- **Ceramic Concentrations.** All ceramic concentrations are considered to be individually eligible under Criterion 4 given the capacity of ceramics to be analyzed in ways that allow identification of where and when it was produced.
- **Habitation Areas.** All habitation areas are considered to be individually eligible under Criterion 1 for their association with an event important in prehistory as these resources provide direct insight into precontact Paiute Shoshone lifeways. If habitation areas include rock art, then they is considered to be individually eligible under Criterion 3 at the state and local level as it represents local groups' traditions of expression and their aesthetics, thus constituting high artistic value and significance. Each petroglyph or pictograph is a unique expression of its creator as a communicative device through time. As this resource type is composed of multiple features, a diverse artifact assemblage, and often a high potential for buried cultural deposits, these resources have the potential to yield significant information concerning prehistory in the region. All habitation areas are also considered to be individually eligible under Criterion 4.
- **Residential Base.** All residential bases are considered to be individually eligible under Criterion 1 for their association with an event important in prehistory as these resources provide direct insight into precontact Paiute Shoshone lifeways. If a residential base includes rock art, then it is considered to be individually eligible under Criterion 3 at the state and local level as it represents local groups' traditions of expression and their aesthetics, thus constituting high artistic value and significance. Each petroglyph or pictograph is a unique expression of its creator as a communicative device through time. As this resource type is composed of multiple features, a diverse artifact assemblage, and often a high potential for buried cultural deposits, these resources have the potential to yield significant information concerning prehistory in the region. Therefore, all residential bases are also considered to be eligible under Criterion 4.
- **Lithic Concentration.** Basic patterns in lithic use can be useful for reconstructing the approximate geographic extent of past settlement and trade systems. Sites can offer valuable information concerning patterns of precontact toolstone procurement and use, particularly if they are accompanied by chronological data that can be used to place stone-working behaviors in time. Some lithic concentrations can be considered to be eligible under Criterion 4. In this EIR, each lithic concentration was evaluated individually, and not all lithic concentrations are considered to be eligible. Larger concentrations with diagnostic artifacts are more likely to be considered eligible.
- **Multi-Class Artifact Concentration.** This resource type is composed of a diverse artifact assemblage, so these resources have the potential to yield significant information concerning prehistory in the region. Multi-class concentrations can be considered to be eligible under Criterion 4. For this project each multi-class concentration was evaluated individually, and larger concentrations with diagnostic artifacts are more likely to be considered eligible.
- **Quarry.** This resource type is composed of a diverse artifact assemblage, so these resources have the potential to yield significant information concerning prehistory in the region. Quarries can be considered to be eligible under Criterion 4. For this project each quarry was evaluated individually, however larger quarries with diagnostic artifacts are more likely to be considered eligible.
- **Rock Art.** All rock art sites are considered to be eligible under Criterion 1 for their association with an event important in prehistory as these resources provide direct insight into precontact Paiute Shoshone ceremonial practices. This resource type is also considered to be eligible under Criterion 3 at the state and local level as it represents local groups' traditions of expression and their aesthetics, thus constituting high artistic value and significance. Each petroglyph or pictograph is a unique expression of its creator as a communicative device through time. They are also eligible under Criterion 4 at the state and local level for their potential to provide significant information regarding the past. This includes information from rock art features about the evolution and distribution of rock art styles, cultural group interactions and distribution, production methods, and direct dating of panels.

- **Temporary Camp.** All temporary camps are considered to be eligible under Criterion 1 for their association with an event important in prehistory as these resources provide direct insight into precontact Paiute Shoshone lifeways. As this resource type is composed of multiple features and diverse artifact assemblages these resources have the potential to yield significant information concerning prehistory in the region. Temporary camps can be considered to be eligible under Criterion 4. For this project each temporary camp was evaluated individually, however larger camps with diagnostic artifacts are more likely to be considered eligible.
- **Trail.** All trails are considered to be to be significant under CRHR Criterion 1 for their ties to important events in history. Trails are also considered eligible under Criterion 3 as they are part of a large web of precontact transportation routes through the Mojave Desert. These sites are also considered register-eligible under Criterion 4 for their ability to yield information important in history and prehistory.

In all, 235 precontact resources in Segment 1 are considered eligible for the CRHR. All of these resources are eligible as contributors to the Owens Valley Landscape. A subset of these resources – 70 in total – are also eligible as contributors to the Patsiata Historic District. In addition, some of these resources are considered individually eligible in their own right, regardless of their affiliation with a Landscape or District. The resources that are individually eligible are summarized by category as shown in Table 3.6-6. Due to the large number of resources, the details on these resources are presented in Appendix 5A, Table Ap.5-1.

Table 3.6-6. Precontact Archaeological Resources in Segment 1 Individually Eligible for the CRHR

Resource Type	Total # of Eligible Resources	Eligible Resources Requiring Data Recovery
Bedrock Milling Station	17	17
Burial Area	2	2
Habitation Area	7	7
Lithic Concentration	117	60
Ceramic Concentration	0	0
Multi-Class Artifact Concentration	39	37
Quarry	2	1
Residential Base	28	28
Rock Art	1	1
Temporary Camp	21	20
Trail	1	1
TOTAL	**235**	**174**

In Segments 2, 3N, and 3S, there are a total of 17 precontact resources that are considered eligible for the CRHR (see Table 3.6-7). All of these resources would require data recovery. Details on these resources are resented in Appendix 5A, Tables Ap.5-2 through Ap.5-4.

Table 3.6-7. Precontact Archaeological Resources in Segments 2, 3N and 3S Eligible for the CRHR

Resource Type	Total # of Eligible Resource (all require data recovery)
Bedrock Milling Station	1
Burial Area	0
Habitation Area	0
Lithic Concentration	8
Ceramic Concentration	1

Resource Type	Total # of Eligible Resource (all require data recovery)
Multi-Class Artifact Concentration	1
Quarry	2
Residential Base	1
Rock Art	0
Temporary Camp	3
Trail	0
TOTAL	**17**

Approach to Eligibility Determination for Historic Era Resources Archaeological and Built Environment Resources

There are 1,463 historic-era archaeological resources in the Direct API and 613 built environment resources in either the Direct or Indirect API (see Tables Ap.5-1 through Ap.5-7 in EIR Appendix 5A). These areas are also overlapped by several historic districts. Each resource was evaluated for the CRHR individually but also as potential contributors to these three historic districts. Because of the large number of historical archaeological and built environment resources, groups of resources related by historical theme were evaluated together.

Historic-era resources within the Proposed Project area are related to eight basic historic themes: electrical infrastructure, exploration and transportation, homestead/farm/ranch, military, mining, refuse deposit, rock feature, and water infrastructure.

Historic Districts

There are several historic era districts with varying levels of designation: Rand Historic District (P-15-007069), Stringer Mining District (within the Rand Historic District), the Bishop Creek Hydroelectric System Historic District, and the Crestview Subdivision (a residential area southwest of Barstow). An individual resource can contribute to the significance of a larger historic district if it possesses characteristics that support the district's overall historical, cultural, or scientific value. As such, contributors to these districts were considered eligible for the CRHR.

Eligibility Evaluation by Resource Theme

Electrical Infrastructure. Under Criterion 1 of the CRHR, an electrical transmission or generation resource needs to show a direct association with the early development of hydropower along Bishop Creek, hydropower development associated with the Los Angeles Aqueduct, or to the construction of the Bishop Creek-San Bernardino "Tower Line" and the Boulder Dam-San Bernardino 138 kV Transmission Line and their contributions to the industrialization and electrification of Southern and Central California and the San Bernardino region. For an electrical generation or transmission structure to be determined eligible under Criterion 2, it must "be associated with a significant person's life AND the structure must be the structure that is most closely related to that person or a contributor to a system of structures that is most closely related to that person." No such persons have been identified. While William B. Mulholland is significantly associated with the Los Angeles Aqueduct as a whole, his direct association with the Haiwee Powerhouse and associated resources is minimal. Electrical infrastructure resources must have characteristics that include innovative constructions, early or exemplary forms of widely used features, or elements representing the work of a master engineer. Hydroelectric structures and electric substations may also exhibit architectural and decorative characteristics that warrant significance under Criterion 3. These are usually only present in standing structures and buildings with high levels of integrity and are unlikely to be observed in archaeological sites. The most likely types of energy infrastructure resources to contain

artifactual assemblages that contain significant information are facilities or areas where there was concentrated worker activity or occupation. These include construction work camps, worker lodging and housing, and discard areas surrounding other facilities. If such places are identified and have artifact assemblages, they would be determined eligible under Criterion 4.

Exploration and Transportation. According to Caltrans (2016:155), "Trails, roads, and highways may be considered individually eligible or eligible as part of a larger system, corridor, or landscape… At a minimum, the transportation property should be described in terms of its beginning and endpoints, whether it is part of a much larger linear corridor, and how well the segment… [reflects the linear resource]." For these roads to be eligible under Criterion 1, the road must have an important association with recreation, tourism, and transportation at the local or state level. For example, portions of US 395 were constructed as part of "El Camino Sierra," designed to bring tourism from Los Angeles into the Owens Valley and Sierra Nevada. For the most part it is difficult to associate a particular portion of a trail route with a person important to the development of that important route, such as Francisco Garcés, Jedediah Smith, Joseph R. Walker, John C. Fremont, or Kit Carson. If such an association can be made through artifacts or trailside inscriptions, the resource may be determined eligible under Criterion 2. If the road or highway are excellent examples of road construction techniques and designs or show innovation in road technology, the segment(s) where those are evident may be determined eligible under Criterion 3, but not necessarily the entire road route. For a road-associated resource to be eligible under Criterion 4 it must have a discrete artifact assemblage that can be tied to particular activities by particular groups and provide information not otherwise known.

Homestead/Farm/Ranch. Agriculture was a significant industry in the Owens Valley prior to the City of Los Angeles controlling nearly all irrigated land in the Owens Valley. Resources with strong associations with the development and decline of this industry in the area may be determined eligible under Criterion 1. Resources associated with the adaptation of Native Americans in the region prior to the imposition of Euro-American agricultural and settlement systems or with Native American participation in farm and ranch labor, may be determined eligible under Criterion 1. At times, agricultural properties may have been home to locally or regionally important people. While homes are not generally the locus of an individual's importance, early settlers, leaders of agricultural communities, or developers of particular agricultural techniques may be best associated with an agricultural property. If a resource can be significantly tied to such an individual, it may be determined eligible under Criterion 2. If archaeological remains can demonstrate particular layouts of complexes, or if there are observable landscape modifications or designed gardens, these resources may be determined eligible under Criterion 3. Settlement and agricultural resources may also contain artistic flairs, such as vernacular sculpture, wall decorations such as painted murals, or signs advertising goods and services. Resources that contain these features may also be determined eligible under Criterion 3. Under Criterion 4, refuse deposits as well as the remains of buildings and structures associated with domestic and agricultural complexes can provide information to address research questions. Features representing buildings and structures can be used to investigate particular construction activities, irrigation techniques, or engineering practices. Most commonly, refuse deposits, including privies and the incidental refuse that accumulated under buildings by falling through floor cracks, can be used to identify the ways that the inhabitants navigated their lives, including the subthemes above. This is particularly true for inhabitants who were members of distinct ethnic groups and data from domestic debris can be used to investigate the ways they reinforced their identities and formed new identities as Americans.

Mining. A mining resource will be considered eligible under Criterion 1 if it is strongly associated with events in the subthemes of conservation, politics, or literature or with a particular defined cycle of boom and bust. When discernable patterns within mining resources can be associated with a particular period and are representative of this period, they will be determined eligible. Similarly, mining resources that are directly associated with the development of a mining district and can communicate that association will be determined eligible under Criterion 1. Early examples of particular technological and engineering

features, such as arrastras or stamp mills, ore transportation features, or shafts and adits, may be determined eligible under Criterion 3. If innovations in techniques of extraction or processing are represented at resources, they may also be determined eligible. Under Criterion 4, the information potential of mining features may be found in the following: "standing buildings or structures; surviving machinery; landforms such as mill tailings or mine waste rock dumps; or less visible physical remains such as privy pits, trash dumps, prospect pits, collapsed headframes, building foundations, roads, and machine pads or anchor piers" (Noble and Spude 1992:17). Foremost, a mining resource must contain temporally diagnostic artifacts, features, or other indications of establishment and use (graffiti, mining claims, inscribed dates, etc.) to be considered eligible under Criterion 4. Isolated prospect pits, ditches, or wastepiles that lack artifacts that can be dated to a narrow range and that provide information about the miners cannot be associated with any events or persons in the past and cannot provide any important contributions to the understanding of the past and would therefore not be considered eligible under Criterion 4.

Refuse Deposits. For a trash scatter to be eligible for listing on the CRHR under Criterion 1, it must be associated with a particularly significant event where there are no other material remains nearby that can communicate an association with that event. For the I-C Project API, three events rise to that status: the removal of Native Californians to Fort Tejon; the original Spanish, Mexican, and Euro-American exploration and mapping of the region; and the internment of Japanese Americans at Manzanar. In addition to the above, an open dump may be associated with an important event in waste management, such as "a crisis in trash management, a major policy change in trash disposal, the location of a study or a technological innovation that resulted in changes in policy or practices in waste management, etc." (Sullivan and Griffith 2021:38). A refuse deposit would need to be the locus of a person's importance for it to be eligible under Criterion 2. Therefore, this criterion only applies to open dumps if the site is associated with a person important in the history of trash disposal (Sullivan and Griffith 2021:38). Refuse deposits of the kinds recorded in the ADI are simple and generally opportunistic in nature and little, if any, deliberate design, or construction was used in their creation and therefore none of the refuse deposits are determined eligible under Criterion 3 (Sullivan and Griffith 2021:38-39). A trash scatter must have a clear association with the generation source to be considered eligible under Criterion 4. With the high difficulty of associating waste piles with their place of generation, these sites do not provide important information and are not eligible.

Water Infrastructure. Under Criterion 1, significance stems from the importance of the resource within the historic-era water delivery network. Resources in this category are eligible if they are associated with well-documented events that are important to the past, such as the construction of the Los Angeles Aqueduct. Alternatively, they are not significant if the water conveyance is associated with an unnamed or poorly documented agricultural development or a townsite that was either small or very temporary. In order for a water conveyance system to be eligible under CRHR Criterion 2, it must have to have a strong association with an individual to the extent that few, if any, other resources would convey that association more. Notably, the Los Angeles Aqueduct is associated with William B. Mulholland, principal engineer and designer of the system. To be eligible under CRHR Criterion 3 the resource must have characteristics related to overcoming engineering challenges, represent early or particularly large examples of a form, represent a superior example of a particular type of development technology from a specific period, show innovation or unique responses to transporting water, or have decorations with artistic value. An example of the last is the reservoir above Manzanar Relocation Center that has inscriptions, inlays, and stacked rock features installed by internees. CRHR Criterion 4 rarely applies to water infrastructure resources, as information about them can generally be found in documents and the infrastructure features rarely provide additional information. However, early or vernacular water conveyance systems may provide significant information about the past pertaining to their construction and routes, pre-contact water conveyance systems, Spanish water conveyance systems, and early mining water conveyance systems.

Summary

In total, 45 historic era archaeological resources were found to be eligible for the CRHR; see Table 3.6-8. The majority of these are mining resources that are eligible for their association with the Rand Historic District.

In total, 104 built environment resources are eligible for the CRHR; see Table 3.6-9.

Table 3.6-8. Historic Era Archaeological Resources Eligible for the CRHR

Resource Type	Total # of Eligible Resources	Eligible Resources Requiring Data Recovery
Electrical Infrastructure	5	0
Exploration and Transportation	23	1
Homestead/farm/ranch	0	0
Mining	8	0
Recreation	1	0
Water Infrastructure	4	1
Military	4	0
TOTAL	45	2

Table 3.6-9. Historic Era Built Environment Resources Eligible for the CRHR

Resource Type	Total # of Eligible Resources	Eligible Resources Requiring Data Recovery
Electrical Infrastructure	5	0
Exploration and Transportation	23	1
Homestead/farm/ranch	0	0
Mining	8	0
Recreation	1	0
Water Infrastructure	4	1
Military	4	0
TOTAL	104	18

3.6.3.2. Applicant Proposed Measures

Table 3.6-10 presents the Applicant Proposed Measures (APMs) for cultural resources.

Table 3.6-10. Applicant Proposed Measures – Cultural Resources

APM	Description
Cultural Resources	
APM CUL-1	Develop Cultural Resource Management Plan. SCE shall prepare and submit for approval a Cultural Resource Management Plan (CRMP) to guide all cultural resource management activities during 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 the BLM, CPUC and tribes for review and approval at least 90 days prior to the start of construction. The CRMP shall include, but not be limited to, the following sections: ■ Cultural Resources Management Plan: The CRMP shall define and map all known cultural resources, including all NRHP- and CRHR-eligible properties in or within 100 feet of the Proposed Project APE/API. ■ The CRMP will also contain details about how all NRHP- and CRHR-eligible properties will be avoided and protected during construction. Protective measures shall include, at a minimum

APM	Description
Cultural Resources	
	designation and marking of Environmentally Sensitive Areas (ESAs), archaeological monitoring, personnel training, and reporting. The plan shall also detail what avoidance measures will be used, where and when they will be implemented, lines of authority and communication, and how avoidance measures and enforcement of ESAs will be coordinated with construction personnel. ■ Cultural Resource Monitoring and Field Reporting: Detail procedures for archaeological and Native American monitoring, for reporting protocols, and for determining when monitoring is no longer necessary. Include guidelines for monitoring in Areas of High Sensitivity for the discovery of buried NRHP and/or CRHR eligible cultural resources, including burials, cremations, or sacred sites. ■ Unanticipated Discovery Protocol: Detail procedures for 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. 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 appropriate Native American tribes and approved by the BLM and CPUC, prior to implementation. ■ Data Analysis and Reporting: 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, GIS shapefiles, and analytical data) at a facility that is approved by the BLM and CPUC, and dissemination of reports to appropriate repositories.
APM CUL-2	Avoid Environmentally Sensitive Areas (ESAs). SCE shall perform surveys for any project areas not yet surveyed (e.g., new, or modified staging areas, pull sites, or other work areas) and areas covered by expired surveys (older than 10 years). Resources discovered during the surveys would be subject to Mitigation Measures 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 mechanisms shall include fencing off Environmentally Sensitive Areas (ESAs) for the duration of the Proposed Project or as outlined in the CRMP.
APM CUL-3	Conduct Construction Monitoring. Archaeological monitoring shall occur as outlined in the CRMP, including but not limited to the archaeological monitor's authority, duties, and reporting requirements. 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 area. A Native American monitor may be required at culturally sensitive locations specified during government-to-government consultation with Native American tribes. SCE shall retain and schedule any required Native American monitors. The qualifications of the principal archaeologist and monitors shall be approved by the BLM and CPUC. Brief monitoring reports shall be submitted to the BLM and CPUC on a weekly basis. A monitoring report presenting the results of the monitoring effort shall be prepared and submitted to BLM and the CPUC for review and approval within one year of the completion of monitoring.
APM CUL-4	Properly Treat Human Remains. SCE shall follow all federal and state laws, statutes, and regulations that govern the treatment of human remains. Minimally, all work in the vicinity of such as find will cease within a 200-foot radius of the remains and the area will be protected to ensure that no additional disturbance occurs. Should inadvertent effects to or unanticipated discoveries of human remains be made on federal lands, the BLM, 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).

APM	Description
Cultural Resources	
	If the remains are not on federal land, the CPUC and County Coroner shall be notified immediately and the remains shall be treated in accordance with Health and Safety Code Section 7050.5, CEQA Section 15064.5€, and Public Resources Code Section 5097.98. SCE shall assist and support the BLM and/or state agencies, as appropriate, in all required NAGPRA and Section 106 actions, government to-government and consultations with Native Americans, agencies, and consulting parties as requested by the BLM and/or state agencies. SCE shall comply with and implement all required actions and studies that result from such consultations.
APM TCR-1	Tribal Monitoring. An archaeological monitor, and tribal monitor that is culturally affiliated with the project area, may be present for all ground-disturbing activities within or directly adjacent to identified TCR(s). The archaeological and tribal monitors will consult the CRMP to determine when to increase or decrease the monitoring effort should the monitoring results indicate a change is warranted. Monitoring reports will be prepared and submitted to the BLM and 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).

3.6.3.3. Impact Significance Criteria

The significance criteria listed below are from the Environmental Checklist Form in Appendix G of the CEQA Guidelines. They are used to determine whether the Proposed Project or alternatives would result in significant impacts under CEQA related to cultural resources. Under CEQA, the Proposed Project would cause a significant impact if it caused a substantial adverse change in the significance of a historical resource, an archeological resource, or human remains as defined under CCR, Title 14, Chapter 3, Section 15064.5.

The Proposed Project would result in a significant impact if any of the following occurred:

- CUL-1: Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5?
- CUL-2: Cause a substantial adverse change in the significance of a unique archaeological resource as defined in CEQA Guidelines Section 15064.5?
- CUL-3: Disturb any human remains, including those interred outside of formal cemeteries?

CEQA Guidelines §15064.5 defines a substantial adverse change in the significance of a historical resource as physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that its significance is materially impaired. The following activities that could occur as a result of the Proposed Project may result in a substantial adverse change in the significance of historical resources, as discussed below:

- Physical, visual, or audible disturbances resulting from construction and development that would affect the integrity of a resource or the qualities that make it eligible for the CRHR;
- Exposure of resources to vandalism or unauthorized collecting;
- A substantial increase in the potential for erosion or other natural processes that could affect resources;
- Neglect of a resource that causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to a Native American tribe; or
- Transfer, lease, or sale of a resource out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the resource's historic significance.

3.6.3.4. Construction or Operational Activities Causing Impacts

Construction activities can damage or destroy cultural resources due to the following types of activities:

- **Subtransmission Structures:** Installation of new transmission structures and removal of existing structures. Structure installation and removal can require excavation and grading. Work would occur within an area of approximately ¾ acre at each structure.
- **Staging and Material Yards:** As defined in Table 2-4 (in Chapter 2), there are 54 potential yards that may be used to support construction activities. These yards are between one and five acres each, and they are located along the route. Most are already paved or disturbed, but some may require additional grading.
- **Access Roads:** As defined in Section 2.4.1.4 (in Chapter 2), approximately 306 miles of existing access roads may require minor rehabilitation (additional grading or widening). Public roads would also be used, and no new permanent access roads would be developed.
- **Vegetation Removal:** During road rehabilitation and preparation of staging areas, vegetation would be trimmed or removed, as needed.
- **Helicopter Use:** SCE would use helicopters to support construction activity, including installation and removal of structures, delivery of equipment and materials, and installation of marker balls and conductor.
- **Construction Personnel:** SCE anticipates approximately 200 construction personnel working on a given day; these personnel would be working on different tasks along the 262-mile alignment.

Operation and Maintenance. Activities that would occur during operation and maintenance are defined in Section 2.5.1. Maintenance could include activities such as repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, replacing poles and towers, tree trimming, brush and weed control, and access road maintenance. SCE states that it performs most regular operations and maintenance activities of overhead facilities from existing access roads with no surface disturbance. However, some repairs done to existing facilities, such as repairing or replacing existing poles and towers, could occur in areas previously undisturbed. Some pole locations and/or laydown areas for repairs or replacement of built facilities could be in previously undisturbed areas and could result in ground and/or vegetation disturbance. In some cases, new access would need to be created to remove and replace an existing pole.

Indirect Effects. In addition to the ground disturbing activities described above, construction, operation and maintenance and closure and decommissioning of the Proposed Project could have an indirect impact on historic-era architectural resources and culturally sensitive areas. While auditory and atmospheric intrusions are possible, the primary indirect impact is expected to be associated with visual impacts associated with the introduction of large electrical transmission infrastructure to the landscape. Anticipated indirect impacts associated with the Proposed Action potentially affecting cultural resources include the potential for the subtransmission line to create a visual intrusion into the flat landscape to a maximum height of 135 feet.

3.6.3.5. Impacts and Mitigation Measures

Impact CUL-1: Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines § 15064.5.

Construction

Precontact and Historic Era Archaeological Resources

Direct Impacts to Precontact Resources

SIGNIFICANT AND UNAVOIDABLE. As described in Section 3.6.3.1 (Impact Analysis Approach), there are 303 known archaeological resources (precontact and historic age) that are eligible for the CRHR located within the Direct API. Of the 303 known eligible archaeological resources, 287 have the potential to be significantly impacted by the Proposed Project's ground disturbing construction activities, as identified in detail in Tables Ap.5-1 through Ap.5-4 in Appendix 5A. These non-renewable resources provide an important window into California's past, including Native American traditional lifeways. As described in detail in Section 3.6.3.1 (Impact Analysis Approach), most resources are eligible to the CRHR under Criterion 4 for research potential and any direct impacts to these resources could jeopardize that research potential.

In addition to the potential impacts to the known archaeological resources (identified in Tables Ap.5-1 through Ap.5-4 in Appendix 5A), there is the potential for construction activities to result in exposure of unknown buried archaeological resources that could be considered historical resources under CEQA, especially in Segment 1 (the most archaeologically dense area of the Proposed Project). If construction resulted in damage to unknown buried resources that are eligible for the CRHR, as described in more detail below, a significant impact would occur.

The Proposed Project includes three APMs that address the protection of cultural resources (see Table 3.6-10) to reduce known significant impacts. However, APMs CUL-1, CUL-2, and CUL-3 do not present performance standards, staff qualifications, defined roles and responsibilities, buffer zones, reporting standards, and other information that is needed to ensure that cultural resources are adequately protected and managed.

Because the APMs are not adequately detailed, construction-related impacts to historical resources would be significant. To reduce this impact, this analysis defines a suite of recommended mitigation measures that supersede APMs CUL-1 through CUL-3 and expand on the information provided in APMs. Mitigation measures, including data recovery excavations, are generally considered appropriate and feasible means to reduce adverse effects to archaeological resources, consistent with §15126.4(b)(3). Direct construction-related impacts to known and unknown buried archaeological resources would be reduced in severity with implementation of Mitigation Measures CUL-1a through CUL-1l, which are summarized as follows (the full text is presented below).

- **Mitigation Measure CUL-1a (Retain a Cultural Resources Specialist)**: Requires SCE to hire an archaeologist as a designated lead Cultural Resources Monitor (CRM) with demonstrated prior experience in the Owens Valley and Mojave Desert regions and previous experience working with Southern California Tribal Nations.
- **Mitigation Measure CUL-1b (Cultural Resources Environmental Awareness Training):** Requires that SCE provide training for all project personnel for awareness of laws and penalties, artifacts that may be found, sensitivity of each area, and authority of the CRM in stopping construction.
- **Mitigation Measure CUL-1c (Prepare and implement a Cultural Resources Management Plan; *supersedes APM CUL-1 and APM CUL-2*):** Defines the contents of the CRMP, monitoring process and schedule, Environmentally Sensitive Areas (ESAs), and processes to be implemented in the event that unanticipated resources or human remains are discovered.

- **Mitigation Measure CUL-1d (Cultural Resources Monitoring; *supersedes APM CUL-3*)**: Requires full-time on-site monitoring in Segment 1 and near known eligible resources in other segments during construction; defines monitoring processes and record-keeping.
- **Mitigation Measure CUL-1e (Tribal Monitoring; *supersedes APM CUL-3*)**: Requires that SCE employ tribal monitors during all ground disturbing activities.
- **Mitigation Measure CUL-1f (Remove Structures by Helicopter in Culturally Sensitive Areas)**: Requires SCE to identify structures in culturally sensitive areas that would be removed by helicopter to minimize ground disturbance.
- **Mitigation Measure CUL-1g (Leave All Foundations in Place for Structures Removed in Culturally Sensitive Areas)**: Requires certain structure foundations to be left in place (rather than excavated to remove all foundation components), to minimize disturbance of subsurface cultural materials and the existing landscape.
- **Mitigation Measure CUL-1h (Avoid Disturbance Within Environmentally Sensitive Area):** Requires avoidance of two defined resources and restoration of existing access roads within site boundaries.
- **Mitigation Measure CUL-1i (Mitigate Loss from Dismantling of Historic-Era "Tower Line" Transmission Lines (P-36-010316)):** Requires the preparation of a small publication suitable for selling in historical museums to mitigate the complete loss of P-36-010316.
- **Mitigation Measure CUL-1j (Avoid and/or Mitigate Loss from Direct Impacts to Historic-Era Archaeological Resources Contributing to the Rand Historic District (P-15-007069)):** Requires the preparation of formal documentation of the historic district which includes the preparation of DPR form 523D (district record) and associated maps of the district boundary and the location of all previously recorded contributors including the fourteen resources impacted here.
- **Mitigation Measure CUL-1l (Avoid Damage to Manzanar Airfield**): Require SCE to avoid use of Material Yard 1-10 or modify use to prevent damage to the historical feature.

As summarized above, Mitigation Measures CUL-1a through MM CUL-1l are designed to avoid or reduce impacts to known and unknown buried historical resources to the extent feasible. These measures include avoiding resources where feasible by establishing protected Environmentally Sensitive Areas (ESAs) during construction and maintenance, providing archaeological and Native American monitoring, evaluation of discoveries, data recovery excavations of historical resources that cannot be avoided, preparation of small publication, and preparation of formal documentation of the Rand Historic District. Implementation of these measures would substantially reduce the potential for unmitigated loss of information value. However, despite the inclusion of these feasible mitigation measures, the Proposed Project would occur in an area of exceptionally high archaeological sensitivity and continuing cultural importance to descendant communities, which is discussed in more detail in EIR Section 3.7 (Tribal Cultural Resources). Ground disturbance in this highly sensitive area with a high density of known resources has a high likelihood of impacting known archaeological resources and encountering significant buried deposits whose scientific and cultural values extend beyond the recoverable data alone. While data recovery, as defined in Mitigation Measure CUL-1c, can mitigate for the loss of information potential, it cannot fully offset the anticipated loss of the physical integrity, spatial relationships, and cultural associations that contribute to the significance of these resources.

Therefore, although the recommended mitigation measures would reduce adverse effects to the extent feasible, the construction of the Proposed Project would nonetheless result in the permanent loss of portions of resources within a culturally rich and sensitive archaeological area. As such, the impact on eligible precontact and historic era archaeological resources would remain significant and unavoidable, even after implementation of all mitigation.

Direct Impacts to SWCA-L030-1056 and SWCA-L030-1056B

SIGNIFICANT AND UNAVOIDABLE. There are two particularly large and valuable sites located north of the community of Lone Pine. The sites (identified as SWCA-L030-1056 and SWCA-L030-1056B) encompass the entire disturbance area that would be required for the construction of one new structure and removal of an existing structure. Project effects would create a significant impact.

Avoidance of any new ground disturbance within the boundaries of these sites is required to minimize further damage. In addition, use of the existing access road between the two adjacent SCE structures would cause substantial further damage, so access options are required.

The specific location is not identified due to confidentiality requirements, but its avoidance and treatment is defined in Mitigation Measure CUL-1h (Avoid Disturbance Within Environmentally Sensitive Area). The measure defines the relocation of one specific structure, allowing the Project to span the entire site, the prohibition of use of the existing access road between the two adjacent sites, and the restoration of the existing access road to prevent future use by SCE or others. Due to the size of the site and the potential that its features extend beyond the current mapping, this impact remains significant and unavoidable, even with implementation of Mitigation Measure CUL-1h.

This resource would be avoided by the Manzanar Realignment Alternative, but the removal of existing structures would still be required. Mitigation Measure CUL-1h would apply to the alternative as well as the Proposed Project.

Direct Impacts to the Rand Historic District

SIGNIFICANT AND UNAVOIDABLE. Significant and unavoidable direct impacts are anticipated to 14 contributors to the Rand Historic District (P-15-007069) located within central region of San Bernardino County, near Barstow (P-15-002500, SWCA-L030-1168, SWCA-L030-1173, SWCA-L030-1174, SWCA-L030-1177, SWCA-L030-1184, SWCA-L030-1185, SWCA-L030-5150, SWCA-L030-5151, SWCA-L030-5152, SWCA-L030-5153, SWCA-L030-5154, SWCA-L030-5155, SWCA-L030-5161). A California State Historical Landmark, the Rand Historic District commemorates a mining region operating in gold, tungsten and silver for 35 years. These individual resources each contribute to the significance of the larger Rand Historic District because they possess characteristics that support the district's overall historical, cultural, or scientific value.

The sites would be impacted by various types of ground disturbing construction including the removal of steel lattice suspension structures and their associated demolition sites, the installation of TSP monopoles and their associated structure work areas, shunt removal areas, splice sites, pull sites, guard sites, and access roads that will be graded and improved as needed. Project effects would create a significant impact to each of the fourteen historic-era resources. Avoidance of any new ground disturbance within the boundaries of these sites is not feasible. Treatment is defined in Mitigation Measure CUL-1j. The measure requires the preparation of formal documentation of the historic district which includes the preparation of DPR form 523D (district record) and associated maps of the district boundary and the location of all previously recorded contributors including the fourteen resources impacted here.

The effects of the Proposed Project would create a significant impact in the permanent loss of portions of CRHR-eligible resources that are also part of a California State Historical Landmark. As such, the impact on these 14 eligible historic-era archaeological resources would remain significant and unavoidable, even after implementation of Mitigation Measure CUL-1j (Avoid and/or Mitigate Loss from Direct Impacts to Historic-Era Archaeological Resources Contributing to the Rand Historic District (P-15-007069)).

Indirect Impacts to Historic Era Archaeological Resources

LESS THAN SIGNIFICANT. There are 196 historic era archaeological resources potentially subject to indirect impacts as identified in Table Ap.5-7 (Appendix 5A). However, the visual changes resulting from the replacement of Proposed Project structures with other steel structures would be similar, in nature and

scale, to the existing subtransmission structures. Therefore, the Proposed Project would not cause a substantial indirect adverse change in the significance of a historical resource, impacts would be less than significant, and no mitigation is necessary.

Historic Era Built Environment Resources

Direct Impacts to Built Environment Resources

LESS THAN SIGNIFICANT WITH MITIGATION. In total, 74 built environmental resources are considered historical resources under CEQA and could be subject to significant construction related impacts (see Table Ap.5-5 in EIR Appendix 5A). Most are roads and highways, although several of these are wagon roads and/or prehistoric routes that are eligible for the CRHR due to their association with the Patsiata Historic District. Most built features would be spanned and avoided.

Table 3.6-9 presents details about the 40 built environment resources subject to direct impacts and the potential project-related impacts that could occur. The Proposed Project includes three APMs that address the protection of cultural resources (see Table 3.6-10) to reduce known significant impacts. However, APMs CUL-1, CUL-2, and CUL-3 do not present performance standards, staff qualifications, defined roles and responsibilities, buffer zones, reporting standards, and other information that is needed to ensure that cultural resources are adequately protected and managed.

Because the APMs are not adequately detailed, construction-related impacts to historical resources would be significant. To reduce this impact, this analysis defines a suite of recommended mitigation measures that supersede APMs CUL-1 through CUL-3 and expand on the information provided in APMs. Direct construction related impacts to built environment resources will be less than significant with implementation of Mitigation Measures CUL-1a through CUL-1d which supersede APM CUL-1 through APM CUL-3). These measures are designed to avoid or reduce impacts to known built environment historical resources to the extent feasible. These measures include avoiding historical resources, which include eligible built environment resources, where feasible by establishing protected Environmentally Sensitive Areas (ESAs) during construction and O&M, providing monitoring to ensure avoidance, and provide an explanation of procedures to follow to mitigate impacts to those resources that cannot be avoided. With implementation of Mitigation Measures CUL-1a through CUL-1d, impacts to built environment features would be less than significant.

Direct Impacts to Bishop Creek-San Bernardino "Tower Line"

SIGNIFICANT AND UNAVOIDABLE. One built environment resource will be dismantled, rendering a loss of a portion of the SCE 12 kV and 115 kV transmission line (P-36-010316) located in the Owens Valley and Mojave Desert. The Bishop Creek to San Bernardino "Tower Line" is comprised of five transmission line segments comprised of 70-feet tall double-circuit steel lattice towers and conductors mounted on steel and wood poles. Built in 1912-1913, the "Tower Line" is CRHR-eligible under Criteria 1 and 3 or its role in the electrification and industrialization of the Southern California Inland Empire region, and for its embodiment of a distinctive electric power conveyance system that conveyed electricity at high voltage over a long distance of 238 miles. It is also CRHR-eligible as a contributor to SCE Bishop Creek Hydroelectric System Historic District.

This resource would be impacted by the removal and replacement of historic transmission towers, conductors, overhead lines, and poles along the corridor. Project components within the site boundary consist of multiple guard and pull sites, installation of the Telcom alignment, associated work and construction areas, and access roads that will be graded and improved as needed.

Avoidance of any new ground disturbance within the boundaries of these sites is not feasible. Treatment is defined in Mitigation Measure CUL-1i. The measure requires the preparation of a small publication suitable for selling in historical museums to mitigate the complete loss of P-36-010316.

The removal and replacement of the CRHR-eligible transmission towers and conductor will result in a complete loss of integrity for the portion of this resource that is removed, such that the historic line would no longer convey its identified significance. Due to the dismantling of this resource, this impact remains significant and unavoidable, even with implementation of mitigation. To mitigate the loss of P-36-010316, Mitigation Measure CUL-1i (Mitigate Loss from Dismantling of Historic-Era "Tower Line" Transmission Lines (P-36-010316)) defines the requirement that SCE prepare a publication suitable for local historic museums. This measures requires that SCE prepare a publication that will recount the historical importance of the transmission line, the significant events and people associated with the transmission line, and the distinctive engineering and architectural characteristics attributed to the design of the transmission line.

Direct Impacts to the Manzanar Airfield

LESS THAN SIGNIFICANT WITH MITIGATION. As shown in Table 2-3 (Potential Material Yard Locations), SCE proposes the potential use of the 4.6-acre site as a project construction yard. During scoping and in site visits with SCE and the cultural resources team, National Park Service (NPS) staff at the Manzanar National Historic Site described their concern related to potential impacts that would result from SCE's proposed use of the Manzanar Airfield area for a Material Yard. While the airfield is not within the boundaries of the NPS site or the designated National Historic Landmark, it is an important component of the Manzanar War Relocation Center facilities. The use of the airfield for a material yard has the potential to damage an important historical resource; any damage to the airfield surfaces would be a significant impact. Mitigation Measure CUL-1l (Avoid Damage to Manzanar Airfield) would ensure that impacts to the airfield are less than significant.

Indirect Impacts to Built Environment Resources

LESS THAN SIGNIFICANT. There are 34 built environment historical resources potentially subject to indirect impacts (see Table Ap.5-6 in EIR Appendix 5A). However, the visual changes resulting from the replacement of Proposed Project structures would be similar, in nature and scale to the existing subtransmission structures. Therefore, the Proposed Project would not indirectly cause a substantial adverse change in the significance of a historical resource, and no mitigation is necessary.

Operation and Maintenance

LESS THAN SIGNIFICANT WITH MITIGATION. As described in Section 3.6.3.4*,* O&M activities could include ground disturbing activities, such as access road grading and pole replacements, that could occur in previously disturbed or undisturbed locations. As such, O&M activities could cause a significant impact to known and buried unknown historical resources in the Direct API.

To reduce the potential effects of maintenance activities, the following mitigation measures would be required:

- **Mitigation Measure CUL-1b (Cultural Resources Environmental Awareness Training)** requires annual WEAP training for personnel responsible for O&M activities, during which the crew would be made aware of procedures to follow in the event of unanticipated discoveries of cultural resources.
- **Mitigation Measure CUL-1c** (**Prepare and implement a Cultural Resources Management Plan)** requires personnel be provided with access to a non-confidential GIS database showing ESAs that should be avoided by O&M activities.

With implementation of these two mitigation measures that define actions required during maintenance activities, impacts to historical resources, known and unknown, from these activities will be less than significant.

Mitigation Measures for Impact CUL-1

MM CUL-1a **Retain a Cultural Resources Specialist.** Prior to the start of construction, SCE shall identify a project Cultural Resources Specialist (CRS) and one or more alternates whose training and background conforms to the U.S. Secretary of Interior's Professional Qualifications Standards, as published in Title 36, Code of Federal Regulations, part 61 (36 C.F.R., part 61). The CRS shall be retained by SCE to supervise monitoring of construction excavations and to prepare a Cultural Resources Management Plan (CRMP; see Mitigation Measure CUL-1c) for the approved project. Their qualifications shall be appropriate to the needs of the project, specifically an archaeologist with demonstrated prior experience in the Owens Valley and Mojave Desert regions and previous experience working with Southern California Tribal Nations. A copy of their qualifications shall be provided to the CPUC for review and approval prior to beginning work. The project Cultural Resources Specialist and alternate(s) shall use the services of Cultural Resources Monitors (CRMs), tribal monitors and field crew as needed, to assist in mitigation, monitoring, as needed curation, and reporting activities, as outlined in the CRMP. A copy of all proposed cultural staff qualifications shall be provided to the CPUC for review and approval prior to beginning work.

MM CUL-1b **Develop Data Recovery Plans for Known Historical Archaeological Resources**. If avoidance or preservation in place of an NRHP or CRHR listed or eligible resource is not feasible by the project design, then a data recovery plan shall be developed by the CRM for those impacted resources by Project segment. For precontact sites, the data recovery plan shall be developed in consultation with consulting tribes, for the portion of the resource that will be directly impacted, and will be limited to scientifically consequential data, per CEQA Guidelines § 15126.4(b)(3). The Data Recovery Plan shall include, but is not limited to, the follow:

- Specific to precontact sites on non-federal land, based on discussion with consulting tribes, alternative treatment may include no collection of any artifacts at all or some collection of artifacts and samples, for the portion of the resource that will be directly impacted. The Data Recovery Plan for each resource that cannot be avoided shall be provided by SCE to the CPUC for review and approval and to consulting tribes for review prior to implementation.
- Specific to precontact sites on non-federal land, if any artifacts or samples are collected, they will be temporarily stored at a secure location in the Owens Valley for the duration of ground disturbing activities. When ground disturbing activities have concluded, tribes will be consulted for repatriation of all collected material.
- Specific to precontact sites, no collected material will be removed from Owen's Valley without the consent of consulting tribes. Any proposed laboratory methods will be developed with this in mind.
- Storage of any collected cultural material shall be located within the SCE Material Yards, in a secure container (e.g., a secure offsite building or a Conex box). Tribal monitors and Tribal Historic Preservation Officers will be given access to the storage facility.
- Repatriation of precontact cultural material collected will be the first priority. If a consulting tribe elects for repatriation of material and requests reburial of said material on or near the project, a good faith effort will be made by SCE, CPUC, and consulting tribes to identify a location and method of reburial that is acceptable to all parties. If repatriation or reburial is not feasible, or an agreement cannot be reached for a reburial location or method, then the plan shall include a commitment to curate all artifacts retained as a result of any archaeological investigations in accordance with applicable laws, appropriate requirements, and the California State Historical Resources Commission's

Guidelines for the Curation of Archaeological Collections. Artifacts shall be placed into a retrievable storage collection in a public repository or museum.

- A final report shall be written for data recovery efforts undertaken and submitted to the CPUC for review and approval prior to the start of construction beginning in that specific area. Once approved the report(s) will be sent to the appropriate CHRIS information center.

MM CUL-1c **Implement Cultural Resources Environmental Awareness Training.** The Construction Training and the Operations and Maintenance (O&M) Training programs shall be defined in a Training Plan that shall be submitted to the CPUC for approval at least 30 days before the start of construction.

Construction Training. Prior to the start of ground disturbing activity, all project personnel who are not trained archaeologists or tribal monitors shall receive Cultural Resources Environmental Awareness Training that includes sensitivity training provided through participating tribes and recorded for presentation in video format. The training shall define appropriate work practices necessary to effectively implement the APMs and mitigation measures related to cultural resources and tribal cultural resources, including practices to implement in the event that human remains are found.

Training shall include:

- A discussion of applicable laws and penalties under the law;
- Samples or visuals of artifacts that might be found in the project vicinity;
- A brief review of the cultural sensitivity of the project and the surrounding area;
- A discussion and illustrations of what such artifacts may look like when partially buried, or wholly buried and then freshly exposed;
- A discussion and illustrations of what precontact and historical archaeological deposits look like at the surface and when exposed during construction, and the range of variation in the appearance of such deposits;
- Instruction that Cultural Resources Monitors (CRMs)s and Tribal Monitors have the authority to halt ground disturbance within 100 feet (30 meters) of an inadvertent cultural resource discovery to an extent sufficient (determined by CRMs and Tribal Monitors) to ensure that the resource is protected from further impacts, until the resource can be evaluated;
- Instruction that employees are responsible to halt work on their own within 100 feet (30 meters) of a potential cultural resources discovery and shall contact their direct supervisor, a CRM, and/or the Cultural Resources Specialist (CRS) and that redirection of work to ensure avoidance of impact of discovery would be determined by the construction supervisor and the CRS;
- A printed version (or reference while at work site) of an informational brochure reviewed and approved by participating tribes that identifies reporting procedures workers and relevant contact information in the event of an inadvertent cultural resources discovery;
- An acknowledgement form signed by each worker indicating that they have received the training and the informational brochure; and
- A sticker that shall be placed on hard hats indicating that environmental training has been completed.

  Training shall be required for all personnel who are not trained archaeologists or tribal monitors before they begin work on a project site and repeated for all new personnel who are not trained archaeologists or tribal monitors before they begin work on the Project. Documentation of the ongoing training shall be provided to the CPUC on a

monthly basis during construction. The CPUC will provide documentation to the consulting tribes.

Operations and Maintenance Training. The cultural resources awareness training program developed for construction workers shall be given annually to all field personnel after the Project is operational to ensure that the crew performing maintenance activities is aware of potential resources and the steps to take if resources are identified. The Operations and Maintenance Training Plan shall include a schedule for training to ensure that all field personnel are trained prior to performing maintenance work. The plan shall define procedures to be followed upon the discovery or suspected discovery of archaeological materials, tribal cultural resources, and human remains, consistent with the procedures set forth in the CRMP and the construction plan described above. This training may be integrated with a broader Worker Environmental Awareness Training program. Documentation of the ongoing training (e.g., sign-in sheets) shall be provided to the CPUC on an annual basis. The CPUC will provide documentation to the consulting tribes.

MM CUL-1d **Prepare and implement a Cultural Resources Management Plan** (supersedes APM CUL-1). The CRMP shall be submitted to the CPUC for review approval at least 60 days before the start of construction and must be maintained and utilized through the life of the Project, including maintenance activities. The CRMP shall include the following components:

- An introduction outlining the project description, purpose for monitoring, summary of resources studies or description of known resources, anticipated construction schedule, anticipated impacts to cultural resources, unanticipated discovery protocol, repatriation and reburial, and treatment options.
- A description of the monitoring personnel involved with the CRS, Cultural Resources Monitors, and Tribal Monitors and their roles and responsibilities.
- Development and establishment of a formal monitoring schedule (consistent with the requirements of Mitigation Measures CUL-1d and CUL-1e).
- An outline of the expectations for all monitors, including Tribal monitors. A defined protocol for reporting any issues or concerns identified with the behavior of any monitor.
- A definition and description of authorities, protocols, and procedures for halting and/or pausing work in order to record, evaluate and identify any necessary treatment for any cultural resources encountered. This shall include protocols for ensuring all treatment or recovery of cultural resources is completed prior to work resuming in the area of the find.
- A description of the cultural resources Environmental Awareness Training Program (see Mitigation Measure CUL-1b) and when and how that will take place.

The CRMP shall also define the following actions:

- **Establishing Environmentally Sensitive Areas (ESAs):** ESAs shall be established with a 50 foot buffer around each NRHP and CRHR listed or eligible resource prior to project activities. If the 50-foot buffer would encroach on a work area, the ESA buffer shall be the near edge of the identified work area.
- **Develop Work Stoppage Plan for Previously Undiscovered Resources:** If previously undiscovered cultural resources (sites, features, or artifacts) are identified during project activities, all construction activities within 100 feet (30 meters) of the resource shall halt. The plan shall detail procedures for 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. The plan shall include methods, timelines for assess-

ing NRHP and/or CRHR eligibility, formulation of mitigation plans with an emphasis on avoidance, and implementing treatment. Mitigation and treatment plans for unanticipated discoveries shall be reviewed and approved by the CPUC, prior to implementation.

- **Develop Data Recovery Plan for Previously Undiscovered Resources:** If avoidance of an NRHP or CRHR listed or eligible resource is not feasible, then a data recovery plan shall be developed by the CRM. For precontact sites, the data recovery plan shall be developed in consultation with consulting tribes, for the portion of the resource that will be directly impacted, and will be limited to scientific consequential data, per CEQA Guidelines § 15126.4(b)(3). The Data Recovery Plan shall define the following options for treatment.
  - If avoidance of an NRHP or CRHR listed or eligible resource is not feasible, a plan for data recovery will be developed. Based on discussion with consulting tribes, alternative treatment may include no collection of any artifacts at all or some collection of artifacts and samples, for the portion of the resource that will be directly impacted. The Data Recovery Plan for each resource that cannot be avoided shall be provided by SCE to the CPUC for review and approval and to consulting tribes for review prior to implementation.
  - If any artifacts or samples are collected on non-federal lands, they will be temporarily stored at a secure location within the project area for the duration of ground disturbing activities. When ground disturbing activities have concluded, tribes will be consulted for reburial of the discovery and tribal monitors will participate in these efforts.
  - No collected material will be removed from Owen's Valley without the consent of consulting tribes. Any proposed laboratory methods will be developed with this in mind.
  - Temporary storage of any collected cultural material shall be located within the SCE Material Yards, in a secure container (e.g., a Conex box), or in a secure building within the project area. Tribal monitors and Tribal Historic Preservation Officers will be given access to the storage container.
  - Repatriation of precontact cultural material collected will be the first priority. If a consulting tribe elects for repatriation of material and requests reburial of said material on or near the project, a good faith effort will be made by SCE, CPUC, and consulting tribes to identify a location and method of reburial that is acceptable to all parties. If repatriation or reburial is not feasible, or an agreement cannot be reached for a reburial location or method, then the plan shall include a commitment to curate all artifacts retained as a result of any archaeological investigations in accordance with applicable laws, appropriate requirements, and the California State Historical Resources Commission's Guidelines for the Curation of Archaeological Collections. Artifacts shall be placed into a retrievable storage collection in a public repository or museum. Tribes will be invited to participate monitor the data recovery efforts.
  - A final report shall be written for each data recovery and/or alternative treatment efforts undertaken and submitted to the CPUC for review and approval prior to submitting it to the appropriate CHRIS information center.
- **Assessment of Human Remains.** The CRMP shall define the processes to be implemented in the event that human remains or suspected human remains are identified. SCE shall comply with California law (Health and Safety Code Section 7050.5; PRC Sections 5097.94, 5097.98, and 5097.99). The area shall be flagged off and all project activities within 200 feet (60 meters) of the find shall immediately cease. The CPUC-approved

CRS shall be immediately notified. SCE shall immediately contact the County Coroner's office, the CPUC, as well as representatives of consulting tribes. Consulting tribes may opt of notification and allow Tribal Monitors to provide protection during the time-frame that there is an open grave. The Medical Examiner has two (2) working days to examine the remains. If the Medical Examiner believes the remains are Native American, they shall notify the California Native American Heritage Commission (NAHC) within 24 hours.

The CRMP shall state that SCE will pay fees associated with reburial or curation for artifacts recovered and for related documentation produced during cultural resources investigations conducted for the project shall be stated. Should consulting tribes request that artifacts not be reburied, the CRMP shall identify a curation facility that could accept cultural resources materials resulting from project cultural resources investigations on private or state land. Tribal monitors shall be present for any reburials.

The CRMP shall consider the use of Historic Human Remains Detection (HHRD) dogs before the start of ground disturbance in Segment 1. The purpose of using HHRD dogs would be to identify areas with human remains prior to their being disturbed by construction activity and to evaluate whether the construction disturbance areas can be re-defined to avoid the areas where remains were identified by the dogs. Selection of areas where HRD dogs would be used shall be based on tribal consultation, and tribal monitors must be invited and paid during use of HRD dogs. If the dogs identify the likely presence of human remains, SCE shall consult with tribes and shall evaluate feasibility of relocating the ground disturbing activities at least 50 feet outside of the area where human remains were detected. This process shall be defined in the CRMP.

- **Weekly progress reports on cultural resources activities** shall be provided to the CPUC during the duration of monitoring efforts (see Mitigation Measure CUL-1d). These reports shall include number of monitors and their locations, their tribal affiliations, discoveries, and artifacts collected, and any issues of concern raised by tribes, monitors or construction staff. A final report shall be prepared presenting the results of the monitoring efforts within 6 months of conclusion of Project activities. The contents, format, and review and approval process of the final report shall meet appropriate federal, state, and local guidelines and will be submitted to the CPUC, and the appropriate CHRIS Information Center(s).

Operations and Maintenance: The CRMP shall include a section defining protection of cultural resources during maintenance activities. The following issues shall be addressed:

- SCE will develop a non-confidential GIS database that shows ESAs that will be avoided during O&M activities. The database will be made available to O&M staff to ensure all NRHP and CRHR eligible or listed resources are avoided during O&M activities.
- Before O&M activities are to commence in project areas requiring survey, SCE shall perform cultural resources surveys for any APIs not yet surveyed (e.g., new, or modified staging areas, pull sites, or other work areas) and areas covered by expired surveys (older than 10 years). This includes areas of planned O&M activity. Resources discovered during the surveys will be evaluated and the results will be prepared in stand-alone reports and finally incorporated into this CRMP and managed accordingly.

MM CUL-1e **Cultural Resources Monitoring.** During construction and demolition activities on Segment 1, SCE shall provide qualified Cultural Resources Monitors (CRMs) to conduct full-time on-site monitoring during all ground disturbing activities, including those activities occurring in previously disturbed soil. During construction on Segments 2, 3N, and 3S,

CRMs shall conduct full-time on-site monitoring during all ground disturbing activities within 100 feet of a NRHP or CRHR listed or eligible resource.

Where multiple areas of work are concurrently permitted for ground disturbance, or where multiple pieces of equipment are operating within the same work area, there shall be multiple monitors (at least one for each area), and a sufficient number of CRMs shall be onsite to ensure that all concurrent ground disturbing activities are monitored. The CRS shall be responsible for creating monitoring schedules for the CRMs and specifying the locations where they will be monitoring, in coordination with SCE.

The CRMs shall work under the direction of the CRS and will submit daily logs detailing the types of construction activities, soils observed, and any discoveries to the CRS. The daily log shall also identify the nature of all resources found and the methods of mitigation treatment, and Tribal Monitors notified of discovery. The CRS shall prepare a weekly summary report on the progress or status of cultural resources related activities. The weekly summary reports shall be provided to the CPUC for review within 5 business days.

The intensity of monitoring may be adjusted with the concurrence of the CPUC, SCE and tribal representatives.

MM CUL-1f **Tribal Monitoring.** Tribal Monitors shall be employed by SCE to conduct full-time on-site monitoring during all ground disturbing activities for the duration of construction activities. The intensity of monitoring may be adjusted with the concurrence of the CPUC, SCE and tribal representatives.

Preference for Tribal Monitors will be given to consulting tribes. Should multiple consulting tribes request to monitor during construction, SCE will develop a rotating schedule to ensure an equitable monitoring workload. The schedule will be included in the CRMP (see MM CUL-1c). If a senior tribal representative is needed on the Project Area during construction, they shall be compensated in addition to the Tribal Monitors.

MM CUL-1g **Remove Structures by Helicopter in Culturally Sensitive Areas.** At least 90 days prior to the start of construction of each of the Project segments (Segments 1, 2, 3N and 3S), the CRS shall identify culturally sensitive areas for the segment on detailed maps consultation with CPUC and consulting tribes. Any existing structures within the boundaries of a known precontact-era cultural resource on private or state-owned land that is within a mapped culturally sensitive area shall be disassembled by hand, then extracted using a helicopter. The sensitive area shall then be marked by a CRS in alignment with the guidance in MM CUL-1c (CRMP) and monitored in accordance with CUL-1d (Cultural Resources Monitoring), and MM CUL-1e (Tribal Monitoring).

MM CUL-1h **Leave All Foundations in Place for Structures Removed in Culturally Sensitive Areas.** Where structures within the boundaries of a known precontact-era cultural resource on private or state-owned land that is within a mapped culturally sensitive area are to be removed, SCE shall leave the structure foundations in place, so as to minimize disturbance of subsurface cultural materials and the existing landscape. SCE shall remove structures by cutting at ground level with foundations. No excavation of foundations will take place in these defined sensitive areas.

MM CUL-1i **Avoid Disturbance Within Environmentally Sensitive Areas.** SCE shall implement the following measures at and around a defined, confidential sensitive site:

- The existing structure within the site boundaries shall be removed without any ground disturbance and in accordance with CRMP requirements defined in MM CUL-1c, in consultation with Tribal monitors.

- No new structure will be placed within the site boundaries; the structures north and south of the site will be designed to span the site, with revised height and structure locations developed in accordance with CRMP requirements defined in MM CUL-1c, in consultation with Tribal monitors.
- The existing access road between the two structures remaining north and south of the sites shall be closed to all future use, and shall be used for the Proposed Project with the minimum ground disturbance possible to allow removal of the existing structure. Closure design options shall be developed in consultation with Tribal monitors.
- Except as required for removal of the structure located within the site, SCE's access to the structures north and south of these sites shall be via access points north and south of the sites.

MM CUL-1j **Mitigate Loss from Dismantling of Historic-Era "Tower Line" Transmission Lines (P-36-010316).** To mitigate the loss of this transmission line, SCE shall prepare a publication that describes the historical importance of the transmission line, the significant events and people associated with the transmission line, and the distinctive engineering and architectural characteristics attributed to the design of the transmission line. The publication shall be suitable for display or sale in local historic museums.

MM CUL-1k **Avoid and/or Mitigate Loss from Direct Impacts to Historic-Era Archaeological Resources Contributing to the Rand Mining District (P-15-007069).** For 14 contributors to the Rand Mining District, avoidance may not be feasible. SCE shall attempt to avoid these sites, but if avoidance is not feasible, data recovery will be completed in accordance with Mitigation Measure CUL-1c. Additional mitigation for the loss of these resources will include the preparation of a formal district form for the Rand Mining District and the identification of any previously recorded contributors.

- P-15-002500
- SWCA-L030-1168
- SWCA-L030-1173
- SWCA-L030-1174
- SWCA-L030-1177
- SWCA-L030-1184
- SWCA-L030-1185
- SWCA-L030-5150
- SWCA-L030-5151
- SWCA-L030-5152
- SWCA-L030-5153
- SWCA-L030-5154
- SWCA-L030-5155
- SWCA-L030-5161

CUL-1l **Avoid Damage to Manzanar Airfield.** SCE shall not use Material Yard 1-10 (Manzanar Reward Road) if other material yards are available to support construction within Segment 1. If use of any portion of the lands surrounding Manzanar Reward Road (east of US 395) cannot be avoided and is still proposed for use by SCE for a material yard, that use shall be constrained to areas and uses specifically identified in consultation with the National Park Service (NPS) staff at the Manzanar National Historic Site and with the landowner. No use shall be allowed that could result in damage to the historic features of the airfield features. SCE shall use other material yards in place of this yard. If Material Yard 1-10 cannot be eliminated, SCE shall submit to the CPUC the following documentation at least 90 days before the start of construction on Segment 1:

- A detailed plan and map showing the area(s) that SCE would use for construction support and defining the specific uses of each area.
- Documentation of coordination with the NPS and with the landowner, showing the agreement of those parties to the uses proposed by SCE.

Impact CUL-2: Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to CEQA Guidelines §15064.5.

Construction

LESS THAN SIGNIFICANT WITH MITIGATION. No unique archaeological resources have been identified in the Direct API. As such, the Proposed Project would not impact known unique archaeological resources. However, previously unknown buried unique archaeological resources could be discovered and damaged, or destroyed, during ground disturbing work. This would cause a substantial adverse change in the significance of the archaeological resources, should they be determined to be unique archaeological resources under CEQA. Damage or destruction of a buried archaeological resource would constitute a significant impact absent mitigation. Implementation of Mitigation Measures CUL-1a through CUL-1e (full text above) would evaluate and protect unanticipated discoveries of unique archaeological resources, thereby reducing this impact to less than significant.

Operations and Maintenance

LESS THAN SIGNIFICANT WITH MITIGATION. As described in Section 3.6.3.4*,* maintenance activities could include ground disturbing activities, such as access road grading and pole replacements, that could occur in previously disturbed or undisturbed locations. As such, maintenance activities could cause a significant impact to unknown buried unique archaeological resources in the Direct API.

To ensure that potential maintenance impacts are less than significant, Mitigation Measures CUL-1b requires annual WEAP training for personnel responsible for O&M activities during which the crew would be made aware of procedures to follow in the event of unanticipated discoveries and CUL-1c requires O&M personnel have access to a non-confidential GIS database showing ESAs which will be avoided by O&M activities. Therefore, with implementation of these two mitigation measures, impacts to unknown unique archaeological resources from maintenance activities would be less than significant.

Mitigation Measures for Impact CUL-2

CUL-1a Retain a Cultural Resources Specialist

CUL-1b Cultural Resources Environmental Awareness Training

CUL-1c Prepare and Implement a Cultural Resources Management Plan

CUL-1d Cultural Resources Monitoring

CUL-1e Tribal Monitoring

CUL-1h Avoid Disturbance Within Environmentally Sensitive Area

Impact CUL-3: Disturb human remains, including those interred outside of formal cemeteries.

Construction

LESS THAN SIGNIFICANT WITH MITIGATION. As discussed previously, there are 564 archaeological resources within the Direct API. Of those two are known to contain human remains and could be impacted by Proposed Project ground disturbing construction activities as outlined in Tables Ap.5-1 through Ap.5-4 in Appendix 5A. In addition to the known resources that contain human remains, there is the possibility that previously unknown burials or human remains could be identified during the Proposed Project's ground disturbing construction activities. The disturbance of human remains would constitute a significant impact.

The Proposed Project includes APM CUL-4 (Properly Treat Human Remains; see Table 3.6-10), which defines the process to be implemented should human remains be discovered. APM CUL-4 is considered adequate to ensure that impacts to unknown buried human remains would not be significant. However,

mitigation is required to supplement APM CUL-4, because human remains discovered during construction may be a component of one or more larger archaeological sites. As discussed for Impact CUL-1, the APMs do not provide adequate protection for this more extensive potential impact. Therefore, Mitigation Measures CUL-1a through CUL-1h are also required to ensure that impacts associated with the discovery of human remains are less than significant. These measures would require worker environmental awareness training, and a CRMP that outlines avoidance feasible measures and procedures to follow in the event of the discovery of unanticipated human remains. Additionally, these mitigation measures would require archaeological and tribal monitoring and reduce the level of ground disturbance in culturally sensitive areas. With the implementation of Mitigation Measures CUL-1a through CUL-1h, impacts to known and unknown human remains would be less than significant.

Operations and Maintenance

LESS THAN SIGNIFICANT WITH MITIGATION. As described in Section 3.6.3.4 above, maintenance activities could include ground disturbing activities, such as access road grading and pole replacements, that could occur in previously disturbed or undisturbed locations. As such, maintenance activities could cause a significant impact to unknown buried resources including human remains in the Direct API.

The Proposed Project includes APM CUL-4, which defines processes that would address human remains discoveries. While APM CUL-4 defines a process for addressing unknown buried human remains that are discovered during construction, impacts would be significant in the absence of mitigation. Supplementing APM CUL-4 with Mitigation Measures CUL-1b would ensure proper treatment of known human remains, which may be components of larger archaeological sites. Mitigation Measure CUL-1b requires annual WEAP training for personnel responsible for O&M activities during which the crew would be made aware of procedures to follow in the event of unanticipated discoveries to human remains, thereby reducing the likelihood of disturbing such remains. Mitigation Measure CUL-1c requires O&M personnel have access to a non-confidential GIS database showing ESAs which will be avoided by O&M activities. Therefore, impacts to known and unknown human remains from O&M activities would be less than significant.

Mitigation Measures for Impact CUL-3

The full text of all mitigation measures is presented under Impact CUL-1.

CUL-1a Retain a Cultural Resources Specialist

CUL-1b Cultural Resources Environmental Awareness Training

CUL-1c Prepare and Implement a Cultural Resources Management Plan

CUL-1d Cultural Resources Monitoring

CUL-1e Tribal Monitoring

CUL-1f Remove Structures by Helicopter in Culturally Sensitive Areas

CUL-1g Leave All Foundations in Place for Structures Removed in Culturally Sensitive Areas

CUL-1h Avoid Disturbance Within Environmentally Sensitive Area

3.6.4. Mitigation Monitoring, Compliance, and Reporting

Table 3.6-11 presents the mitigation monitoring, compliance, and reporting information for cultural resources.

Table 3.6-11. Mitigation Monitoring Program – Cultural Resources

Mitigation Component	Text or Description
Mitigation Measure CUL-1a	**Retain a Cultural Resources Specialist**
Location	Project-wide
Monitoring/Reporting Action	SCE to retain a project cultural resources specialist (CRS)
Effectiveness Criteria	CRS is retained as approved
Responsible Agency	CPUC
Timing	Prior to and during construction
Mitigation Measure CUL-1b	**Develop Data Recovery Plans for Known Historical Archaeological Resources**
Location	Project-wide
Monitoring/Reporting Action	SCE to develop data recovery plans
Effectiveness Criteria	Data recovery plans are implemented as approved
Responsible Agency	CPUC
Timing	Prior to the start of construction
Mitigation Measure CUL-1c	**Implement Cultural Resources Environmental Awareness Training**
Location	Project-wide
Monitoring/Reporting Action	SCE to provide training)
Effectiveness Criteria	Training is implemented as approved
Responsible Agency	CPUC
Timing	30 days prior to the start of construction
Mitigation Measure CUL-1d	**Prepare and implement a Cultural Resources Management Plan (supersedes APM CUL-1)**
Location	Project-wide
Monitoring/Reporting Action	SCE to prepare and implement a cultural resources management plan (CRMP)
Effectiveness Criteria	CRMP is developed and required and implemented as approved
Responsible Agency	CPUC
Timing	60 days prior to the start of construction
Mitigation Measure CUL-1e	**Cultural Resources Monitoring (Supersedes APM CUL-3)**
Location	Project-wide
Monitoring/Reporting Action	Cultural Resources Monitors (CRMs) to conduct full-time on-site monitoring
Effectiveness Criteria	Monitoring is conducted as approved
Responsible Agency	CPUC
Timing	During construction
Mitigation Measure CUL-1f	**Tribal Monitoring (Supersedes APM CUL-3)**
Location	Project-wide
Monitoring/Reporting Action	SCE to employ Tribal Monitors
Effectiveness Criteria	Tribal Monitors are retained as approved
Responsible Agency	CPUC
Timing	During all ground disturbing activities

Mitigation Component	Text or Description
Mitigation Measure CUL-1g	**Remove Structures by Helicopter in Culturally Sensitive Areas**
Location	Project-wide
Monitoring/Reporting Action	CRS, CPUC, and consulting tribes to identify culturally sensitive areas
Effectiveness Criteria	Structure removal procedures are implemented as approved
Responsible Agency	CPUC
Timing	90 days prior to the start of construction
Mitigation Measure CUL-1h	**Leave All Foundations in Place for Structures Removed in Culturally Sensitive Areas**
Location	Project-wide
Monitoring/Reporting Action	CRS, CPUC, and consulting tribes to identify culturally sensitive areas
Effectiveness Criteria	Foundation removal procedures are implemented as approved
Responsible Agency	CPUC
Timing	During construction
Mitigation Measure CUL-1i	**Avoid Disturbance Within Environmentally Sensitive Areas**
Location	Specified environmentally sensitive areas
Monitoring/Reporting Action	SCE to implement avoidance measures
Effectiveness Criteria	Avoidance measures are implemented as approved
Responsible Agency	CPUC
Timing	During construction
Mitigation Measure CUL-1j	**Mitigate Loss from Dismantling of Historic-Era "Tower Line" Transmission Lines (P-36-010316)**
Location	Project-wide
Monitoring/Reporting Action	SCE to prepare publication
Effectiveness Criteria	Publication is prepared as approved
Responsible Agency	CPUC
Timing	During construction
Mitigation Measure CUL-1k	**Avoid and/or Mitigate Loss from Direct Impacts to Historic-Era Archaeological Resources Contributing to the Rand Mining District (P-15-007069)**
Location	Rand Mining District
Monitoring/Reporting Action	SCE to implement avoidance measures
Effectiveness Criteria	Avoidance measures are implemented as approved
Responsible Agency	CPUC
Timing	During construction
Mitigation Measure CUL-1l	**Avoid Damage to Manzanar Airfield**
Location	Along Manzanar Reward Road, east of US 395
Monitoring/Reporting Action	SCE to consult with NPS and landowner; prepare plan and map
Effectiveness Criteria	Damage to airfield is avoided
Responsible Agency	CPUC
Timing	Before start of construction and during construction

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3.7. Tribal Cultural Resources

This section describes existing environmental conditions and anticipated impacts associated with the Proposed Project for Tribal Cultural Resources. Tribal cultural resources (TCRs) are a class of resources under state law and include sites, features, places, cultural landscapes, and sacred places or objects that have cultural value or significance to a tribe. To qualify as a TCR, the resource must either: (1) be listed on, or be eligible for listing on, the California Register of Historical Resources (CRHR) or other local historic register; or (2) constitute a resource that the lead agency, at its discretion and supported by substantial evidence, determines should be treated as a TCR (PRC § 21074(a)(2)). Native American tribes that are traditionally and culturally affiliated with a geographic area can provide expert knowledge of TCRs to lead agencies.

Assembly Bill (AB) 52 (Gatto) requires that the California Environmental Quality Act (CEQA) Lead Agency send a formal notice and invitation to consult about a proposed project to all California Native American tribes who have requested such notice and are traditionally and culturally affiliated with the geographic area of the proposed project. The purpose of this consultation is to obtain tribal information and direction related to the potential significant effects on TCRs that may result from a project (PCR §21080.3.1(d)). Consultation must include discussion of specific topics or concerns identified by Tribes. This section describes the AB 52 consultation process, the results of that process, and potential impacts of the Proposed Project related to TCRs.

Owens Valley Landscape

Based on AB 52 consultation discussions with the Big Pine Paiute Tribe of the Owens Valley, Bishop Paiute Tribe, Fort Independence Band of Paiute Indians, and the Lone Pine Paiute-Shoshone Tribe, a new TCR was identified along Segment 1 of the I-C Project, the Owens Valley Landscape (OVL). The OVL contains important resources of concern including habitation sites, artifact concentrations, bedrock milling stations, traditional use areas, burial areas, trails, and rock art, all of which have cultural value to California Native American Tribes through the extensive history of occupation of the Owens River Valley over the past 11,500 years. The 285 resources within the OVL that were identified in SCE's surveys of the Proposed Project area are listed in EIR Appendix A, Table Ap.5-8.

Section Organization

The environmental setting for Tribal Cultural Resources is presented in Section 3.7.1 and relevant regulations and standards are summarized in Section 3.7.2. Section 3.7.3 describes the impacts on the environment associated with implementation of the Proposed Project. These impact discussions introduce mitigation measures that would reduce or avoid significant adverse environmental impacts. Section 3.7.4 presents the mitigation monitoring, compliance, and reporting table for tribal cultural resources. Section 3.7.5 lists references cited in this section. Chapter 4 describes the environmental impacts of the alternatives to the Proposed Project. Cumulative impacts for all disciplines are considered in Chapter 5.

This section is also informed by Section 3.6, Cultural Resources, which describes historic resources in the Proposed Project area in detail and presents mitigation measures to minimize effects on those resources. Appendix 5A supports Section 3.6, providing tables listing the resources that may be affected by the Proposed Project and the alternatives to the Project.

Appendix 5B supports the discussion of tribal cultural resources, providing a detailed summary of consultation with each of 18 Native American tribes and a copy of the CPUC's correspondence with the Native American Heritage Commission. The information presented in this section has been gathered from background research (described in Section 3.7.1.3) and from formal consultation with Native American groups (described in Section 3.7.1.2 and 3.7.).

Scoping Comments

The following scoping comments relevant to tribal cultural resources were received from the Native American Heritage Commission (NAHC), Colorado River Indian Tribes (CRIT), Fort Independence Indian Reservation (FI), and from two individuals present at scoping meetings. These comments, directed to the CPUC as Lead CEQA Agency, are as follows:

- Must provide Notice of Completion of an application/decision to undertake the project to a tribal representative of California Native American tribes that have requested notice. Must begin consultation process within 30 days of receiving a request for consultation from a California Native American tribe. (NAHC)
- Require discussion of mandatory topics of consultation if requested by a tribe and recommend discussion of discretionary topics of consultation. Maintain confidentiality of information submitted by a tribe during the environmental review process. (NAHC)
- Conclude consultation with a tribe when parties agree to measures to mitigate or avoid a significant effect, or when a party acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. Recommend mitigation measures agreed upon in consultation. (NAHC)
- Require consulting with the appropriate tribes identified by the NAHC by requesting a Tribal Consultation List. Conclude SB 18 tribal consultation when parties come to a mutual agreement concerning mitigation measures or the local government or tribe concludes that mutual agreement cannot be reached. (NAHC)
- Concerns with tribal consultation and impacts to cultural resources relating to road improvements. (scoping meeting comment)
- Concern with potential impacts to cultural resources from construction of the 62 new transmission line structures along the 96-mile Segment 4 located between the Coolwater Substation and the Ivanpah Substation. [Note that Segment 4 is no longer part of the Proposed Project] (scoping meeting comment)
- The EIR should broadly consider impacts to cultural resources, including those considered ineligible for the California Register of Historical Resources. The EIR should ensure that potential impacts to known and unknown cultural artifacts are analyzed and avoided. The EIR should consider cumulative impacts to cultural resources and describe the methodology used to assess them. (scoping meeting comment)
- Describe formal communication to Tribal Governments regarding protocols for virtual public scoping in light of COVID-19. (scoping meeting comment)
- Project runs through the Owens Valley and will directly affect known and undisclosed cultural sites. Proper review and study can only occur with tribal consultation and input. (scoping meeting comment)
- Many cultural sites (in Owens Valley) are “unrecorded” to protect ancestors. Records review will only identify documented sites, which likely will not include tribal perspective. (scoping meeting comment)
- Require SCE to hire tribal monitors to provide a “voice or conscious” for tribes. Require consultation to gain ethnographic information from elders or other tribal members who have knowledge of areas used for spiritual or other purposes. (scoping meeting comment)

3.7.1. Environmental Setting

The Project Area is located within both the Mojave Desert and the Owens Valley, which are part of the area archaeologists define as the larger southwestern Great Basin region and the California Deserts region. Please refer to Section 3.6.1, Cultural Resources, for a description of the precontact and historic setting of the Proposed Project area. The Area of Potential Impact (API) defines the area within which

resources could be affected by the Proposed Project. This area is the same as the area referred to by BLM as the Area of Potential Effect (APE).

3.7.1.1. Ethnographic Setting

Several present-day Native American groups occupy and regularly travel through the Ivanpah Control API, as did their ancestors. Groups whose ancestral lands have been documented as overlapping the study area for the proposed project include the Owens Valley Paiute, the Timbisha Shoshone, the Southern Paiute, the Chemehuevi, the Kawaiisu, the Mojave, and the Vanyumé.

These peoples, their ancestral lands, languages, and traditional lifeways are described in detail below. In order to respectfully represent the intricate history of interaction and social mixture amongst these groups, early academic sources for this research were supplemented with more recent sources written with more direct participation from living members of each group. Additionally, special attention was paid to relationships between languages spoken amongst groups and names used by groups to refer to themselves and one another, as these facets of communication often lend insights into groups' individual identities and the capacities in which they interacted.

The following are summary descriptions of the Native American groups that have occupied the Proposed Project area.

Owens Valley Paiute

Information in the following section, unless cited, is sourced from "Owens Valley Paiute" (Wesson et al, 2021). Further citation is not provided.

The Owens Valley Paiute are a Western Numic-speaking ethnolinguistic group whose ancestral homeland encompasses the Owens Valley, an area bounded to the east by the White and Inyo mountain ranges and to the west by the Sierra Nevada mountain range (Steward, 1933).

Some ethnographic and linguistic records have historically related the Owens Valley Paiute with neighboring groups, due to similarities in culture and language. Kroeber (1925) refers to them as "Eastern Mono" and acknowledges the greater Mono ethnic group. He considers them to include the Owens Valley Paiute, and to be indistinguishable from the Northern Paiute, whose original territories ranged northward into Oregon and eastward into Nevada. A similar classification carries into the understanding of the Owens Valley Paiute language currently accepted amongst linguists, in which Owens Valley Paiute is alternatively termed "Eastern Mono" (Golla, 2011). However, outside of the categories assigned to them by academics, the Owens Valley Paiute consider themselves distinct in identity from all other groups and use the term *nümü*, meaning "people," as a self-identifier in their language (Steward, 1933).

The Owens Valley Paiute language is part of the Uto-Aztecan language family and is further classified into the Western Numic subfamily (Golla, 2011). As mentioned previously, the name Eastern Mono is considered by linguists to be synonymous to Owens Valley Paiute and the terms Northeastern Mono and Southeastern Mono commonly refer to the language's regional dialects. Out of respect for the way in which the peoples of the Owens Valley identify themselves today, the language will be discussed in this document as Owens Valley Paiute. Two dialects of Owens Valley Paiute are presently documented, though AB 52 correspondents have expressed that greater regional variation has been present among speakers of the language. Of the recorded dialects, the northern dialect is spoken as far north as Benton and east into Fish Lake and Deep Springs Valley. The southern dialect, which is spoken in the region surrounding the Owens River from Big Pine to Lone Pine, exhibits many similarities to Panamint dialects, due to the historical interaction with the Timbisha and other neighboring peoples (Golla, 2011). Today, there are less than thirty elderly speakers of Owens Valley Paiute, but language classes and other preservation efforts coordinated by the Owens Valley Career Development Center through the Nüümü Yadoha Language Program aim to increase this number (Golla, 2011).

In contrast to many neighboring peoples, seasonal migration among the Owens Valley Paiute was relatively localized, given the dense concentration of important food resources within the vicinity of the valley. The Owens Valley Paiute built villages near important gathering areas that stood year-round, but that were occupied seasonally, with the availability of the nearby food resources (d'Azevedo, 1986; Pritzker, 2000).

Among the ample resources in the valley, pine nuts harvested from Pinus monophylla (single leaf pinyon pine) have traditionally been the predominant staple food amongst the Owens Valley Paiute, often ground into a meal for bread or made into a rich porridge. Pine nuts were harvested in the late summer and early fall and cached in the highlands for use throughout the year (d'Azevedo, 1986; Steward, 1933). Notably, the annual yield of the pine nut harvest could vary considerably, leading the Owens Valley Paiute to also utilize more stable crops, such as acorns from Quercus kellogii (California black oak), grains from Achnatherum hymenoides (Indian ricegrass) or Stipa speciosa (desert needlegrass), and seeds from Salvia columbariae (California chia). Other plants used within Owens Valley Paiute cuisine include Artemisia tridentata (big sagebrush), Agnorhiza ovata (southern mule's ears), Descurainia pinnata var. filipes (tansy mustard), Sambucus caerulea (blue elderberry), Ephedra nevadensis (Nevada ephedra), Lepidium sp. (pepperwort), Yucca brevifolia (Joshua tree), Yucca schidigera (Mojave yucca), Sphenosciadium capitellatum (woolyhead parsnip), Opuntia sp. (prickly pear), Arctostaphylos patula (greenleaf manzanita), Prosopis pubescens (screwbean mesquite), Dalea polyadenia (Nevada dalea), Juncus balticus (Baltic rush), Lilium parvum (Sierra lily), Mentzelia albicaulus (white stem blazingstar), Mentzelia laevicaulus (big blazingstar), Oenothera hookeri (tall evening primrose), Eriogonum fasciculatum (California buckwheat), Lycium andersonii (Anderson wolfberry), and Typha latifolia (common cattail) (d'Azevedo, 1986).

The Owens Valley Paiute tendency toward more stationary habitation also allowed them to develop a rich agricultural tradition, distinguished by its intricate and extensive ditch irrigation networks. These ditches were utilized to maintain wild seed plots including Helianthus sp. (sunflower), Eragrostis mexicana (lovegrass), Leymus cinereus (Great Basin wild rye), Elymus trachycaulus (slender wheatgrass), Chenopodium berlandieri (lamb's quarters), and Nicotiana quadrivalvis var. bigelovii (Indian tobacco), amongst others (d'Azevedo, 1986; Lawton et al., 1976). Irrigation was a communal effort, with all men assisting in the construction of water conveyance features, such as dams and ditches. Following the diversion of water into a major ditch, the watering of plots was managed by a head man or a community-elected irrigator, who would further direct water through networks of smaller ditches using a pole called a pavodo (Lawton et al., 1976).

A wide variety of animal-based food sources are also utilized within Owens Valley Paiute cuisine. Among the most important is the larva of Coloradia pandora (Pandora moth), which is harvested biennially from Pinus jeffreyii (Jeffrey pine) forests of the northern Owens Valley between late June and early July (Dean et al., 2004; Fowler and Walter, 1985). The process of harvesting Pandora moth larvae can be done by hand, but traditionally involves the digging and maintenance of trenches, from which the larvae are collected. These trenches are considered family property and are inherited matrilineally. Following harvesting, the larvae are roasted and boiled, or sun dried and stored for future use (Fowler and Walter, 1985). The larvae and pupae of Ephydra hians (alkali fly) were a similarly important resource, harvested after washing up on the shores of Owens Lake and processed in the same manner as the Pandora moth larvae (d'Azevedo, 1986). Fishing is also an important contributor to the Owens Valley Paiute diet with Cyprinodon radiosus (Owens pupfish), Rhinichthys osculus (speckled dace), Catostomus fumeiventris (Owens sucker), Siphateles bicolor (Tui chub), amongst other species coming from the Owens River and associated tributaries. Finally, hunting of Antilocapra americana (pronghorn), Ovis canadensis (bighorn sheep), Odocoileus hemionus (mule deer), Sylvilagus sp. (rabbit), Marmota flaviventris (yellow-bellied marmot), Spermophilus sp. (ground squirrel), Taxidea taxus (badger), Dipodomys sp. (kangaroo rat), Castor canadensis (beaver), Perognathus sp. (pocket mouse), and other mammals also supplemented subsistence efforts (d'Azevedo, 1986).

Amongst others in the region, the building culture of the Owens Valley Paiute was distinctive, as access to resources made it possible for them to construct robust buildings for repeated seasonal occupation. Structures unique to the Owens Valley Paiute included the musa, the to'ni, the saibi to'ni, and the wogani. The musa is a round, semi-subterranean structure, consisting of a framework of poles atop an excavated area about 2 feet deep, covered with earth and grass and supported by a central ridge pole. Other notable features of the musa included an east-facing door and a hole to ventilate smoke from a central fire. The musa served as a communal gathering place, a dormitory for young men, and sweathouse (d'Azevedo, 1986; Pritzker, 2000). Another type of structure referred to as a to'ni or siwanobi was similarly constructed, albeit more conical in form, typically covered in grass or tule mats, and lacking a ridge pole. These structures were utilized as family homes in the winter, during which the Owens Valley Paiute habitually occupied villages in the lowlands of the valley (d'Azevedo, 1986). A structure known in the Big Pine dialect of Owens Valley Paiute as a saibi to'ni is conical or dome-shaped and consists of a frame of willow poles covered with thatched tule or woven tule mats. This type of structure served as a basic single-family residence and was especially common in the swampier northern region of the valley (d'Azevedo, 1986). The wogani, which had a central ridge pole, stood 15 feet wide, was constructed from a timber frame covered in bark and pine boughs, and was usually found in more mountainous terrain in association with the use of stored pine nuts (d'Azevedo, 1986).

Within early contact Owens Valley Paiute society, the nuclear family was the most basic social unit. Nuclear families traveled together during the year and returned to the same houses within seasonal villages (d'Azevedo, 1986; Steward, 1933). Families held loose rights to hunt, fish, or gather in given areas to which they returned annually. These rights were inherited matrilineally (Fowler and Walter, 1985). Groups of families comprised villages, which in turn, comprised districts. These larger districts were governed by headmen, who provided oversight and guidance to their respective communities during irrigation efforts and hunting parties, and led festival and ceremony activities (d'Azevedo, 1986; Dean et al., 2004). The position of headman was generally inherited, but could also be elected by the community (Dean et al., 2004).

Owens Valley Material Culture

Both ornamental and utilitarian woven vessels as well as tsa-po't-na, a type of coiled basket hat worn by women, were prevalent among the Owens Valley Paiute during the early Contact period. Willow, only cut during winter months, was the most important of the material used in twined basketry. Sumac roots were also used (Varner, 2009). One common basketry style included a bottle-shaped, small-mouthed container pitch-coated on the inside walls for waterproofing. Twined, conical carrying baskets were woven in various sizes and tightness for different purposes. Coarse, open-twined, cone-shaped burden baskets were worn by women and used for gathering firewood and pinecones. Smaller, tightly-woven twined baskets with a cloth- or leather-covered base were used for seed-gathering. Tightly-woven twining was employed to create fan-shaped winnowing trays, whereas, open, plain twining was used to catch live coals on parching trays, or hulling baskets. Large, coiled cooking baskets were also produced. Decorative black and red weaving patterns were added by creating dyes from martynia pods, bulrush roots soaked in ash, and yucca root.

Cordage was also an important technology utilized by the Owens Valley Paiute, made of sinew, milkweed fiber, juniper and willow bark (Varner, 2009). Sandals, storage bags, and nets used for fishing or rabbit and deer drives were made with cordage. As recently as the 1950s, a cache of new or slightly-used deer snares, constructed with twisted ropes to form a cable, were discovered in a rockshelter near Cottonwood and Diaz Creek in the Owens Valley (Varner, 2009).

Modeled on previously existing utilitarian types of basketry, Owens Valley Brown Ware pottery, adopted about 200 years later than among the Southern Paiute and Western Shoshone, was still in use during the Contact period (Varner, 2009). Crude in shape, flat-bottom bowls with straight or flared sides, conical vessels, and flanged shapes are distinctive of the Owens Valley Brown Ware (Varner 2009). Vessel size ranged from small pan-shaped, low-walled vessels to medium-sized bowls used as dippers and as storage,

to large cooking vessels with a rim diameter of 20 cm (8 inches) or more. Some larger pots, used to boil meat, were crafted with handles. Owens Valley Brown Ware pottery typically lacks additional design elements and was rarely decorated with the exception of a single or double-lined band of fingernail impressions (Varner,2009). Fired surfaces range in color from gray-black to red-brown.

Clothing and personal adornment of the Owens Valley Paiute during the early Contact period consisted of breechcloths for men and plant-fiber netted or rabbit skin aprons for women (Grosscup, 1960); Buckskin dresses were also worn by women (Varner, 2009). Rabbit skin or sagebrush moccasins protected against foul weather, while rabbit skin blankets were vital to everyday life both worn as a cape throughout the day and used as a cover in the night (Varner, 2009). Rabbit skin ropes, made by linking single ribboned hides together to form a long chain that was then twisted and dried, were not only an important trade item (Varner, 2009), but were also "standards of value, being sold in lengths of twice around the hand" (Steward, 1938). Jewelry adornment consisted of Olivella, Tivela (saltwater clam) and Haliotis (abalone) shell, steatite beads, and slate pendants (Varner, 2009).

The Owens Valley Paiute traded widely with the Sierra Miwok to the north, the Monache and Tübatulabal to the west, and the Timbisha Shoshone and Kawaiisu to the south (Dean et al., 2004; Ewan, 2000). The Timbisha Shoshone actively traded for rabbit skin blankets, glass trade beads and buckskins (Varner, 2009). The Yokuts traded obsidian in exchange for acorns, willow bark, baskets, bead money, tobacco, skins, steatite, and salt. Other trade capital included paint pigment, pinenuts and other seeds, manzanita and elder berries, arrow cane, pumice stone and caterpillars of the Pandora moth (Varner, 2009).

Owens Valley Paiute and European Settlers

Prior to the advent of gold mining in the Owens Valley in the 1850s, contact between the Owens Valley Paiute and European settlers was minimal (Dean et al., 2004; Ewan, 2000). Records from earlier explorers, such as Jedediah Smith in 1826, Peter Skene Ogden in 1829, Joseph Reddeford Walker in 1834, and John C. Frémont in 1846, note only brief passages through the Owens Valley and little interaction with the Owens Valley Paiute. In 1855, A.W. von Schmidt surveyed the eastern border of California under contract with the federal government, making brief note of irrigation and foraging practices among the Owens Valley Paiute in his records (Dean et al., 2004). Captain John W. Davidson recorded the first detailed settler account on the Owens Valley Paiute after traveling to the area in search of stolen livestock from Fort Tejon (Dean et al., 2004; Ewan, 2000).

The Owens Valley Paiute developed extensive irrigation systems that were dug by hand (Owens Valley Indian Water Commission, 2018). Despite having comprehensive knowledge of the landscape and native flora in the area, the Paiute were often referred to as "people on the verge of agriculture without achieving it" (Lawton et al., 1976). Both the mining and ranching industries, as well as the new non-native populations that came with them, benefitted from the irrigation systems developed by native populations pulling from the snowmelt and runoff of the Sierra Nevada range, an abundant water source in the Owens Valley.

The first gold mining camps in the vicinity of the Owens Valley were established in northern Mono County in the late 1850s and quickly spread into the valley as hundreds of prospectors traveled southward in search of valuable minerals. The miners were followed by sheep and cattle ranchers, who sought pastures for their livestock to graze. In the 1860s, the flood of prospectors attracted by the discovery of gold and silver in the Sierra Nevada and Inyo mountains began to impact the Owens Valley Paiute way of life. The cutting of pinyon pine trees for mining and other purposes directly endangered the Owens Valley Paiute diet, emblematic of how abrupt environmental changes affect the cultural lives of native populations. The territorial encroachment and damage to dietary staples combined with a harsh winter in 1861-1862 exacerbated conflicts between the Owens Valley Paiute and settlers. A series of campaigns by California militia and U.S. Army regiments were mounted against the Owens Valley Paiute and Shoshone forces led by Joaquin Jim and Captain George. These campaigns resulted in the 1863 forcible removal of Owens

Valley natives from Fort Independence to the San Sebastian Reservation at Fort Tejon in the mountains south of Bakersfield. Many escaped while travelling to Fort Tejon and returned to Owens Valley, while others died along the journey. This 12-day forced removal of 859 native captives (Bancroft et al., 2025) is referred to as the Forced March.

In subsequent years, particularly after an epidemic in 1865, most Paiutes left Fort Tejon and returned to the Owens Valley where they lived in camps near towns and farms. The Owens Valley's agricultural economy quickly became reliant on this indigenous workforce.

Water Rights and Water Wars

In the 1870s, irrigation methods employed by early Euro-American settlers entailed diversion of creeks onto adjacent lands, in some instances, resulting in an excess of irrigation and swamping of lands. By the late nineteenth century, the Owens Valley had developed into a small yet established agricultural center, with over 90 percent of its 5,000 residents involved in agriculture. Over 100 miles of unlined canals carried water from the Owens River to approximately 70,000 acres of land between Bishop and Big Pine. The valley's success, however, was short-lived and life in the valley was overturned due to the demand for a water supply by the City of Los Angeles. At the beginning of the twentieth century, Los Angeles experienced a severe water shortage. City officials viewed the Owens River as a potential water source that could be exploited to sustain the city with much-needed water via an aqueduct.

Construction of the 226-mile-long Los Angeles Aqueduct began in 1907, supporting the growth of Los Angeles with the water of the Owens Valley, and completed in 1913. The City of Los Angeles and residents of Owens Valley negotiated a water supply guarantee to ensure that farmers would have a stable water supply. The City of Los Angeles offered to trade 1,511 acres of City-owned lands for 3,126 acres of federally reserved Indian lands and in 1937 Congress authorized this land exchange and established a land base for the Big Pine Reservation, along with the Bishop and Lone Pine reservations.

Into the 1920s, the Owens Valley experienced a drought, forcing many local farmers and ranchers to sell their land and associated water rights to the Los Angeles Department of Water and Power (LADWP) which took control of the Owens Valley Water supply in a period identified as the "Water Wars". Frustrations grew on the part of ranchers, who were paid well for their land only to deposit these payments into one of five local banks that later declared bankruptcy (Davis-King, 2003). Working as laborers and cowboys on ranches, Owens River Valley natives took a considerable hit to their livelihood. On the one hand, they were dependent upon the ranches being sold to LADWP; and on the other, the diversion of the water from their native lands to the Los Angeles Aqueduct "clearly prevented them from returning to their former villages" (Davis-King, 2003).

By 1930, the City of Los Angeles owned 90% of the Owens Valley water rights and by 1933 the LADWP owned approximately 95% of the farmland in the Valley. The transfer of water from the Owens Valley to Los Angeles caused severe environmental degradation of the Owens Valley over the second half of the twentieth century. Despite the economic consequences to the Owens Valley farming economy and numerous protests, the Los Angeles Aqueduct system was expanded in the 1930s, tapping the waters of the Mono Basin located in the northern end of the Owens Valley. By the end of the 1930s, the City of Los Angeles acquired Owens Valley ancestral lands and key water access areas to support the movement of water to the metropolitan area in exchange for government trust land, or Indian reservations.

Federally Recognized Owens Valley Paiute Tribes

The Owens Valley Paiute are represented today within four federally recognized Tribes: Bishop Paiute Tribe, Big Pine Paiute Tribe of the Owens Valley, Fort Independence Indian Community of Paiutes, and Lone Pine Paiute-Shoshone Tribe (Pritzker, 2000).

Bishop Paiute Tribe

This tribe is located on the Bishop Paiute Reservation in Bishop, California, south of U.S. Route 395. The reservation was established in 1936 with a total of 875 acres (Bishop Paiute Tribe, 2025). With over 2,000 enrolled members, the Bishop Paiute Tribe is the fifth largest tribe in California. As of this writing, the elected governing tribal council is comprised of five members including a chairman, vice-chairwoman and treasurer/secretary. Tribal programs serve the needs of tribal members in all phases of life including focused programming around family formation, head start, education, environment, and tribal elders. Tribal entities include the Wanaaha Casino, the Paiute Gaming Commission, the Owens Valley Indian Water Commission, the Bishop Paiute Development Corporation, a police department, a tribal radio station (KBPT 96.1), and a newsletter. The Bishop Paiute Tribal Historic Preservation Officer (THPO) is Darren Delgado.

Big Pine Paiute Tribe

The Big Pine Paiute Tribe of the Owens Valley is located on the Big Pine Indian Reservation in Big Pine, California, east of U.S. Route 395. The reservation was established in 1912 with a total of 279 acres (Big Pine Paiute Tribe, 2025). Over two-thirds of the more than 625 tribal citizens live on the reservation. As of this writing, the elected governing tribal council is comprised of five members including a chairman, vice-chairwoman, treasurer and secretary. The council oversees approximately 30 staff members and carries out tribal business such as providing social services for members, preserving cultural heritage, and protecting ancestral lands. The Big Pine Paiute TPHO is Danelle Gutierrez.

The Big Pine Paiute have been integrally involved in projects in the Owens Valley, particularly in consultation with Caltrans and with the Great Basin Unified Air Pollution Control District (GBUAPCD) to form a cultural task force. Much of the work is focused on the dust-control issues at Owens Lake impacting archaeological sites and tribal cultural resources, including cairns, burials, and the 1863 Forced March massacre site. Along with the other Owens Valley tribes, the Big Pine Paiute are involved with the related effort to establish the Patsiata Historic District surrounding the lake.

Fort Independence Indian Community of Paiutes

The Fort Independence Indian Community of Paiutes is located on the Fort Independence Reservation in Independence, California, west of U.S. Route 395. The reservation was established in 1915 by Executive Order with a total of 356 acres (Fort Independence Indian Reservation, 2025). Per the tribe's official website, as of this writing, a three-member Board of Directors manages the tribe with three core pillars of focus for improvement: environmental restoration, economic development, and communal preservation. Entities managed by the tribe include the Fort Independence Travel Plaza, established in 2008 with the adjoining Oak Creek Casino, the Oak Creek Dispensary and Oak Creek Campground – all of which aim to nurture and protect the land while developing sustainable economic opportunities for their community. The Fort Independence Indian Community THPO is Sean Scruggs.

Marking California Department of Fish and Wildlife's (CDFW) first land return to a California tribe, the state transferred ownership of the Mount Whitney Fish Hatchery to the Fort Independence Indian Community of Paiute Indians as a result of new legislation "giving tribes the right of first refusal when the state dispenses with excess property" (Cowan, 2024). The land trust, over 40 acres of manicured grounds, includes a European-style stone hall built in 1917 (Cowan, 2024).

Lone Pine Paiute-Shoshone Tribe

The Lone Pine Paiute-Shoshone Tribe is located on the Lone Pine Paiute-Shoshone Reservation in the community of Lone Pine, California, west of U.S. Route 395. The reservation was established in 1937 through a land exchange between the Department of the Interior and the City of Los Angeles with a total

of 237 acres (LPPST, 2025). As of this writing, a five-member tribal council consists of a chairman, vice-chairperson, treasurer, secretary and trustee. The council governs departments focused on housing, wellness, economic development and the environment for the 350 residents living on the reservation and those living off of the reservation. The Lone Pine Paiute-Shoshone THPO is Kathy Bancroft (LPPST, 2025).

A critical issue for the Lone Pine Paiute-Shoshone Tribe is a Caltrans highway improvement project intersecting the tribe's reservation along U.S. Route 395, the Caltrans Olancha-Cartago Project. In December 2019, the State Lands Commission authorized the sale of a 17.13-acre parcel to Caltrans for the improvement project. However, the parcel lies within the ancestral territory of the Lone Pine Paiute-Shoshone Reservation and holds significant cultural value. To address this issue, the State Lands Commission identified and returned approximately 40 acres of adjacent land to the tribe. However, impacts to sensitive and sacred lands along the improvement route continued, causing irreversible damage to Native American cemeteries and places of cultural importance.

THPO Kathy Bancroft was working with state and federal agencies and other tribes with traditional cultural ties to Owens Valley to list the Patsiata Historic District, near Lone Pine as a Historic District and traditional cultural property on the National Register of Historic Places (NRHP), and a tribal cultural resource on the California Register of Historical Resources (CRHR). The Patsiata Historic District was added to the National Register of Historic Places on March 3, 2025. The NRHP nomination summary issued by the Office of Historic Preservation states (OHP, Nd):

> Encompassing approximately 186 square miles (119,313 acres), Patsiata Tübiji Nüümü-na Awaedu Ananisudüheina (Patsiata Historic District) is in southern Payahuunadü (Owens Valley), in Inyo County, California. The district includes Patsiata (Owens Lake) and the many shorelines formed as lake levels fluctuated over the past 14,000 years. Patsiata's early Holocene shoreline largely defines the district boundary. For the Nüümü and Newe (called the Paiute and Shoshone by anthropologists) with traditional roots in Payahuunadü [Owens Valley], Patsiata, has been the center of culture and way of life since time immemorial. Tribal histories attest to the antiquity of this importance.

Locations Important to the Owens Valley Paiute

Information in the following section, unless cited, is sourced from "Owens Valley Paiute" (Martinez et al, 2019). Further citation is not provided.

Occasional hunting forays extended into the Sierra Nevada and White Mountains or open areas east of Owens River. In his ethnography of the Owens Valley Paiute, Steward (1933) worked with his informants to map known place names for camps and villages, irrigated fields, gathering locations, hunting territories, trails, springs, other resource locations, geographic landmarks, and places where mythological events occurred (Steward, 1933). The API intersects with five Owens Valley Paiute territorial districts: *pitanapa·ti* (near Bishop Creek), *iti ʻ itiwi·ti* (between Bishop and Big Pine), *tobowahamati* (around Big Pine), *panati* (south of Big Pine), and *tinihu·wi·ti* (stretching from north of Fort Independence to the northwest side of Owens Lake). Supported by the streams from the snow-capped Sierra Nevada, the Owens Valley had ample marshes and grasslands. The Sierra Nevada ranges provided junipers, piñon, and pines at altitudes greater than 1,828 m (6,000 feet). Along these mountain ranges, there are pinecone processing areas significant to the ethnographic history of the Paiute and other Native American groups. Steward (1933) identified some of these pinecone processing areas worth noting for their proximity to the API: 1) a village near Lone Pine called *paha'awitu* or "mortar place," 2) the village of *tupu'si witu* or "seed plant," and 3) the village of *tonova witu* or "salt brush," both located northeast of the Alabama Hills (Steward, 1933). Other locations mapped by Steward are a camp and irrigated area near Freeman Creek and the Keough Hot Springs, and numerous plant-gathering localities with irrigated plots south of Bishop Creek, north of the villages located in Bishop at the time. Significant locations from oral legends recorded by Steward

(1933) include a cave near Fish Spring where a mythological giant lived, a fishing locale near Hines Spring where bad spirits known as “water babies” dwelled, and a large plateau referred to as To’ni near Big Gulch where Coyote lived in his house, or to’ni, comprising a large round hole in the ground (Steward, 1933).

Early routes in the Owens Valley consisted of trails that often followed pre-existing Native American pathways, first developed in the prehistoric era, and were later followed by early explorers. With the arrival of the mining frontier in the 1860s, the route which transverses the Owens Valley between the Sierra Nevada to the west and the White and Inyo Mountains to the east was extended to the Los Angeles area to provide an outlet for mining exports. This route eventually became U.S. Route 395.

The historic route of the Forced March, much of which parallels what is now U.S. Route 395, holds grave significance to the Owens Valley Paiute. Traces of the route of the Forced March of Paiute people from Fort Independence to Fort Tejon by the U.S. Army in July 1863 utilized the Inyo County Wagon Road, also referred to as the Historic Owens Valley Wagon Road. This historic wagon road crosses the I-C Project Alignment in two locations and lies within the Visual API for almost 5 miles. According to Lone Pine Paiute-Shoshone THPO Bancroft, the wagon road “followed a preexisting Indigenous trail that connected important places in the district, including those visited by Pon-ah-qua-zu and Hi-nu-nu" (Bancroft et al., 2025). Six additional locations on the Forced March route cited on the Patsiata Tübiji Nüümü-na Awaedu Ananisudüheina National Register of Historic Places Nomination Form are the first night’s campsite in the town of Lone Pine, the second night’s campsite at the south end of Owens Lake near Olancha, the third night’s campsite at Little Lake, South Fork in Caliente, the Sebastian Indian Reservation and Fort Tejon (Bancroft et al., 2025).

Timbisha Shoshone

Information in the following section, unless cited, is sourced from “Western Shoshone (Timbisha Shoshone)” (Wesson et al, 2021). Further citation is not provided.

The Proposed Project alignment traverses the western edge of the territory of the Timbisha Shoshone, whose historic territory is documented as ranging from the Coso Mountain Range in California eastward toward the modern-day town of Beatty, Nevada and northward into the Inyo Mountain Range and the southern portion of the Owens Valley, ultimately encompassing Owens Lake (Catton, 2009; Golla, 2011).

Historical documents and ethnographic records ascribe a number of different names to the Timbisha Shoshone people, including Koso (Kroeber, 1925), Panamint (Coville, 1892; Dutcher, 1893), and, in an even more general sense, Shoshoni (Steward, 1938). These descriptors do not take into account the Timbisha Shoshone people’s own identity as a people and, in some cases, classify them alongside peoples from whom they see themselves as distinct. The name *Timbisha* originates from the Timbisha-language term *Tümpisa*, which references a source of red ochre located near Furnace Creek and has been used as a place name for Death Valley (Dayley, 1990; Miller, 2004). One derivation of the word, *Tümpisattsi*, refers to people from Death Valley, while the term *nümü*, meaning “people,” serves as a general term used to refer to themselves (Dayley, 1990).

The Timbisha language is categorized within the Central Numic subfamily of the greater Uto-Aztecan language family. Rather than an individual language, it is considered by linguists to be a dialect of the overarching Panamint language, which also includes mutually intelligible dialects spoken in Beatty, Nevada and Lone Pine and Darwin, California (Golla, 2011). Other Panamint dialects show similarities to the Shoshone language of northern Nevada and eastern Idaho, but Timbisha is not mutually intelligible with Shoshone (Dayley, 1990; Golla, 2011). As such, it is apparent that the Timbisha Shoshone are distinct in language and identity from Shoshone-speaking peoples. Given the language’s relatively small geographic range and consistently minimal population of native speakers, many Timbisha speakers were multilingual, often speaking Kawaiisu, Owens Valley Paiute, Shoshone, or Southern Paiute as a result of intermarriage and other interactions between the groups (Dayley, 1990; Golla, 2011; Miller, 2004).

Today, there are no remaining monolingual speakers of any Panamint dialect, though an aging population of multilingual Timbisha speakers make up the majority of Panamint speakers overall (Golla, 2011).

The Timbisha Shoshone have historically adapted to the hot temperatures in Death Valley by relying on seasonal migration, which allowed them to make use of seasonally available plant and animal-based food resources (Catton, 2009; Steward, 1938). Of these resources, *Pinus monophylla* (single-leaf pinyon pine), *Neltuma juliflora* (mesquite), and *Strombocarpa pubescens* (screwbean mesquite) were and still are considered among the most important, both for their roles as major staple foods and for the cultural significance of the seasonal harvest in Timbisha society (d'Azevedo, 1986; Coville, 1892; Steward, 1938). Cones from the single leaf pinyon pine are collected in early autumn, before the cones have dried and opened, but after the seeds have matured (Coville, 1892). Nuts are removed from the cones after sun drying and cached for use throughout the year (Coville, 1892; Dutcher, 1893). Meanwhile, mesquite pods are collected in autumn and are then stored for use through the winter and spring (Coville, 1892). Other plants utilized seasonally by the Timbisha Shoshone include *Achnatherum hymenoides* (Indian ricegrass), *Echinocactus polycephalus* (cotton top cactus), *Ephedra nevadensis* (Nevada ephedra), Lycium andersonii (Anderson wolfberry), *Opuntia basilaris* (beavertail pricklypear), *Yucca brevifolia* (Joshua tree), and *Phragmites australis* (common reed) (Catton, 2009; Coville, 1892; Miller, 2004).

The Timbisha Shoshone shared the area around the south end of Owens Lake with Owens Valley Paiute groups. The lake and the wetlands surrounding it was a critical source of food, particularly in the form of waterfowl; Ephydra hians (alkali fly larva) were also gathered from the lake for food. Hunted game, including Ovis canadensis (bighorn sheep), Odocoileus hemionus (mule deer), Marmota flaviventer (yellow-bellied marmot), Lepus californicus (black-tailed jackrabbit), and Sauromalus ater (common chuckwalla), amongst other small game supplemented the Timbisha Shoshone diet (Catton, 2009; Coville, 1892; Miller, 2004). The Timbisha had some irrigated gardens, although when this practice started is unclear, but some tribal members have suggested that some modern springs and oases are due to canals dug by their ancestors. At the time of Coville's account in 1892, the food supply was supplemented by agriculture with corn, potatoes, squash, and watermelon crops. Additional crops historically cultivated by the Timbisha Shoshone included beans, sunflower, wheat, and amaranth (d'Azevedo, 1986).

Connection to the land through subsistence, stewardship, and spirituality remains important to the Timbisha Shoshone. Reverence for the land and its life-giving capacity is deeply integrated within the hunting and gathering practices of the Timbisha Shoshone and is observed through the expression of thanks to the landscape for the food obtained from it and regular maintenance of occupied areas (such as brush clearing, prescribed burning, and tree pruning), amongst other practices (Catton, 2009).

Governance amongst the Timbisha Shoshone was historically decentralized; habitation often occurred in small, sometimes extended family groups made up of one or more household units. The size of these groups was often correlated with the seasonal availability of resources. A winter village would usually be established near a mesquite grove and contain three to ten brush houses, inhabited by an extended family group. In the summer, pinyon forests provided shade for camps, numbering between fifty and one hundred, depending on the availability of pine nuts. These summer camps served as base camps for hunting and gathering excursions (Catton, 2009).

Timbisha Shoshone and European Settlers

Early contact between Timbisha Shoshone and Euro-American settlers occurred by at least 1849, when parties of settlers trying to reach California became lost around Death Valley. Severe impacts from this contact first occurred in the western portion of their territory, as Euro-Americans laid claim to the Owens Valley. Disputes led many Timbisha Shoshone to join with the Owens Valley Paiute in their conflict with settlers and the U.S. Army in the early 1860s, escalating to the 1863 Forced March. Livestock and other food sources of the ancestral Western Shoshone were being denigrated by colonial settlers (Glick, 2023).

The resulting 1863 Treaty of Ruby Valley between the United States and the Western Shoshone groups attempted to replenish natives for the food resource depletion caused by the infringement upon ancestral lands in exchange for passage of Euro-American settlers through Western Shoshone lands in Nevada. Whereas the treaty did address Timbisha territory in California, the influx of settlers and miners and the drain on local water resources ultimately had a dramatic effect on Timbisha Shoshone way of life. Forced into towns, such as Furnace Creek, the Timbisha Shoshone relied less on seasonal migration, effectively shifting their interactions with the environment. In one example of this shift, pinyon pine and mesquite cut for fuel diminished their use as vital food sources. With a more sedentary lifestyle, agricultural lifeways growing melons, peaches, grapes, and alfalfa at canyon mouths took hold. Indian Gardens, east of the Coso Range, was known for this and hosted several families who alternated between farming gardens there and wage labor for various Euro-American endeavors in the mining and railroad industry. At the turn of the century, many Timbisha worked on the construction of the Tonopah and Tidewater Railroad.

In 1933, President Herbert Hoover established the Death Valley National Monument across 1,601,800 acres of land via executive order, under the presumption that the land was uninhabited wilderness. This presumption actively and deliberately overlooked the constant presence and stewardship of the Timbisha Shoshone. Attempts by the Timbisha Shoshone to assert their connection to the land were met by public antagonism from Superintendent John R. White of the National Park Service (NPS), who was tasked with the implementation of the executive order and who referenced the Timbisha Shoshone in multiple statements as a "problem" impeding the preservation and public use of the Death Valley National Monument's wilderness (Crum, 1998).

On May 23, 1936, the official memorandum agreement titled "Establishing a Colony of Indians on the Death Valley National Monument" was signed between the NPS and the Bureau of Indian Affairs, consigning the Timbisha Shoshone to a forty-acre tract, on which eleven adobe houses lacking basic utilities were built just south of Furnace Springs.

On November 1, 2000, the Timbisha Homeland Act was signed into law, transferring more than 7,700 acres of land in California and Nevada to the tribe. The Timbisha Shoshone Tribe have tribal trust lands totaling 7,754 acres in seven noncontiguous parcels distributed across Inyo County in California and Nye and Esmerelda counties in Nevada. This includes 314 acres at the unincorporated Indian Village in Furnace Creek within the Death Valley National Park.

The Timbisha Shoshone are represented today by the federally recognized Timbisha Shoshone Tribe. Per the tribe's official website, a 5-member Tribal Council serves as the elected governing body addressing matters "ranging from land use, economic development, and environmental stewardship to health, housing, and education initiatives" (Timbisha Shoshone Tribe 2025). As of this writing, the elected governing tribal council is comprised of five members including a chairman, vice-chairwoman and treasurer/secretary. Current foci of the tribe include the Tribal Broadband Project, which connects Death Valley Junction to Furnace Creek over Mount Ryan, and the Casino, Hotel & Travel Center, a 20,000 square foot gaming and entertainment facility. The Timbisha Shoshone Tribe retains offices in Bishop, California and the THPO is Mandi Campbell.

Locations Important to the Timbisha Shoshone

Information in the following section, unless cited, is sourced from "Western Shoshone (Timbisha Shoshone)" (Wesson et al, 2021) and "Western Shoshone" (Martinez et al, 2019). Further citation is not provided.

The ancestral lands of the Western Shoshone extended from Death Valley across central Nevada, and into northwestern Utah and southern Idaho. Several archaeological sites associated with Western Shoshone ancestral lands have been documented, including a few significant ones that intersect or are near the API.

Located on the North Range of the China Lake Naval Air Weapons Station (CLNAWS), the Coso Hot Springs site has religious significance to the Western Shoshone. On areas surrounding the base, Yohe and Garfinkel (2012) summarize the importance of the Rose Spring Site (CA-INY-372) for its religious and ceremonial significance associated with bighorn sheep. The Rose Spring site is also significant for its regional and chronological pattern defining the Rose Spring period. Yohe (1998) summarized the impact of the introduction of the bow and arrow on obsidian exploitation at the Rose Spring site.

The API intersects former territory of the *Papunna,* or Little Lake Band, at Little Lake Village, one of the four villages that make up the Shoshone district of Kuhwiji along with villages located at Olancha, near Darwin, and at Coso Hot Springs. These villages were loosely connected to each other and were mostly occupied during the winter.

Ethnographic accounts in the Little Lake region were originally presented by Kroeber (1925) and Steward (1933). During his fieldwork, Steward identified 10 single families residing around Little Lake; one of his informants believed the village consisted of approximately 60 people in 1870. This was one of the more densely populated sections of the Timbisha territory. The Little Lake Village site was a major cultural center for the Little Lake phase (11,000 – 3,800 years BP). The presence of rock art at this site those and within the Coso Range to the east, particularly panels depicting bighorn sheep, indicates that it likely has cultural significance for the tribe. Rock art at Little Lake Village site has been inundated by water in recent times. Portuguese Bench is a geologic bench nestled into the eastern toe slope of the eastern Sierra Nevada range. Portuguese Bench contains a known village site found to be a major village settlement for the Koso Shoshone, dating back to 3,000 years ago, with higher occupation during the Haiwee period (1,350–600 years BP). Portuguese Bench is located approximately 2.67 km (1.66 miles) west of the API, overlooking the I-C Project alignment.

Southern Paiute

Information in the following section, unless cited, is sourced from “Southern Paiute” (Wesson et al, 2021). Further citation is not provided.

The Southern Paiute are an ethnolinguistic group who, according to Kelly’s 1934 account, historically occupied an area bounded to the west by the Black, Avawatz, and Old Dad mountain ranges of California and extending eastward to Arizona’s Monument Valley and northward to Utah’s Sevier Lake. Across this area, Kelly (1934) identified fifteen distinct “bands” of Southern Paiute peoples distinguished by minor regional differences in linguistic dialect, as well as political affiliation: Beaver, Cedar, Chemehuevi, Gunlock, Kaibab, Kaiparowits, Las Vegas, Moapa, Panaca, Panguitch, Paranigat, San Juan, Shivwits, St. George, and Uinkaret. While *Southern Paiute* was the appellation ascribed to these peoples by early ethnographers such as Kroeber (1925) and Kelly (1934), the origin of this term outside of academic sources is unclear and the peoples’ preferred endonym is *nuwuvi*, meaning “people” (Ezzo and Majewski, 1996).

Of those included within Kelly’s list, the Las Vegas and Chemehuevi bands are the only two whose ancestral territories (as documented by Kelly) cross the California border and, in turn, the boundaries of the project API. While early ethnographic records, such as Kroeber’s 1925 publication and the aforementioned publication by Kelly (1934), address the Chemehuevi as a subgroup of the Southern Paiute peoples, many Chemehuevi identify themselves separately from the Southern Paiute. Kelly’s 1934 account documents the Las Vegas band’s ancestral homeland as the largest among the Southern Paiute peoples, stretching from Indian Springs, Nevada in the north to Clipper Mountain in California in the south. To the west, the territory is bounded by the Black, Avawatz, Shadow, and Old Dad mountain ranges in California, while the Colorado River comprises the eastern boundary (Kelly, 1934). The Las Vegas Southern Paiute are noted to have interacted with the Moapa band, who neighbored them to the northeast and with whom they share several aspects of language and culture (Kelly, 1934). Efforts have been made to describe here the traditional lifeways of the Las Vegas Southern Paiute, as applicable to

the Ivanpah Control API, though more general information about the greater Southern Paiute community has also been included, in the absence of sources specific to the Las Vegas band.

The Southern Paiute language is categorized within Southern Numic branch of the Uto-Aztecan language family and is mutually intelligible with Chemehuevi and Ute (historically spoken in western Colorado, eastern Utah, and northwestern New Mexico) (Givón, 2011). Given the ample similarities between Southern Paiute, Chemehuevi, and Ute, all are considered dialects encompassed within the Colorado River Numic dialect chain and are not regarded as individual languages (Golla, 2011). Notably, Southern Paiute is related to, but not mutually intelligible with Northern Paiute, a Western Numic language (Golla, 2011).

The Southern Paiute have traditionally made use of a wide variety of seasonally available plant resources, including *Juniperus sp.* (Juniper), *Opuntia sp.* (prickly pear), *Yucca brevifolia* (Joshua tree), *Amelanchier pallida* (western serviceberry), *Agave utahensis* (Nevada agave), *Artemisia tridentata* (big sagebrush), *Senegalia greggii* (catclaw acacia), *Salvia columbariae* (California chia), *Mentzelia laevicaulis* (big blazingstar), *Sylvilagus audubonii* (desert cottontail), *Achnatherum hymenoides* (Indian ricegrass), and *Poa nevadensis* (Nevada bluegrass) (d'Azevedo, 1986; Sutton, 1989). *Neltuma juliflora* (mesquite) and *Strombocarpa pubescens* (screwbean mesquite) are among the most important plant food resources, providing year-round sustenance. Young pods are collected from these trees and eaten fresh in the springtime, while dried pods might be harvested, processed into meal, and stored for later use in the late summer. Pine nuts from *Pinus monophylla* (single leaf pinyon pine) were another staple food, harvested in the late summer and early fall and stored for use throughout the year (Ezzo and Majewski, 1996). The Southern Paiute diet was historically also supplemented by agriculture using floodplain or ditch irrigation, with cultivated crops including corn, beans, squash, sunflower, wheat, and amaranth (d'Azevedo, 1986; Ezzo and Majewski, 1996; Pritzker, 2000; Raish, 2013). While plant foods made up the majority of the Southern Paiute diet prior to European contact, they also hunted rabbits, squirrels, chuckwalla, deer, bighorn sheep, and pronghorn, tending to prefer small game over large (d'Azevedo, 1986; Ezzo and Majewski, 1996).

The most basic unit of habitation among precontact Southern Paiute peoples was the nuclear family, though camps inhabited by single men or childless couples were also documented. Larger economic groups might house multiple nuclear family groups with an appointed headman, whose role was to encourage peaceful conflict resolution, receive visitors, and provide guidance to, but not directly command, the community. Within the Las Vegas Southern Paiute, this role was passed from father to son, with a preference for the eldest. At marriage, residence was matrilocal, but otherwise the Southern Paiute peoples tended toward patrilocal residence (d'Azevedo, 1986).

Similarly to other neighboring peoples, such as the Chemehuevi, who practiced seasonal hunting, gathering, and agriculture, the historical Southern Paiute pattern of habitation involved the establishment of base camps near agricultural fields or springs, to which family groups returned annually (d'Azevedo, 1986; Raish, 2013; Ezzo and Majewski, 1996). Base camps near agricultural fields were occupied in autumn by the elderly, who tended crops while the remainder of the family group took up temporary residence elsewhere to hunt game and gather from the pinyon and mesquite trees (Raish, 2013; Ezzo and Majewski, 1996). During winter, groups made use of cached resources and might opt to travel to higher elevations to make use of ample fuel supply or to lower elevations to take shelter in rockshelters, depending on the region in which they resided. Winter houses, called *kanee*, were comprised of conical wooden frames (oftentimes made of *Salix sp*, known commonly as willow) insulated with brush or juniper bark (Juniperus sp.) (Ezzo and Majewski, 1996; Pritzker, 2000). Common features also included central holes for smoke ventilation and eastward facing doors to receive sun (d'Azevedo, 1986). Meanwhile, summer houses were more temporary brush windbreaks (Ezzo and Majewski, 1996). Later, in the 19th century, Ute influence popularized conical houses made of canvas or hide (d'Azevedo, 1986; Ezzo and Majewski, 1996; Pritzker, 2000).

Important craft traditions among the Southern Paiute include basketry, cordage, netting, and tanning, with basketry being especially valued. Baskets were generally twined, with the exception of circular trays for winnowing or parching, which were coiled. Basket shapes included conical burden baskets, fan-shaped trays for winnowing or parching, seedbeaters, and pinyon pitch-lined water jugs. Alongside the Chemehuevi, the Las Vegas Southern Paiute also adopted ceramic forms from the neighboring Mojave (d'Azevedo, 1986).

Today, there are no federally recognized Southern Paiute Tribes in California, but the Southern Paiute are represented across Nevada, Arizona, and Utah by the Las Vegas Tribe of Paiute Indians, Moapa River Reservation, the Paiute of Utah Reservation, Kaibab Reservation, the San Juan Paiute, and Pahrump Band of Paiute Indians (Pritzker, 2000). The Chemehuevi Indian Tribe additionally includes some who identify as Southern Paiute within its membership.

Locations Important to the Southern Paiute

Information in the following section, unless cited, is sourced from "Southern Paiute/Chemehuevi" (Wesson et al, 2021). Further citation is not provided.

The extensive traditional territory of the Southern Paiute ranged from the Colorado Plateau to the Mojave Desert, including the Colorado River basin and numerous small mountain ranges. Numerous linear travel routes have been documented for the Southern Paiute/Chemehuevi, including trade routes and sacred trails. Several major trade routes and trails developed in the past 5,000 years to facilitate trade between the Pacific Coast and interior locales, and the Chemehuevi still used this network during the 1770s. Sacred trails, which can overlap with secular trade routes and other pathways, are connected to songs and stories and often contain place names for water sources and other geographic features across the landscape. These songs often recount epic journeys by ancestors and spiritual beings, connecting the ephemeral spiritual world with the physical landscape, and providing an important vehicle for the transmission of information about the landscape and how to move across it.

One specific trail lies within approximately 1.6 km (1 mile) of the API, between Yermo and Baker in San Bernardino County. This trail, known as The Mojave Road or Old Government Road, extends from Fort Mojave on the Colorado River westward to Camp Cady on the Mojave River. The route follows one of the pre-Contact trade routes that extended further to the west, to the San Bernardino Mountains, and ultimately to the coast. Although likely modified to accommodate horses and wagons by the U.S. Army and other entities, who used it as a supply route in the 1860s, this route follows older Mohave/Chemehuevi trails and connects known Chemehuevi water sources. The western portion of this route, along the Mojave River between Alvord Peak and the Cady Mountains, is roughly 1.6 km (1 mile) south of the I-C Project alignment.

Numerous geoglyphs, including anthropomorphic and geometric designs, are found in the vicinity of the Colorado River, within the ethnographic region generally attributed to the Southern Paiute/Chemehuevi. One Chemehuevi informant interviewed in the 1930s stated that these features predated the Chemehuevi's arrival in the area. Conversely, other Southern Paiute informants maintain that Numic-speaking peoples have occupied the region since time immemorial.

Other places important to the Chemehuevi include caves, mountains, and mesas to the north, south, and southwest of the I-C Project alignment, well outside of the API, including locations in Nevada and Arizona.

Chemehuevi

Information in the following section, unless cited, is sourced from "Chemehuevi" (Wesson et al, 2021). Further citation is not provided.

The Chemehuevi are a Southern Numic-speaking people whose historical territory is recorded as encompassing an area extending westward from the lower Colorado River, beginning in the Kingston Range southeast of Death Valley, and continuing southward through the Providence Mountains to the approximate boundary of modern-day Riverside and Imperial counties. They were erroneously considered by early ethnographic accounts, such as those written by Kroeber in 1925 and Kelly in 1934, to be indistinguishable from Southern Paiute people, but many Chemehuevi identify themselves separately from the Southern Paiute. They are now broadly acknowledged by academia as a distinct ethnolinguistic group, as by d'Azevedo (1986) and Laird (1976).

The Chemehuevi language, which is categorized as part of the Southern Numic branch of the Uto-Aztecan language family, is mutually intelligible to speakers of Southern Paiute and Ute (Givón, 2011). As a result of the similarities between Chemehuevi, Southern Paiute, and Ute, it has been posited that all three are contributors to a dialect chain called Colorado River Numic, rather than separate languages (Golla, 2011). Chemehuevi is distinguished from Southern Paiute and Ute in part by its incorporation of loanwords from Mojave and other Yuman languages, as reported by Golla (2011) and Kelly (1934). Likewise, many Chemehuevi speakers were bilingual and spoke Mojave as a second language (Laird, 1976). The inclusion of Yuman loanwords in Chemehuevi is indicative of historical and sociocultural ties between the Chemehuevi and Yuman groups of the southern Colorado River (Golla, 2011; Kelly, 1934). It is worth noting that, according to Stewart's 1968 account, the term *Chemehuevi* originated as a Mojave-language word referring to Southern Paiute and Chemehuevi peoples, while the Chemehuevi-language endonym *nümü*, which translates to "people," was in use at the time of the publication's writing. The Mojave origins of *Chemehuevi* are substantiated by Laird (1976), who presents the terms *tuumontcokowɨ* (translating to "black bearded faces") and *nɨwɨwɨ* (also translating to "people").

In 2011, it was reported that there were less than twenty first language speakers of Chemehuevi, but that a language revitalization program utilizing the master-apprentice teaching model had been established in Arizona (Golla, 2011). Today, the Chemehuevi Tribe of the Chemehuevi Reservation holds a language class in its cultural center in Havasu Lake, California (Chemehuevi Indian Tribe, 2025), though the language remains endangered in status (Golla, 2011).

Regarding the relationship between the Chemehuevi and Southern Paiute peoples, Kelly (1934) states that "[b]y their own statement by that of the Vegas band, the Chemehuevi are a recent offshoot of the Las Vegas [band of Southern Paiute, who] pushed southward establishing themselves first in Chemehuevi valley and later spreading downstream, to occupy the area left vacant by the Yuman Halchidhoma." This southward migration into an area previously occupied by Yuman peoples is corroborated by d'Azevedo (1986) and Sutton (1986), though these sources state that the area overtaken by the Chemehuevi was occupied by the Desert Mojave, rather than the Yuman Halchidhoma. All accounts describe the divergence of the Chemehuevi through this southward migration and consequent interaction with Yuman peoples as occurring at some point during the 19th century.

Among the many aspects of Mojave culture assimilated by the Chemehuevi were vocabulary, earth-covered houses, square-shaped metates, balsas, ferrying pots, ceramic forms and ornaments, paddle-and-anvil pottery techniques, and hair dye (d'Azevedo, 1986).

Basketry remains an important craft in Chemehuevi culture, with the primary style of basket being coiled, similarly to those produced by other peoples of the San Joaquin Valley. *Chilopsis linearis* (desert willow) is considered a basic material of Chemehuevi basketweaving (Laird, 1976). Basket shapes included conical burden baskets, fan-shaped trays for winnowing or parching, seedbeaters, and pinyon pitch-lined water jugs (d'Azevedo, 1986).

The Chemehuevi have traditionally made use of a wide variety of plant and animal resources. Pine nuts from *Pinus monophylla* (single leaf pinyon pine) and Pinus edulis (Colorado pinyon) and mesquite beans

from *Neltuma juliflora* (mesquite) and *Strombocarpa pubescens* (screwbean mesquite) are harvested seasonally, with the pine nut season falling between late summer and early autumn and the mesquite bean season in autumn (d'Azevedo, 1986; Laird, 1976). In addition to these, *Achnatherum hymenoides* (Indian ricegrass), *Mentzelia sp.* (blazingstar), *Agave deserti* (desert agave), *Yucca baccata* (banana yucca), *Yucca brevifolia* (Joshua tree), *Stanleya pinnata* (desert prince's plume), *Opuntia sp.* (prickly pear), *Senegalia greggii* (catclaw acacia), Typha latifolia (common cattail),and *Rhus trilobata* (skunkbush sumac) are amongst other plants utilized as food by the Chemehuevi (d'Azevedo, 1986; Laird, 1976; Sutton, 1989). Plant foods were also historically supplemented by game, including *Ovis canadensis* (bighorn sheep), *Odocoileus hemionu*s (mule deer), *Marmota flaviventer* (yellow-bellied marmot), *Lepus californicus* (black-tailed jackrabbit), *Sauromalus ater* (common chuckwalla), *Callipepla gambelii* (Gambel's quail), and various fish species. The Chemehuevi were also known for their agricultural tradition, which included the farming of wheat, corn, melons, pumpkins, and kidney and tepary beans in floodplains (d'Azevedo 1986; Laird, 1976).

Traditionally, Chemehuevi habitation was loosely matrilocal, with individuals moving between groups as necessitated by availability of resources. Bands often consisted of a few families who would travel together seasonally and who took a name from the place in which their crops were planted, where they would return annually. Planting occurred in the floodplain west of the Colorado River in late September or October. This was followed by a period of hunting and gathering in the highlands while based at temporary camps until crops began to ripen in spring, with the harvest falling in May (Laird, 1976).

A moiety system[1] divided by the patrilineal inheritance of the Mountain Sheep Song or the Deer Song designated land ownership. Both songs include descriptions of areas within the landscape and, thus, an individual who had inherited one song likewise inherited the right to hunt in the areas it described. Marital relationships under this moiety system were exogamous, with those who had inherited the Mountain Sheep Song marrying those who had inherited the Deer Song and vice versa. Larger regional groups were unified under High Chiefs, who provided guidance on decision making, peaceful conflict resolution, and spiritual matters, and who communicated with other High Chiefs in the Chiefs' language (Laird, 1976).

The Chemehuevi are represented today within several federally recognized Tribes: the Chemehuevi Indian Tribe, Colorado River Indian Tribes, Morongo Band of Mission Indians, and Twenty-Nine Palms Band of Mission Indians of California. The Chemehuevi Reservation, located on the border of Lake Havasu, encompasses 30,653 acres and is home to the Chemehuevi Indian Tribe, headquartered in Havasu Lake, California.

Kawaiisu

Information in the following section, unless cited, is sourced from "Kawaiisu" (Wesson et al, 2021). Further citation is not provided.

The Kawaiisu are a Southern Numic-speaking ethnolinguistic group who historically occupied an area spanning from the San Joaquin Valley to the southern Sierra Nevada, between the Tehachapi and Paiute mountains, and into the Mojave Desert (Garfinkel and Williams, 2011; Golla, 2011; Zigmond, 1981). Due to similarity between the languages they speak and a history of overlapping territory, Kawaiisu are acknowledged as an "offshoot" of the Chemehuevi, who differentiated themselves as a result of localized environmental differences within their homeland and consequent effects upon resource availability. However, more recent sources, such as Garfinkel and Williams (2011) and Golla (2011) discuss the Kawaiisu as an entirely separate entity from the Chemehuevi and Zigmond, one of the primary ethnographers of

[1] In the anthropological study of kinship, a **moiety** (/ˈmɔɪəti/) is a descent group that coexists with only one other descent group within a society. In such cases, the community usually has unilineal descent (either patri- or matrilineal) so that any individual belongs to one of the two moiety groups by birth, and all marriages take place between members of opposite moieties (https://en.wikipedia.org/wiki/Moiety_(kinship))

the Kawaiisu, states that contact with the Chemehuevi was limited (Park et al, 1937). The origin of the term Kawaiisu is unknown, though it has been documented that the Tübatulabal, Mojave, and Yokuts people have all historically referred to the Kawaiisu with similarly derived terms (Garfinkel and Williams, 2011). Kawaiisu is not utilized as an endonym; rather, the terms niwiwi or nüwa have been used by Kawaiisu as a self-identifier (Garfinkel and Williams, 2011). The Kawaiisu language is the westernmost language within the Southern Numic subfamily of the Uto-Aztecan language family (Golla, 2011). While other members of the Southern Numic branch, such as Chemehuevi, Southern Paiute, and Ute, are all treated as dialects within the greater Colorado River Numic dialect chain, Kawaiisu is recognized as divergent enough for classification as a language in its own right (Babel et al, 2013; Golla, 2011). In 2013, there were three remaining fluent speakers of the Kawaiisu language, rendering it endangered (Green, 2013). Since the establishment of the Kawaiisu Language and Cultural Center nonprofit organization in 2003, efforts have continued to revitalize the Kawaiisu language through the development of language learning materials and the application of the master-apprentice language learning system in cooperation with the Advocates for Indigenous California Language Survival (Green, 2013).

While it is noted that the Kawaiisu share linguistic and cultural ties with the Numic peoples of the Great Basin—especially the Timbisha Shoshone, with whom they are known to have intermarried (Dayley, 1990; Golla, 2011; Miller, 2004), Kawaiisu material culture also exhibits pronounced similarities with more western neighboring peoples (Golla, 2011; Lee and Hyder, 1991). Such is exemplified in the construction of granaries for the storage of harvested acorns, in similar fashion to those of the Kitanemuk, Tübatulabal, and Yokuts peoples (Garfinkel and Williams, 2011; Zigmond, 1986), and common use of rock art motifs among Chumash, Kawaiisu, Tübatulabal, and Yokuts works (Lee and Hyder, 1991).

Similar to the Timbisha Shoshone, the Kawaiisu also relocated seasonally, based on the variable availability of resources. In the summer, round, flat-roofed structures with one open side called havakahni were used. Winter houses called tomo kahni were larger, domed or conical in shape, and comprised of twine-lashed juniper frames built inside rock rings and covered with brush or tule (Garfinkel and Williams, 2011).

The Kawaiisu harvest pine nuts during the late summer and early autumn from *Pinus monophylla* (single leaf pinyon pine). Historically, the pine nut harvest was a communal event, wherein entire family groups would move to the pinyon forests for the duration of the season and work together to harvest the nuts. The nuts from *Pinus sabiniana* (California foothill pine) were also harvested in the lower elevation foothills, though these were considered less preferable due to their lesser nutritional value and greater difficulty of harvesting (Garfinkel and Williams, 2011). Acorns, which are gathered in October and November and stored in granaries for use throughout the year, are gathered from multiple *Quercus* species, though those from *Quercus kelloggii* are preferred for their sweetness and lesser tannin content (Zigmond, 1981). In spring, the calorie-rich hearts of *Yucca brevifolia* (Joshua tree) and *Yucca whipplei* (Spanish bayonet) are harvested (Garfinkel and Williams, 2011). Other plants traditionally utilized by the Kawaiisu include *Achnatherum hymenoides* (Indian ricegrass), *Salvia columbaridae* (California chia), *Mentzelia laevicaulis* (giant blazingstar), *Lepidium flavum* (yellow pepperweed), *Juniperus occidentalis* (western juniper), *Arctostaphylos patula* (greenleaf manzanita), *Calyptridium monandrum* (common pussypaw), *Typha latifolia* (common cattail), *Stipa speciosa* (desert needlegrass), and *Calachortus* species (mariposa lily) (Garfinkel and Williams, 2011; Zigmond, 1981). Hunting also made up a significant component of the traditional Kawaiisu diet, with important game animals including *Antilocapra americana* (pronghorn) *Ovis canadensis* (bighorn sheep), *Odocoileus hemionu*s (mule deer), *Lepus californicus* (black-tailed jackrabbit), *Sauromalus ater* (common chuckwalla), *Callipepla gambelii* (Gambel's quail), various fish species, and other small game. Historically, pronghorns were hunted in spring, often in collaborative efforts with the neighboring Yokuts and Timbisha Shoshone peoples (Garfinkel and Williams, 2011).

Basketry is an especially important craft amongst the Kawaiisu and both twined and coiled weaves are utilized in Kawaiisu basketry. The Kawaiisu method of coiling is stylistically unique and is referred to in

the Kawaiisu language as *wičikadɨ*, translating to "wrapped around." (d'Azevedo, 1986). Common materials for Kawaiisu basketmaking include *Muhlenbergia rigens* (deergrass), *Salix lasiolepis* (arroyo willow), *Yucca brevifolia* (Joshua tree), *Carex sp.* (sedge), *Yucca whipplei* (Spanish bayonet), and *Pteridium aquilinum* (bracken fern) (d'Azevedo, 1986; Garfinkel and Williams, 2011).

Habitation historically occurred in family groups. While many surrounding groups were organized through unilineal, kin groups, tracing descent through either the male or female line, the Kawaiisu were bilaterally organized, tracing descent equally through both the male and female lines. Leadership of a group was delegated to individuals based on their personal character and wealth, rather than designated by descent. These leaders provided guidance but had no real coercive authority and were responsible for supplying communal ceremonial feasts. One's wealth was traditionally destroyed upon death, so as to prevent one's children from inheriting status from their parents and ensure that wealth was accumulated individually (Garfinkel and Williams, 2011).

The Kawaiisu are represented today by the Kawaiisu Tribe of the Tejon Indian Reservation, which, alongside the Tübatulabals of Kern Valley, the Nuui Cunni Inter-Tribal Cultural Center, and various other Tribal associations and organizations, is part of the larger Kern Valley Indian Community. While the Kern Valley Indian Community is not federally recognized, it is one of several non-federally recognized Tribes subject to AB 52 and its members continue to seek federal recognition.

Locations Important to the Kawaiisu

Information in the following section, unless cited, is sourced from "Kawaiisu" (Wesson et al, 2021) and "Kawaiisu" (Martinez et al,, 2019). Further citation is not provided.

The Kawaiisu occupied the southern Sierra Nevada and Tehachapi Mountains at the core of their territory and branched out into the Mojave to obtain seasonal resources. Their range included the northwestern portion of the North Desert Region of San Bernardino County.

The Kawaiisu practiced a distinctive style of polychromatic (multicolored) rock art that shares many attributes with that of the Chumash. The best-studied Kawaiisu rock art site is Teddy Bear Cave (CA-KER-508), northeast of Tehachapi (outside of the API). Teddy Bear Cave is one site within Nettle Spring, an archaeological complex that also includes a large habitation area (CA-KER-230) along with numerous other localities. CA-KER-230 is characterized by numerous rock rings, more than 400 bedrock mortars, and rock art. Nearby sites include small camps, additional rock art localities, and a cremation site, all of which are potentially related to the Nettle Spring complex. Teddy Bear Cave is important in the oral history of the Kawaiisu people as the place where their people and the world were created.

The Kawaiisu were keen to resist European occupation of their traditional lands. As a result, several "skirmishes and atrocities against the [Kawaiisu] Indians began in 1861" (Underwood 2006:181). In response to attempts for the Kawaiisu to defend themselves and their territory, the U.S. Army established Camp Independence southwest of Owens Lake.

Serrano/Vanyume

Information in the following section, unless cited, is sourced from "Serrano/Vanyume" (Wesson et al, 2021). Further citation is not provided.

The Serrano people once occupied the Mountain, North Desert, and East Desert Regions of San Bernardino and Los Angeles Counties. The Serrano language is part of the Serran division of a branch of the Takic family of the Uto-Aztecan linguistic stock. The two Serrano languages, Kitanemuk and Serrano, are closely related. Kitanemuk ethnographic lands are located to the northwest of the Serrano. The Kawaiisu and Chemehuevi, located north and east of the Serrano, respectively, spoke languages that belong to the Numic branch of the Uto-Aztecan family. A relatively small group located within the San Bernardino

Mountains and the Sierra Madre originally spoke Serrano. The Vanyume, who lived along the Mojave River and associated Mojave Desert areas and are also referred to as the Desert Serrano, spoke either a dialect of Serrano or a closely related language.

According to the records by Fr. Francisco Garcés, Spanish Franciscan missionary and the first European to travel in this region in 1776, the name Vanyume is derived from the term for them (Beñeme) used by the Mojave. Very little is known of the Vanyume-speaking people because the Spanish missionaries greatly disrupted the group between the early 1820s and 1834. By the 1900s, the group was considered extinct. The Vanyume were friendly with the Chemehuevi and Mohave to the east, whereas the Serrano maintained animosity with these groups. The area of combined Serrano/Vanyume occupation—the San Bernardino Mountains, the southwestern portions of the Mojave Desert, and the Mojave River area—has become known as the Serrano area.

Most Serrano lived in small villages located near water sources. Kroeber (1925) considered the organization of Serrano lineage sets similar to that of political groups. He defined a lineage set as occupying one village, representing at least two moieties, and coordinating its hunting and gathering activities per the religious deliberations and scheduling determined by two leaders (one from each of the descendant lines), with one leader occupying the ceremonial house and the other possessing the ceremonial bundle. Often, a lineage set had the exclusive power to forge and maintain economic ties to other villages of neighboring Serrano, Cahuilla, Chemehuevi, Gabrielino, and Cupeño. Desert Serrano villages are mentioned in the 1776 account of Fr. Francisco Garcés and in the records dating to the early 1800s by Fr. Joaquín Nuez. Fr. Garcés mentions villages along the Mojave River near today's city of Barstow and community of Daggett. The average village population was 70 people, and these settlements were generally spaced at 10-mile (16 km) intervals along the river.

The fundamental economy of the Serrano was one of subsistence hunting and collecting plant goods, with occasional fishing. Serrano territory was a trade nexus between inland tribes and coastal tribes, and trade and exchange were important aspects of the Serrano economy. Those living in the lower-elevation desert floor villages traded foodstuffs with people living in the foothill villages who had access to a different variety of edible resources. In addition to intervillage trade, ritualized communal food procurement events, such as rabbit and deer hunts and piñon, acorn, and mesquite nut-gathering events, integrated the economy and helped distribute resources that were available in different ecozones.

A variety of materials were used for hunting, gathering, and processing food, many of which were also used for shelter, clothing, and ceremonial items. Shell, wood, bone, horn, stone, plant materials, animal skins, and feathers were used for making currency, baskets, blankets, mats, nets, and bags. The Serrano made pottery and used it daily to carry and store water or foodstuffs; ceramics were also used as ceremonial objects. They also made awls, sinew-backed bows, arrows, arrow straighteners, throwing sticks (for hunting), traps, fire drills, stone pipes, musical instruments of various types (rattles, rasps, whistles, bull-roarers, and whistles), yucca fiber cordage for snares, nets and carrying bags, and clothing. A strong tradition of basket weaving incorporated the use of juncus sedge, deergrass, and yucca fiber.

Mainly due to the inland territory that the Serrano occupied beyond Cajon Pass, contact between Serrano and Europeans was relatively minimal prior to the early 1800s. As early as 1790, however, the Serrano began to be drawn into mission life. More Serrano were relocated to Mission San Gabriel Arcángel in 1811 after a failed indigenous attack on that mission. In the 1860s, a smallpox epidemic decimated many indigenous southern Californians, including the Serrano. Oral history accounts of a massacre in the 1860s at Twentynine Palms may have been part of a larger American military campaign that lasted 32 days.

Surviving Serrano sought shelter at Morongo with their Cahuilla neighbors; Morongo later became a reservation. Other survivors followed the Serrano leader Santos Manuel down from the mountains and toward the valley floors, and eventually settled what later became the San Manuel Band of Mission Indians Reservation. This reservation was established in 1891 (San Manuel Band of Mission Indians, 2008).

Although ethnographers considered the Vanyume extinct, recent genealogical research combined with mitochondrial DNA analysis indicates three lineages from the Fort Tejon area were originally from the village of *Topipabit* downstream from Victorville (CEC, 2008). These lineages are currently part of the San Fernando Band of Mission Indians, located in Newhall. This group, which includes Kitanemuk, Inland Chumash, Tataviam, and Vanyume, has applied for federal recognition.

Locations Important to the Serrano/Vanyume

Information in the following section, unless cited, is sourced from "Serrano/Vanyume" (Martinex et al, 2019). Further citation is not provided.

The Serrano people once occupied the Mountain, North Desert, and East Desert Regions of San Bernardino County. Desert Serrano villages are mentioned in accounts and records dating to the late 1700s and early 1800s along the Mojave River near today's cities of Barstow and Daggett (Coues, 1900: Vol. 1). The API overlaps the Mojave River in the immediate vicinity of Daggett, and also west of Barstow, in the vicinity of Lenwood; thus, it is possible that protohistoric Serrano village locations lie within or adjacent to the API. Desert Serrano settlements were generally spaced at 10-mile (16-km) intervals along the river, indicating that additional village sites could be located within or adjacent to the API, as it continues to parallel and overlap the Mojave River for approximately 55 km (34 miles) northeast of Daggett.

Specific Serrano villages along the Mojave River identified by Fr. Joaquín Nuez southwest of present-day Barstow include *Atongaibit*, *Topipabit*, *Cocama*, and *Sisugenat*; the villages of *Angayaba*, *Asambeat*, and *Guanachique* were located east of Barstow; and *Angayaba* was located east of Daggett. Nuez also noted a millingstone quarry at Elephant Mountain, near Forks-of-the-Road or Camp Cady, in the general vicinity of Angayaba. The village of *Asambeat* is understood to be located along the Mojave River east of *Angayaba*, and *Guanachique* in the vicinity of Soda Lake. Multiple ethnographic and historical accounts and mapped the approximate locations of these three villages along the Mojave River, as well as a fourth unnamed village location noted by Garcés, which may possibly be *Angayaba*.

Other important places to the Serrano in the Daggett area include a salt deposit known to the Mojave as *Yava'avi-ath'I*, as well as a mountain noted by Nuez as west or south of Daggett called *Hamuha* or *Ahamoha*, where Moha, an elderly female Desert Serrano informant Kroeber interviewed in the early twentieth century, was born. The mountains, hills, and valleys along the upper Mojave River, including the Granite, Newberry, and Ord mountains, were collectively referred to as *Temtak*.

3.7.1.2. Tribal Cultural Resources Identified in Project Region

The identification of TCRs in the project API was based on three information sources:

- TCRs previously recorded and identified in the record search completed for the project
- Review of ethnographic literature and geospatial data
- Tribal consultation

Each of these processes is described in the following sections.

Districts or Landscapes as TCRs

An examination of previous projects within or near the Direct and Indirect API resulted in the identification of one previously identified TCR, the Patsiata Historic District (defined as part of the Caltrans Olancha-Cartago Project) and one newly identified TCR, the Owens Valley Landscape. Both of these TCRs are described below.

Patsiata Historic District

As illustrated on Figure Figure 3.7-1 (Patsiata Historic District), the Patsiata Tübiji Nüümüna Awaedu Ananisudüheina or the Patsiata Historical District is a cultural landscape that is within the Owens Valley Landscape. The district encompasses approximately 186 square miles in the southern Owens Valley, surrounding Owens Lake. The boundary is designed to capture all the past shorelines of Owens Lake and is set at approximately the Younger Dryas extent of the lake, between 3700 and 3800 ft amsl. The boundary is also drawn to exclude the communities of Lone Pine, Keeler, Olancha, and Cartago. This district was defined and nominated by the Patsiata Tribal Oversight Committee, composed of the Tribal Historic Preservation Officers of five local Tribes with close ties to the lake: the Lone Pine Paiute-Shoshone Tribe, the Timbisha Shoshone Tribe, the Big Pine Paiute Tribe of Owens Valley, the Fort Independence Indian Community of Paiute Indians, and the Bishop Paiute Tribe. The district was determined eligible for listing on the CRHR by the California State Lands Commission (CSLC) and was listed on the NRHP in March of 2025 (SierraWave, 2025).

Patsiata is central to the traditional ways of life for the indigenous peoples of the region (the Nüümü/ Owens Valley Paiute and Newe/Southwestern Shoshone) since time immemorial and continues to hold significance for the Tribes representing their descendant communities (Lone Pine Paiute-Shoshone, Fort Independence Paiute, Big Pine Paiute, Bishop Paiute, and Timbisha Shoshone). Contributing resources to the Patsiata Historic District include natural elements such as springs, streams, Owens River, and Owens Lake, cultural and historical features such as the route of the Forced March (Inyo Wagon Road), and precontact archaeological sites (Wesson et al, 2025). These contributing resources are referred to here are “contributors.” There are 56 contributors to the Patsiata Historic District in the Direct API, 54 of which are individually eligible for listing in the CRHR (see Table 5B-1 in Appendix 5B).

One significant contributor is the Forced March Route much of which parallels what is now U.S. Route 395 (Figure Figure 3.7-2, Paiute Forced March Route). Segments of the route of the Forced March of Paiute people from Fort Independence to Fort Tejon by the U.S. Army in July 1863 utilized the Inyo County Wagon Road, also referred to as the Historic Owens Valley Wagon Road. This historic wagon road crosses the I-C Project alignment in two locations and lies within the Visual API for almost 5 miles. According to Lone Pine Paiute-Shoshone THPO Bancroft, the wagon road “followed a preexisting Indigenous trail that connected important places in the district, including those visited by Pon-ah-qua-zu and Hi-nu-nu" (Bancroft et al., 2025:68). Six additional locations on the Forced March route include the first night’s campsite in the town of Lone Pine, the second night’s campsite at the south end of Owens Lake near Olancha, the third night’s campsite at Little Lake, South Fork in Caliente, the Sebastian Indian Reservation and Fort Tejon (Bancroft et al., 2025).

The Patsiata Historic District is a contributing element to a larger and newly identified TCR, the Owens Valley Landscape, which is discussed in more detail below. Since the Patsiata Historic District is wholly inside the boundary of the Owens Valley Landscape, it is not discussed separately in the impact analysis.

Figure 3.7-1. Patsiata Historic District

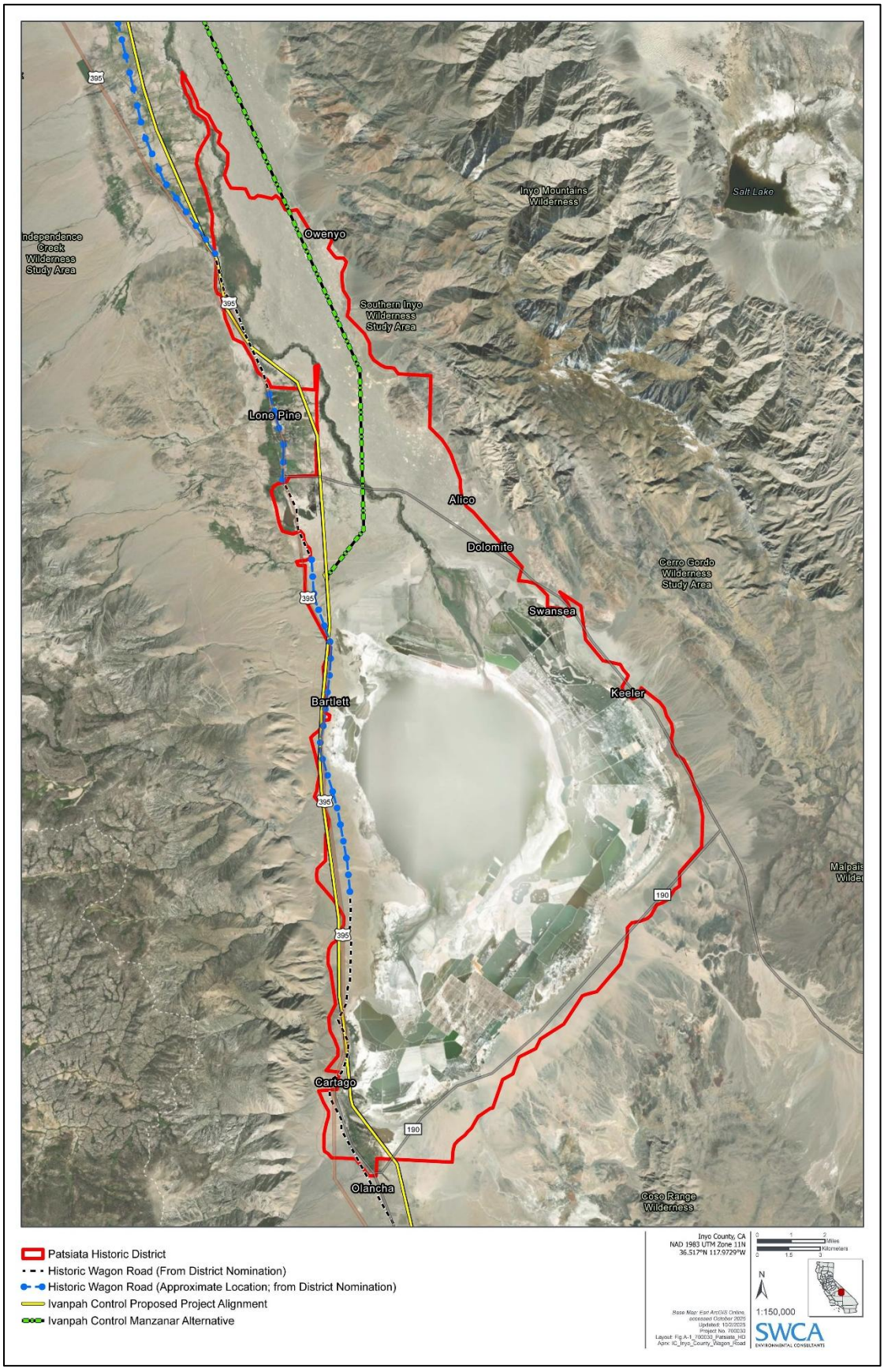


Figure 3.7-2. Paiute Forced March Route



Owens Valley Landscape (OVL)

Based on AB 52 consultation discussions (detailed in Section 3.7.1.6), the I-C Project passes through important resources of concern including but not limited to habitation, artifact concentrations, bedrock milling stations, burial areas, trails and rock art, all of which have cultural value to California Native American Tribes through the extensive history of occupation of the Owens River Valley over the past 11,500 years.

Consultation with the Big Pine Paiute Tribe of the Owens Valley, Bishop Paiute Tribe, Fort Independence Band of Paiute Indians, and the Lone Pine Paiute-Shoshone Tribe recommended the identification the OVL, a large cultural landscape that is of critical importance. This area is a TCR that encompasses and extends beyond the areas of Direct and Indirect Impacts for the I-C Project, referred to as the Direct and Indirect APIs. Important resources of concern include but are not limited to habitation sites, artifact concentrations, bedrock milling stations, traditional use areas, burial areas, trails and rock art that all contribute to the landscape.

The Owens Valley Landscape is illustrated in Figure 3.7.3 (Owens Valley Landscape). The boundaries of the landscape extend from the town of Bishop in the north, the town of Inyokern in the south, the foothills of the Sierra Nevada Mountains to the west and the foothills of the White Mountains to the east. The landscape consists of all precontact resources within its boundary, including those identified in the cultural resources survey discussed in Section 3.6 (Cultural Resources), those identified in ethnographic research, and the Patsiata Historic District identified in the record search, all of which are contributing elements to the landscape. The most prominent components of this landscape are the Owens River and Owens Lake. The period of significance of the resource extends from the earliest human occupation of the region beginning approximately 11,500 years ago and extending to the present day. Tribal members continue to use this landscape in both secular and ceremonial ways. Characteristic site types for the Owens Valley Landscape include natural features such as rivers, springs, lakes, and mountains. Residential sites include villages and camps with evidence of a full range of activities. Religious sites include cemeteries and petroglyphs.

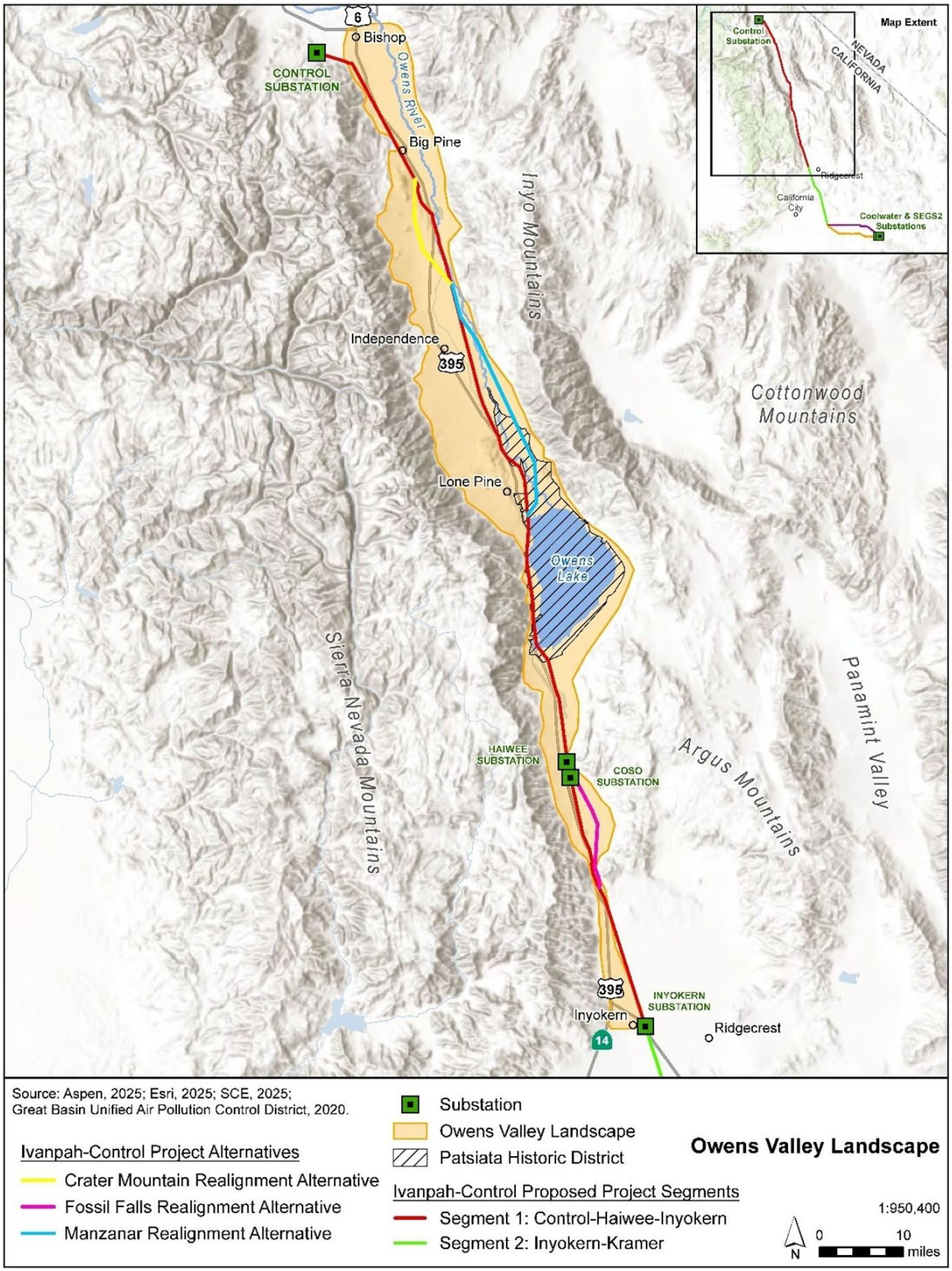
This newly defined landscape is eligible under Criterion 4 of the CRHR for its research potential and is thus considered a TCR under CEQA. The Owens Valley Landscape is the focus of the impact analysis presented in Figure 3.7.3 (Owens Valley Landscape).

3.7.1.3. Ethnographic Literature Review and Geospatial Analysis

SCE's consultants prepared an ethnographic literature review to highlight locations in the Direct and Indirect API that may be of significance to Native American groups, as indicated by available ethnographic data. These locations include known archaeological sites, villages occupied during time of contact with Europeans, resource gathering areas reported to ethnographers or historians, and natural features such as mountains and rivers considered spiritually important.

To identify TCRs and to support AB 52 tribal consultation, SCE's consultant completed additional research on the important locations described in the above ethnographic literature review, adding more historical and ethnographic sources. Historical maps of these locations were digitized and illustrated in Google Earth. These layers were then combined with maps of all project components, construction areas and the boundaries of precontact resources in the Direct API. This allowed specific archaeological sites to be associated with historically important mapped places. This information was used to support the determination of site eligibility for their association with important events (such as resource gathering, Criterion 1) or with historically important indigenous people (Criterion 2) if named individuals could be identified. As a result of this geospatial analysis, approximately 200 precontact resources were identified as significant as part of their association with specific villages, gathering areas, trails, and other historically known locations – in addition to be contributors to the Owens Valley Landscape.

Figure 3.7-3. Owens Valley Landscape



3.7.1.4. CPUC's Tribal Cultural Resources Research

In addition to the information gathered by SCE's consultant, the CPUC conducted archival research and reviewed literature to develop information on TCRs that were documented in the project region. The literature review process included a review of the sacred lands file, review of other CEQA documents in the project region, and review of ethnographic histories, reports, and other documentation provided by tribes during the AB 52 consultation process. The CPUC also obtained and reviewed all records of historic resources that had been recorded in the project API both prior to and during field surveys conducted by SCE for the proposed project. The CPUC also assembled ethnographic data and locations in an interactive map showing locations and descriptions of published ethnographic literature. This information was evaluated for the presence of other previously identified TCRs.

After the initial literature review phase, the CPUC consulted with tribes to define which resources within the project area are significant TCRs. The process and results of the tribal cultural resources data collection and research activities are summarized in Table 3.7-1.

Table 3.7-1. Summary of Tribal Cultural Resources Data Collection and Research

Activity	Description	Date
Sacred Lands File Search	A letter was sent to the Native American Heritage Commission (NAHC) on November 8, 2018, requesting an updated search of the Sacred Lands File and a current AB 52 Tribal Consultation List identifying any tribal groups or persons who have expressed an interest in receiving notification about projects being undertaken or applications being reviewed by the CPUC. On December 3, 2018, the NAHC responded that the Sacred Lands File search was positive and provided a list of the following seven tribal organizations identified as traditionally and culturally affiliated with the geographic area of the proposed project: Big Pine Paiute Tribe of the Owens Valley, Kern Valley Indian Community, Bishop Paiute Tribe, Death Valley Timbi-sha Shoshone Tribe, Fort Independence Indian Community of Paiutes, Lone Pine Paiute-Shoshone Tribe, and Walker River Reservation. **The Sacred Lands File search request and the NAHC response are provided in Appendix 5B.**	November 8, 2018
Field Surveys and Records Search	BLM/SCE conducted a records search at the Information Center and field surveys between 2016 and 2020 to collect data on historical resources in the area of potential effect that could also be potential tribal cultural resources.	2016/2017 and 2018 (Record Search); February 2019 to January 2020 (Field Surveys)
Ethnographic Data Map (Google Earth)	The CPUC researched and assembled ethnographic data for the entire Proposed Project API. The assembled data was mapped using Google Earth and shared with consulting tribes.	2020 - 2022
Develop Draft Heat Maps and Data Tables	The CPUC prepared heat maps to show areas of higher density of resources based on the record search and field survey results. The heat maps and tables of historical resources were made available to tribes during the data sharing process as part of tribal consultation.	December 11, 2019; January 20, 2020
Consultation with Tribes	The CPUC conducted outreach to and meetings with tribes to obtain information on tribal cultural resources in the Proposed Project area and define the significance of potential tribal cultural resources.	2018 - 2025

3.7.1.5. Tribal Consultation and TCR Data Collection Methodology

Information presented in this section was gathered through formal AB 52 consultation between the CPUC and California Native American tribes that have traditional and cultural affiliations with the Project area and that have requested to consult on the Proposed Project. The CPUC's outreach to Native American tribes began in 2018 and continues through this CEQA process, as described in the following discussion.

A summary of the AB 52 consultation process is provided in Table 3.7-2.

Table 3.7-2. Overview of AB 52 Consultation Process Activities

Activity	Description	Date (Start – Finish)
Notify Tribes on AB 52 List	The CPUC mailed notices to all tribes that requested AB 52 consultation and sent courtesy notices and emails to all tribes	December 2018 – October 2019
Pre-AB 52 Outreach	The CPUC conducted initial phone calls and meetings with tribes that had requested AB 52 consultation prior to deeming the application complete.	November 2019 - June 2020
Begin AB 52 Consultation	The CPUC initiated the AB 52 consultation process by notifying that the application had been deemed complete.	August 2020 - September 2020
Meetings and Data Sharing with Consulting Tribes	The CPUC held consultation meetings and shared data from Project surveys with consulting tribes to identify TCRs in the proposed project area.	September 2020 - August 2025
In Person Meeting	In-person meetings in Ridgecrest and Barstow; all consulting tribes invited.	January 8-9, 2024
Site Visit	The CPUC, in coordination with SCE and the BLM, met with tribal representatives at the locations of potentially important TCR locations to understand the significance of these sites to consulting tribes. The site visit focused on resources in Segment 1, due to the density of important resources in that segment.	April 15-17, 2025
Obtain Tribes' Comments on Project Mitigation Measures	The CPUC shared draft mitigation measures, resource significance determinations, and impact conclusions for TCRs with consulting tribes prior to publication of the Draft EIR. Tribes had the opportunity to review and provide comments to the CPUC on the mitigation measures, impacts, and TCR significance determinations for resources specific to each tribe.	December 2025 – February 2026
Address Tribes' Comments in EIR	The CPUC addressed comments from tribes and revised the mitigation measures, impact analysis, and TCR significance conclusions as appropriate in response to tribes' comments.	Comments on the Draft EIR will be addressed in the Final EIR

3.7.1.6. Summary of AB 52 Native American Tribal Consultation

The CPUC consulted with 18 Native American tribes. In addition to the 7 tribes named in the NAHC letter (see Table 3.7-1), 11 additional tribes were identified as groups that may have an interest in the Project and region; these were provided by other state and local agencies and the BLM. A summary of the consultation process is presented in this section. Please note that information exchanged during formal consultation is considered confidential, thus the information presented here is at a high level.

Sacred Lands File Search and Tribal Consultation List

A letter was sent to the Native American Heritage Commission (NAHC) on November 8, 2018, requesting a search of the Sacred Lands File and a current AB 52 Tribal Consultation List identifying any tribal groups or persons who have expressed an interest in receiving notification about projects being undertaken or applications being reviewed by the CPUC. On December 3, 2018, the NAHC responded that the Sacred

Lands File search was positive and provided a list of 7 tribal organizations identified as potentially having an interest in the proposed project. This list was expanded based on outreach to other agencies.

Notification Requirements of Assembly Bill (AB) 52.

AB 52 requires that within 14 days of the lead agency determining that a project application is complete, a formal notice and invitation to consult about the proposed project be sent to all California Native American tribal representatives, regardless of federal recognition status, which have requested in writing to be notified of projects that may have a significant effect on TCRs located within the proposed project area (PCR § 21080.3.1(d)). The notice must include a brief project description, project location, and must state that the tribe has 30 days to request consultation

Once California Native American tribes have received the project notification letter, the tribe then has 30 days to submit a written request to consult (PCR § 21080.3.1(b)(1)). Upon receiving a Tribe's written request to consult, the lead agency then has 30 days to begin tribal consultation (PCR § 21080.3.1(e)).

Consultation must include discussion of specific topics or concerns identified by tribes. Any information shared between the tribes and the lead agency representatives is protected under confidentiality laws and not subject to public disclosure (GC § 6254(r); GC § 6254.10) and can be disclosed only with the written approval of the tribes who shared the information (PCR § 21082.3(c)(1-2)).

Consultation as defined in AB 52 consists of the meaningful, timely, and good faith effort to seek, discuss, and carefully consider the views of others, in a manner that is cognizant of all parties' cultural values and, where feasible, seeking agreement. Consultation between the lead agency and a consulting Tribe concludes when either of the following occurs: (1) the parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists on a TCR; or (2) a consulting party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached (PCR § 21080.3.2(b)).

Project Notification

While agency determination of application completeness is typically the beginning of the formal AB 52 consultation process, it is the policy of the CPUC to engage in early, often, and meaningful consultation on a government-to-government basis with both federally and non-federally-recognized California Native American Tribes and tribal organizations. To that end, CPUC's Tribal Consultation Policy encourages the CPUC contacting potentially affected tribes as early as feasible to "allow tribal officials the opportunity to provide meaningful and timely input in the development of policies, processes, programs, and projects that have tribal implications." (GC § 11019.81(b)(3); CPUC, 2025).

Pursuant to the CPUC's Tribal Consultation Policy, the CPUC's outreach to tribes began well before the CPUC determined that SCE's application was complete. When the CPUC received the first draft of the SCE application (November 2018), the CPUC started providing preliminary information describing the Proposed Project to tribes and reaching out to identify those interested in consultation. This outreach continued through 2025 when the SCE's second revised application was submitted to the CPUC. The second revised application eliminated a portion of the Proposed Project but did not add new components. EIR Appendix 5B presents a summary of all CPUC tribal outreach efforts and tribal responses.

During pre-filing review of the Draft PEA, on December 14, 2018, the CPUC sent project information to 33 tribes on the NAHC and agency lists for the Project, informing them of the anticipated filing of the application. After SCE's application was filed in 2019, the CPUC sent a formal notification of the Project and initiation of consultation to the 18 tribes that indicated intertest in AB 52 consultation during pre-filing, and the CPUC followed up with each tribe with phone calls.

Tribes responding to the CPUC's 2018 outreach stating that the project area was outside of their geographic range include: Agua Caliente Band of Cahuilla Indians, Pala Band of Mission Indians, and Santa

Ysabel Band of the Iipay Nation (Kumeyaay), the Rincon Band of Luiseno Indians, and the Susanville Indian Rancheria. The CPUC responded to any tribes that indicated the Project was outside of their geographic range by notifying the tribe that they would be removed from the project's AB 52 consultation list and would not receive further notification about the Project.

A summary of all early outreach efforts to tribes on the NAHC and agency lists is provided in Appendix 5B.

Consulting Tribes

The 18 tribes entering formal consultation as result of the CPUC outreach are the following:

- Big Pine Paiute Tribe of the Owens Valley
- Bishop Paiute Tribe
- Cocopah Indian Tribe
- Colorado River Indian Tribes
- Fernandeño Tataviam Band of Mission Indians
- Fort Mojave Indian Tribe
- Fort Independence Band of Paiute Indians
- Kern Valley Indian Community
- Lone Pine Paiute-Shoshone Tribe
- Mono Lake Kutzadika Tribe
- Morongo Band of Mission Indians
- Quechan Tribe of the Fort Yuma Reservation
- San Fernando Band of Mission Indians
- San Manuel Band of Mission Indians
- Tejon Indian Tribe
- Timbisha Shoshone Tribe
- Tubatulabals of Kern Valley
- Twenty-Nine Palms Band of Mission Indians

Meetings with Native American Tribes

As described above, tribal outreach began in 2018 when SCE submitted its draft PEA. After initial outreach to determine interest from each tribe, the CPUC team completed the following outreach efforts:

- Conducted calls with each consulting tribe to provide an overview of the Project and explain the consultation process. These introductory calls were held between October 2020 and February 2021.
- Held a joint project meeting in May 2020 for participating tribes for the Proposed Project and the SCE Control-Silver Peak Project. The purpose of this meeting was to provide an overview of the two projects. This meeting was held virtually. Tribes participating in this meeting were the Mono Lake Kutzadika Tribe, Lone Pine Paiute-Shoshone Tribe, Fort Independence Band of Paiute Indians, Bishop Paiute Tribe, and Big Pine Paiute Tribe of the Owens Valley.
- Held two in-person formal consultation meetings, with a virtual attendance option in Barstow on January 8, 2024 and in Ridgecrest January 9, 2024. The meetings included a summary of the Project; an overview of survey results; a summary of the Alternatives to the project; the CPUC's approach to tribal consultation under AB 52; an overview and interactive map of ethnographic literature, project area, and survey results; and an open discussion. The tribes that attended the meeting included the Big Pine Paiute Tribe of the Owens Valley, Bishop Paiute Tribe, Colorado River Indian Tribes, Fort Independence Band of Paiute Indians, Fort Mojave Indian Tribe, Kern Valley Indian Community, Lone Pine Paiute-Shoshone Tribe, Mono Lake Kutzadika Tribe, Morongo Band of Mission Indians, San Fernando Band of Mission Indians, San Manuel Band of Mission Indians, Tejon Indian Tribe, Timbisha Shoshone Tribe, Tubatulabals of Kern Valley, and Twenty-Nine Palms Band of Mission Indians.
- Made calls to all consulting Tribes to invite them to attend in-person an AB 52 formal consultation meeting and site visit to be held in 2025. The first invitation calls were made in September 2024. Additional calls were made in November 2024 to the Big Pine Paiute Tribe of the Owens Valley, Bishop Paiute Tribe, Fort Independence Indian Community of Paiutes, Lone Pine Paiute-Shoshone Tribe, and San Manuel Band of Mission Indians. The purpose of the November 2024 calls was to request a list of sites of interest for the April 2025 site visit.

Tribes holding formal consultation with the CPUC were Big Pine, Bishop, Fort Independence, Kern Valley, Lone Pine, Morongo, and Timbisha. In January 2024, an in-person group meeting was held including the Twenty-Nine Palms Band of Mission Indians.

Site Visits

During the week of April 14, 2025, a three-day site visit took place along Segment 1 to sites on non-federal lands. The visit was led by representatives of SCE and was also attended by CPUC and BLM team members. The purpose of the site visit was to see certain specific resources of interest to the tribes and to show how they may be affected by project construction.

The following tribes were represented in the site visit:

- Big Pine Paiute Tribe of the Owens Valley
- Bishop Paiute Tribe
- Fort Independence Band of Paiute Indians
- Lone Pine Paiute-Shoshone Tribe
- Timbisha Shoshone Tribe

Summary of Outreach and Discussion with Individual Tribes

EIR Appendix 5B presents a detailed list of contacts with each consulting tribe. The appendix presents the date and purpose of each contact for each tribe. The following is a summary of events related to tribal consultation from 2018 to the present.

- **2018**: The CPUC received a list of tribal organizations identified as potentially having an interest in the proposed project. In addition, the CPUC obtained names of tribes that may have an interest in the Project and region from other state and local agencies and the BLM. The CPUC sent initial AB 52 pre-consultation notices to tribal organizations.
- **2019:** The CPUC sent additional consultation notices to, and held introductory calls with, the tribes.
- **2020:** The CPUC held further introductory calls with the tribes and provided project data. The CPUC initiated formal consultation under AB 52.
- **2021**: The CPUC held virtual meetings and sent emails to the tribes providing project updates
- **2022:** The CPUC continued to hold virtual meetings and provide the tribes with project updates.
- **2023:** The CPUC continued to hold virtual meetings and provide the tribes with project updates and receive tribal input on the Project. The CPUC began scheduling an in person formal consultation meeting.
- **2024:** The CPUC held in-person and virtual formal consultation meetings for the Project. The CPUC continued to meet with the tribes virtually to provide project updates, receive input, and plan for site visits.
- **2025**: The CPUC and the tribes participated in a site visit for Segment 1. The CPUC debriefed with the tribes on the site visit and received further input on the Project. The CPUC continued to meet with the tribes regarding mitigation measures for the Project.
- **2026:** The CPUC provided the draft mitigation measures for Tribal cultural and cultural resources to all 18 consulting Tribes for their comments and input prior to the release of the Draft EIR. The CPUC held virtual meetings and exchanged emails to consult with the Tribes regarding comments and input on the draft mitigation measures and potential testing of sites along alternative routes (see Appendix 5B for details).

Tribal Input Received

The CPUC conducted formal consultation with multiple tribes with cultural affiliations with the Project Area, as summarized below. See Appendix 5B for a detailed description of the consultation process.

Segment 1: The Owens Valley Landscape (OVL)

The focus of consultation in Segment 1 was discussion of the extensive history of occupation of the Owens River Valley over the past 11,500 years. As mentioned, the I-C Project passes through important resources of concern including but not limited to habitation, artifact concentrations, bedrock milling stations, burial areas, trails and rock art, all of which have cultural value to California Native American Tribes.

The OLV (Figure 3.7-3) was identified in consultation with the Big Pine Paiute Tribe of the Owens Valley, Bishop Paiute Tribe, Fort Independence Band of Paiute Indians, and the Lone Pine Paiute-Shoshone Tribe as a large cultural landscape of critical importance. To emphasize this area's importance, THPO Sean Scruggs of Fort Independence Indian Community of Paiutes sent a formal scoping letter to the CPUC in September of 2020 (during the public scoping period) stating that:

- The Project runs through the Owens Valley and will directly affect known and undisclosed cultural sites. Proper review and study can only occur with tribal consultation and input.
- Many cultural sites (in Owens Valley) are "unrecorded" to protect ancestors. Records review will only identify documented sites, which likely did not include tribal perspectives or identify "no known cultural resources." An article was provided regarding the Zumstein Collection, which discloses how unauthorized collection of resources has "worked to erase our footprint" in the Owens Valley.

As a result, this newly defined landscape is eligible under Criterion 4 of the CRHR for its research potential and is thus considered a TCR under CEQA. The Owens Valley Landscape is the focus of the impact analysis presented in Section 3.7.3.

Segment 2

During formal AB 52 consultation, no specific TCRs were identified in Segment 2. Consulting tribes expressed that some proposed towers are within culturally sensitive areas and requested to participate in monitoring.

Segment 3N and 3S

During formal AB 52 consultation, no specific TCRs were identified in Segment 3N or 3S. Consulting tribes expressed that some proposed towers are within culturally sensitive areas and requested to participate in monitoring.

Mitigation Concepts Recommended During Tribal Consultation

Tribal input received during consultation is presented in detail in EIR Appendix 5B. The following recommendations were provided for project mitigation measures:

- The Big Pine Paiute Tribe of the Owens Valley: The Tribe requested mitigation measures including community benefit program, language class, curation facility funding, tribal monitoring training, or vehicle for tribal monitors. The Tribe also indicated that they prefer reburial of tribal cultural resources in place in all feasible locations.
- The Bishop Paiute Tribe requested a mitigation measure that would provide funds for repatriation of tribal resources.
- The Colorado River Indian Tribes requested mitigation to ensure resource avoidance and notification regarding tribal monitoring opportunities during construction and pedestrian surveys.
- The Fort Independence Band of Paiute Indians requested funding for tribal curation of resources and preservation facilities. In addition, the tribe requested measures related defining actions to be taken in the event of inadvertent discovery of resources and development of a reburial plan. The Tribe also suggested that mitigation should fund a GIS program and provision of cadaver dogs for archaeological investigations related to extent of burial sites.

- Kern Valley Indian Community requested that mitigation provide for tribal monitoring of the Project, reburial of artifacts, and that SCE not be allowed to excavate to remove tower footings.
- The Lone Pine Paiute-Shoshone Tribe requested that tribal monitoring occur for all construction. In addition, the Tribe indicated they would be interested in mitigation in the form of compensatory funding of tribal projects or priorities.
- The Morongo Band of Mission Indians requested mitigation that would require tribal monitoring during construction.
- The Quechan Tribe of the Fort Yuma Reservation requested mitigation measures related to tribal monitoring during construction, and avoidance and minimization of effects on resources.
- The San Manuel Band of Mission Indians requested that pole replacement occur within the same location as existing poles when within the boundaries of sensitive resources. The Tribe also strongly recommended that artifacts not be collected during Phase I and II archeological assessments.
- The Tejon Indian Tribe requested that the survey crew include one or more qualified Tribal Cultural Specialists and/or Professional Archaeologists in the project survey crews in Kern County.
- The Timbisha Shoshone Tribe requested mitigation that would ensure that tribal monitoring is required.

Tribal Comment on Draft Mitigation Measures

The CPUC provided copies of draft mitigation measures for tribal cultural and cultural resources to all 18 consulting Tribes on December 2, 2025 and on January 2, 2026. The CPUC requested input from the Tribes by January 16, 2026. On December 10, 2025, the Quechan Tribe of the Fort Yuma Reservation responded that they had no comments on the draft mitigation measures. On January 14, 2026, the CPUC met with the Fort Independence Band of Paiute Indians to discuss their comments on the draft mitigation measures. The Fort Independence Band of Paiute Indians provided input on the draft mitigation measures related to Tribal monitoring, data recovery processes, and the funding program defined in Mitigation Measure TCR-1b. The CPUC considered the Tribe's concerns and modify several mitigation measures. The Fort Independence Band of Paiute Indians also provided input on the use of historical human remains detection dogs during pre-construction surveys; information on this topic was added to Mitigation Measure CUL-1d (Prepare and implement a Cultural Resources Management Plan).

3.7.2. Regulatory Setting

Regulations relevant to cultural resources are presented in Section 3.6.2. This section presents regulations relevant only to tribal cultural resources.

3.7.2.1. Federal Regulations, Policies and Standards

No federal regulations related to tribal cultural resources are applicable to the Project.

3.7.2.2. State Regulations, Policies and Standards

The following is a discussion of the most pertinent laws affecting TCRs and the proposed project and impact analysis from a state perspective. Please see also Section 3.6, Cultural Resources, for more details about state regulations that are also relevant to tribal cultural resources.

Assembly Bill 52, Native American Consultation Under CEQA

AB 52 requires consultation with a tribe that is traditionally and culturally affiliated with the geographic area where a project is located if the tribe has requested consultation regarding projects in the tribe's area of traditional and cultural affiliation. (PRC §§ 21073, 21074, 21080.3, 21082.3, 21083.09, 21084.2, and 5097.94 [AB 52, 2014]). Public Resources Code Section 21074 defines a TCR as "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." TCRs also include "non-unique archaeological resources" that may not be scientifically significant but still hold sacred or cultural value to a consulting tribe.

CEQA requires that impacts to TCRs be identified and, if impacts are significant, that mitigation measures be implemented to reduce those impacts to the extent feasible (PRC § 21081). In the protection and management of the cultural environment, both the statute and the CEQA Guidelines provide definitions and standards to be used for the assessment of potential impacts to TCRs.

Impacts to a TCR are considered potentially significant if the affected resource is: (1) listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in PCR § 5020.1(k); or (2) a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in of PCR Section 5024.1(c). In applying these criteria, the lead agency must consider the significance of the resource to a California Native American tribe.

Thus, a project may have a substantial adverse change in the significance of a TCR if:

- The adverse change is identified as being substantial through consultation with any California Native American tribe that requests consultation and is traditionally and culturally affiliated with the geographic area of a proposed project (PCR § 21084.2).
- The resource is listed, or eligible for listing, in the CRHR or in a local register of historical resources, and the resource or its immediate surroundings are subject to physical demolition, destruction, relocation, or alteration such that the significance of the historical resource would be materially impaired. (State CEQA Guidelines section 15064.5 (b)).

The fact that a TCR is not listed in or determined to be ineligible for listing in the CRHR, is not included in a local register of historical resources or is not identified in a historical resources survey does not preclude a lead agency from determining that the resource may be a historical resource.

CPUC Tribal Consultation Policy

On April 26, 2018, the CPUC adopted a Tribal Consultation Policy, consistent with Executive Order B-10-11 issued by Governor Edmund G. Brown, Jr. on September 19, 2011. Executive Order B-10-11 declares that "the State is committed to strengthening and sustaining effective government-to-government relationships between the State and the tribes by identifying areas of mutual concern and working to develop partnerships and consensus." The Executive Order directs state executive agencies and departments to "encourage communication and consultation with California Indian Tribes."

Executive Order B-10-11 further directs state agencies and departments "to permit elected officials and other representatives of tribal governments to provide meaningful input into the development of legislation, regulations, rules, and policies on matters that may affect tribal communities." The goals of the CPUC Tribal Consultation Policy (CPUC, 2025) are as follows:

- Recognize and respect tribal sovereignty
- Encourage and facilitate tribal government participation in CPUC proceedings
- Give meaningful consideration to tribal interests in issues within the CPUC's jurisdiction
- Protect TCRs

CPUC policy also permits consultation even after the response period specified in AB 52 has lapsed, if there is sufficient time for meaningful consultation. If a tribal government believes that consultation has not met the standards set forth in the Tribal Consultation Policy, it may submit a written letter to the Executive Director of the CPUC explaining the deficiencies. Within 30 days, the Executive Director will either meet with the tribal government, or respond in writing, and will then direct any further consultation that he or she believes is appropriate.

3.7.2.3. Local Regulations, Policies and Standards

Pursuant to General Order 131-E, the Project is not subject to local authority because the CPUC has exclusive jurisdiction over the siting, design and construction of electric power line projects, distribution lines, substations, and electric facilities constructed by public utilities subject to CPUC jurisdiction.

3.7.3. Environmental Impacts of the Proposed Project

3.7.3.1. Applicant Proposed Measures

Table 3.7-3 presents the Applicant Proposed Measures (APMs) that relate specifically to tribal cultural resources as well as those for cultural resources, as defined by SCE in its application to the CPUC. These APMs are also addressed in the impact analysis for cultural resources (Section 3.6).

Table 3.7-3. Applicant Proposed Measures – Tribal Cultural Resources

APM	Description
APM TCR-1	**Tribal Monitoring.** An archaeological monitor, and tribal monitor that is culturally affiliated with the project area, may be present for all ground-disturbing activities within or directly adjacent to identified TCR(s). The archaeological and tribal monitors will consult the CRMP to determine when to increase or decrease the monitoring effort should the monitoring results indicate a change is warranted. Monitoring reports will be prepared and submitted to the BLM and 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).
APM CUL-1 *(superseded by mitigation in Section 3.6)*	**Develop Cultural Resource Management Plan.** SCE shall prepare and submit for approval a Cultural Resource Management Plan (CRMP) to guide all cultural resource management activities during 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 the BLM, CPUC and tribes for review and approval at least 90 days prior to the start of construction. The CRMP shall include, but not be limited to, the following sections: ■ Cultural Resources Management Plan: The CRMP shall define and map all known cultural resources, including all NRHP- and CRHR-eligible properties in or within 100 feet of the Proposed Project APE/API. ■ The CRMP will also contain details about how all NRHP- and CRHR-eligible properties will be avoided and protected during construction. Protective 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 what avoidance measures will be used, where and when they will be implemented, lines of authority and communication, and how avoidance measures and enforcement of ESAs will be coordinated with construction personnel. ■ Cultural Resource Monitoring and Field Reporting: Detail procedures for archaeological and Native American monitoring, for reporting protocols, and for determining when monitoring is no longer necessary. Include guidelines for monitoring in Areas of High Sensitivity for the discovery of buried NRHP and/or CRHR eligible cultural resources, including burials, cremations, or sacred sites. ■ Unanticipated Discovery Protocol: Detail procedures for 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. 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 appropriate Native American tribes and approved by the BLM and CPUC, prior to implementation. ■ Data Analysis and Reporting: 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, GIS shapefiles, and analytical data) at a facility that is approved by the BLM and CPUC, and dissemination of reports to appropriate repositories.

APM	Description
APM CUL-2 *(superseded by mitigation in Section 3.6)*	**Avoid Environmentally Sensitive Areas (ESAs).** SCE shall perform surveys for any project areas not yet surveyed (e.g., new, or modified staging areas, pull sites, or other work areas) and areas covered by expired surveys (older than 10 years). Resources discovered during the surveys would be subject to Mitigation Measures 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 mechanisms shall include fencing off Environmentally Sensitive Areas (ESAs) for the duration of the Proposed Project or as outlined in the CRMP.
APM CUL-3 *(superseded by mitigation in Section 3.6)*	**Conduct Construction Monitoring.** Archaeological monitoring shall occur as outlined in the CRMP, including but not limited to the archaeological monitor's authority, duties, and reporting requirements. 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 area. A Native American monitor may be required at culturally sensitive locations specified during government-to government consultation with Native American tribes. SCE shall retain and schedule any required Native American monitors. The qualifications of the principal archaeologist and monitors shall be approved by the BLM and CPUC. Brief monitoring reports shall be submitted to the BLM and CPUC on a weekly basis. A monitoring report presenting the results of the monitoring effort shall be prepared and submitted to BLM and the CPUC for review and approval within one year of the completion of monitoring.
APM CUL-4	**Properly Treat Human Remains.** SCE shall follow all federal and state laws, statutes, and regulations that govern the treatment of human remains. Minimally, all work in the vicinity of such as find will cease within a 200-foot radius of the remains and the area will be protected to ensure that no additional disturbance occurs. Should inadvertent effects to or unanticipated discoveries of human remains be made on federal lands, the BLM, 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 CPUC and County Coroner shall be notified immediately and the remains shall be treated in accordance with Health and Safety Code Section 7050.5, CEQA Section 15064.5(e), and Public Resources Code Section 5097.98. SCE shall assist and support the BLM and/or state agencies, as appropriate, in all required NAGPRA and Section 106 actions, government to-government and consultations with Native Americans, agencies, and consulting parties as requested by the BLM and/or state agencies. SCE shall comply with and implement all required actions and studies that result from such consultations.

3.7.3.2. Impact Significance Criteria

Under CEQA, a Tribal Cultural Resource (TCR) can be defined in two ways:

- First, if a resource is identified by a California Native American tribe and that resource is listed, or eligible for listing, on the California Register of Historical Resources (CRHR) or a local historic register.
- Second, if a tribe identifies a resource as culturally significant but it is not listed or eligible for listing, the lead agency may make a discretionary determination based on supporting evidence.

The following significance criterion for TCRs is derived from Appendix G of the State CEQA Guidelines. Impacts to TCRs are considered significant if the Proposed Project would:

- TCR-1: 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 either:

  (a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)

  or:

  (b) A resource determined by the lead agency to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, considering the significance of the resource to a California Native American tribe.

In making a finding that a resource is a Tribal cultural resource, the lead agency may consider, among other evidence, elder testimony, oral history, tribal archival information, testimony of an archaeologist or other expert certified by the tribe, official declarations or resolutions adopted by the tribe, formal statements by the tribe's historic preservation officer, or other historical notes and anthropological records (OPR 2017).

Adverse changes are considered, but not limited to, the following:

- Physical, visual, or audible disturbances resulting from construction and development that would affect the integrity of a resource or the qualities that make it eligible for the CRHR;
- Exposure of resources to vandalism or unauthorized collecting;
- A substantial increase in the potential for erosion or other natural processes that could affect resources; or
- Neglect of a resource that causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious or cultural significance to a Native American tribe.

Based on these requirements, the impact evaluated in this section is the following:

- **Impact TCR-1**: Cause a substantial adverse change in the significance of a tribal cultural resource that is either listed or eligible for listing in the California Register of Historical Resources, or is not listed or eligible but has been identified as a tribal cultural resource by the CPUC.

3.7.3.3. Impacts and Mitigation Measures

Impact TCR-1: Cause a substantial adverse change in the significance of a tribal cultural resource that is either listed or eligible for listing in the California Register of Historical Resources, or is not listed or eligible for the register but has been identified as a tribal cultural resource by the CPUC.

Construction

SIGNIFICANT AND UNAVOIDABLE. As described in Section 3.7.1.6 (Summary of AB 52 Native American Consultation), one new TCR was identified during formal consultation: the Owens Valley Landscape (OVL). The Patsiata Historic District, which is listed on the NRHP, is considered a contributing feature to the OVL, and is wholly within the OVL boundary, and thus not analyzed independently.

The OVL is situated within both the Direct and Indirect API and is at risk of experiencing significant direct and indirect impacts from the Proposed Project. As a non-renewable TCR, the OVL offers critical insight into California's historic landscape and the traditional lifeways of Native American communities. It holds ongoing cultural, spiritual, and educational value, as local Native American groups continue to engage with the OVL to sustain and revitalize their cultural practices.

Under CEQA, the OVL qualifies as a TCR due to its ongoing significance to local Native American communities. It is not only a place of historic and archaeological value but also a living cultural landscape where traditional practices are actively maintained. Direct impacts could adversely affect the integrity of the OVL. These impacts would result from the following activities:

- Ground disturbance during additional driving and heavy equipment use of the access roads;
- Use of cranes, helicopters, and other vehicles to construct new structures and to string new conductor;
- Use of cranes, helicopters, and other vehicles to remove existing structures and existing conductor.
- Construction would occur over three years (currently estimated at 2027 to 2030) due to the SCE's need to install all new structures in Segment 1, then string conductor, and energize the new line – all before starting removal of the existing structures.

Additionally, since the Proposed Project replacement structures must be located in a separate ROW (about 50 feet from the existing structure locations to allow the existing line to remain energized during construction of the new structures), the ground disturbance for the Proposed Project would extend into new areas beyond those disturbed in the past from installation and maintenance of existing facilities. This construction effort and timeline increases the potential for direct impacts to contributing features of the OVL. The construction process results in repeated ground disturbance over a period of years, with the potential for direct construction-related impacts to contributing features occurring multiple times over the three-year construction period.

Such construction related impacts would not only diminish the potential of the OVL to yield important information about Native American heritage (Criterion 4 of the CRHR) but could result in the loss of the spatial relationships between sites, natural and biological resources within the OVL. These spatial relations would be severed even through scientific data recovery, because once archaeological resources are removed from their original context, they are removed forever. More critically, these impacts could disrupt the cultural and spiritual relationships that Native communities maintain with the land. These effects would constitute a significant adverse impact under CEQA, particularly in light of the OVL's role in supporting cultural identity, continuity, and traditional lifeways. In addition to the potential impacts to the OVL, a known TCR, there is the potential for construction activities to result in the exposure of unknown buried archaeological resources that could be considered TCRs under CEQA, especially in Segment 1 (the most archaeologically dense area of the Proposed Project). If construction resulted in damage to unknown buried TCRs, as described in more detail below, a significant impact would occur.

The Proposed Project includes six APMs that SCE has proposed to address the protection of cultural and Tribal Cultural Resources (see Table 3.7-3). APMs TCR-1, TCR-2, and CUL-4 provide valuable protection to resources and allow for Native American engagement and monitoring. However, these measures would not eliminate the significant impact to tribal cultural resources.

Additional APMs are presented for cultural resources in Section 3.6. APMs CUL-1, CUL-2, and CUL-3 are lacking important details: they do not present performance standards, staff qualifications, defined roles and responsibilities, buffer zones, reporting standards, and other information that is needed to ensure that TCRs are adequately protected and managed. Because these APMs are not adequately detailed, project construction would still result in a significant impact. Therefore, this analysis defines a suite of recommended mitigation measures that supersede APMs CUL-1 through CUL-3, expand on the information provided in APMs, and include mitigation measures proposed by consulting tribes during formal AB 52 consultation.

Direct construction-related impacts to known and unknown buried TCRs would be reduced in severity with implementation of Mitigation Measures TCR-1a and TCR-1b (full text below), and CUL-1a through

CUL-1h (see Section 3.6 Cultural Resources for full text of the cultural resources mitigation measures). The mitigation measures are summarized as follows:

- **Mitigation Measure TCR-1a (Conceal Exposed Tribal Cultural Resources After Construction).** Requires SCE to conceal any exposed Tribal Cultural Resources up to completion of the Project by relocating TCRs, repositioning TCRs, or planting native plants to prevent looting.
- **Mitigation Measure TCR-1b (Provide Funding to Tribes for Research, Education, and Interpretation).** Requires SCE to establish a fund, managed by a third-party non-profit administrator, to provide grant funding to consulting tribes. This measure is presented in response to a request from the consulting tribes in the Owens Valley. Due to the severity of impacts resulting from Project construction of new structures and demolition of existing structures within the OVL, it is expected that many resources will be damaged or destroyed. Also, because construction of new structures would occur first and the removal of existing structures would occur months or years later, there would be two rounds of active ground-disturbing construction, each with potential to damage or destroy resources. This funding could support tribal data collection and management, documentation or preservation of tribal language, development of processes for physical protection or preservation of resources, or development of educational programs.
- **Mitigation Measure CUL-1a (Retain a Cultural Resources Specialist)**: Requires SCE to hire an archaeologist as a designated lead Cultural Resources Monitor (CRM) with demonstrated prior experience in the Owens Valley and Mojave Desert regions and previous experience working with Southern California Tribal Nations.
- **Mitigation Measure CUL-1b (Develop Data Recovery Plans for Known Historical Archaeological Resources):** If avoidance or preservation in place of an NRHP or CRHR listed or eligible resource is not feasible by the project design, then a data recovery plan shall be developed by the CRM for those impacted resources by Project segment. Details of the plan are presented in the measure.
- **Mitigation Measure CUL-1c (Cultural Resources Environmental Awareness Training):** Requires that SCE provide training for all project personnel for awareness of laws and penalties, artifacts that may be found, sensitivity of each area, and authority of the CRM in stopping construction.
- **Mitigation Measure CUL-1d (Prepare and implement a Cultural Resources Management Plan; *supersedes APM CUL-1 and APM CUL-2*):** Defines the contents of the CRMP, monitoring process and schedule, Environmentally Sensitive Areas (ESAs), and processes to be implemented in the event that unanticipated resources or human remains are discovered.
- **Mitigation Measure CUL-1e (Cultural Resources Monitoring; *supersedes APM CUL-3*)**: Requires full-time on-site monitoring in Segment 1 and near known eligible resources in other segments; defines monitoring processes and record-keeping.
- **Mitigation Measure CUL-1f (Tribal Monitoring; *supersedes APM CUL-3*)**: Requires that SCE employ tribal monitors during all ground disturbing activities.
- **Mitigation Measure CUL-1g (Remove Structures by Helicopter in Culturally Sensitive Areas)**: Requires SCE to identify structures in culturally sensitive areas that would be removed by helicopter to minimize ground disturbance.
- **Mitigation Measure CUL-1h (Leave All Foundations in Place for Structures Removed in Culturally Sensitive Areas)**: Requires certain structure foundations to be left in place (rather than excavated to remove all foundation components), to minimize disturbance of subsurface cultural resources and the existing landscape.

- **Mitigation Measure CUL-1i (Avoid Disturbance Within and Near Sites SWCA-L030-1056 and SWCA-L030-106B):** Avoidance of any new ground disturbance within the boundaries of these sites is required to minimize further damage. In addition, use of the existing access road between the two adjacent SCE structures would cause substantial further damage, so access options are required.

As summarized above, Mitigation Measures TCR-1a, TCR-1b, and CUL-1a through CUL-1i are intended to avoid or minimize impacts to both known and unknown buried archaeological resources that contribute to the OVL, to the extent feasible. These measures include the establishment of Environmentally Sensitive Areas (ESAs) to avoid impacts during construction and maintenance, the presence of archaeological and Native American monitors, evaluation of any discoveries, and data recovery excavations for resources that cannot be avoided. While these mitigation measures would substantially reduce the potential for unmitigated loss of information value, it is important to recognize that, from the perspective of consulting tribes, any disturbance to precontact archaeological resources, regardless of scientific intent, constitutes a significant direct impact to the OVL as a TCR under CEQA. These impacts are not solely about data loss but also about the disruption of cultural and spiritual connections to the land.

Additionally, the original construction of the transmission infrastructure has already caused both direct and indirect impacts to the OVL by physically altering the cultural landscape. The Proposed Project would require both the removal of existing structures and the replacement of these structures in similar locations. Therefore, although the recommended mitigation measures would reduce adverse effects to the extent feasible, the construction of the Proposed Project would nonetheless result in a direct and indirect significant impact to the OVL. As such, the impact to TCRs would remain significant and unavoidable, even after implementation of all mitigation.

Operation and Maintenance

LESS THAN SIGNIFICANT WITH MITIGATION. The continued presence of the Proposed Project (after removal of existing structures and replacement with new structures) would create ongoing indirect impacts, particularly visual and auditory intrusions. These effects would be present throughout operation, continuing to affect the integrity and cultural value of the OVL. However, these visual and auditory intrusions exist now, so are considered part of the CEQA baseline.

As described in Section 3.6.3.4, maintenance activities could include ground disturbing activities, such as access road grading and pole replacements. These activities could occur in previously disturbed or in undisturbed locations. As such, maintenance activities could cause a significant impact to known resources and buried unknown TCRs in the Direct API. To reduce the potential effects of maintenance activities, the following mitigation measures would be required for the life of the Project during operation:

- **Mitigation Measure TCR-1a (Conceal Exposed Tribal Cultural Resources After Construction).** Requires SCE to conceal any exposed Tribal Cultural Resources up completion of the Project by relocating, redirecting, or planting native plants to prevent looting.
- **Mitigation Measure CUL-1c (Cultural Resources Environmental Awareness Training)** requires annual WEAP training for personnel responsible for O&M activities, during which the crew would be made aware of procedures to follow in the event of unanticipated discoveries of cultural resources.
- **Mitigation Measure CUL-1d** (**Prepare and implement a Cultural Resources Management Plan)** requires personnel be provided with access to a non-confidential GIS database showing ESAs that must be avoided by O&M activities.

These mitigation measures would substantially reduce the potential for unmitigated loss of information value. With implementation of these measures, the impacts to TCRs during operations and maintenance would be less than significant.

Mitigation Measures for Impact TCR-1

All mitigation measures applicable to Cultural Resources, as detailed in Section 3.6, also apply to TCRs and are listed after the TCR-specific mitigation measures below.

MM TCR-1a **Conceal Exposed Tribal Cultural Resources After Construction.** Upon completion of construction activities on private or state-owned land, any exposed Tribal cultural resources shall be concealed to prevent looting. Tribal monitors shall be present for any concealment activities and shall be compensated for their monitoring efforts. The identification of native plants shall be consistent with the requirements developed in the *Habitat Restoration and Revegetation Plan* prepared in compliance with APM BIO-RES-1.

Methods of concealment may include any of the following, as determined appropriate for the situation by a Tribal monitor:

- Where feasible, relocate Tribal cultural resources to areas with less visibility.
- Reposition objects within the natural environment, such as large rocks or fallen trees, to conceal Tribal cultural resources.
- Plant native plants to help conceal resources. Planting shall be in cooperation with consulting tribes, using tribal labor if feasible. Prioritize use of plants raised by consulting tribes, if available.

MM TCR-1b **Provide Funding to Tribes for Research, Education, and Interpretation.** The Applicant shall create a fund with a deposit of $150,000 to be managed by a third-party fund manager at a non-profit organization, to be distributed as grants to consulting tribes. Implementation of this measure is contingent on the identification of an appropriate non-profit grant managing entity. Each of the 18 AB 52 consulting tribe may apply for a grant for up to $25,000. If the value of all grant applications exceeds the funding available, the third-party fund administrator may provide a pro-rated reduction in funding to the tribes providing grant applications.

- Grant funding shall be offered to all consulting tribes within 3 months of the start of Project construction, and (if funds remain available) again one and two years after the start of construction until funds are fully expended. The fund manager shall inform consulting tribes of the funds that are available at the start of each year and the process for applying for grants. The fund manager shall establish a 3-month period each year within which tribes may request grant funding.
- The third-party fund manager will hold, invest, and manage the funds, evaluate grant requests, disperse money to grant recipients, and provide a financial report to SCE and the CPUC on an annual basis at the end of each grant year.
- The third-party fund manager shall provide to the CPUC and SCE the following:
  - A copy of the organization's Articles of Incorporation and Bylaws.
  - Self-certification that the entity is in good standing with the IRS and is exempt from income tax under IRS code sections 501(a) and 501(c)(3).
  - A statement of the entity's purpose, as it pertains to protection of lands and/or preservation of tribal resources; and
  - The organization's policies and guidelines for staff decisions concerning grant requests and disbursement.

- The third-party fund manager shall develop a grant application request form for consulting tribes to complete. The application will explain the tribes' proposed use of grant funds, and explaining how or whether the funds would be used to study or protect resources within the Owens Valley Landscape.
- In addition to providing $150,000 in grant funding, SCE shall also be responsible for third-party fund management fee covering all direct and indirect costs associated with fund administration.
- If at the end of the three year period, funds remain in the account managed by the third-party fund manager because they have not been requested by consulting tribes, remaining funds shall be donated to the California Indian Heritage Center Foundation (a California State Parks Project).

The third-party fund manager shall prioritize grant requests that focus on study or protection of resources within the Owens Valley Landscape. Grant requests may include requests for funding such as efforts that will:

- Enhance tribal data collection and management (e.g., geographic information system development)
- Document or preserve tribal languages
- Develop processes for physical protection or preservation of resources (e.g., growing and planting of native plants to obscure resource locations)
- Develop educational programs for construction monitors to better understand and protect tribal resources.

CUL-1a **Retain a Cultural Resources Specialist** (see full text in Section 3.6)

CUL-1b **Develop Data Recovery Plans for Known Historical Archaeological Resources** (see full text in Section 3.6)

CUL-1c **Cultural Resources Environmental Awareness Training** (see full text in Section 3.6)

CUL-1c **Prepare and Implement a Cultural Resources Management Plan** (see full text in Section 3.6)

CUL-1e **Cultural Resources Monitoring** (see full text in Section 3.6)

CUL-1f **Tribal Monitoring** (see full text in Section 3.6)

CUL-1g **Remove Structures by Helicopter in Culturally Sensitive Areas** (see full text in Section 3.6)

CUL-1h **Leave All Foundations in Place for Structures Removed in Culturally Sensitive Areas** (see full text in Section 3.6)

CUL-1i **Avoid Disturbance Within Environmentally Sensitive Areas** (see full text in Section 3.6)

3.7.4. Mitigation Monitoring, Compliance, and Reporting

Table 3.7-4 presents the mitigation monitoring, compliance, and reporting information for tribal cultural resources. Refer to Table 3.6-10 in Section 3.6 for mitigation monitoring requirements for measures related to cultural resources.

Table 3.7-4. Mitigation Monitoring Program – Tribal Cultural Resources

Mitigation Component	Text or Description
Mitigation Measure TCR-1a	**Conceal Exposed Tribal Cultural Resources After Construction**
Location	Construction areas on private or state owned land
Monitoring/Reporting Action	Tribal monitors to be present during concealment activities
Effectiveness Criteria	Concealment activities are monitored and implemented as approved
Responsible Agency	CPUC
Timing	Upon completion of construction activities
Mitigation Measure TCR-1b	**Provide Funding to Tribes for Research, Education, and Interpretation**
Location	Project-wide
Monitoring/Reporting Action	SCE to establish a fund administered by a third-party administrator
Effectiveness Criteria	Fund is established as approved
Responsible Agency	CPUC
Timing	For a period of 3 years after the start of construction

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3.8. Energy

This section describes existing environmental conditions and anticipated impacts associated with the Proposed Project for Energy.

The environmental setting for energy supplies and the use of energy resources is presented in Section 3.8.1 and relevant regulations and standards are summarized in Section 3.8.2. Section 3.8.3 describes the impacts on the environment associated with implementation of the Proposed Project. These impact discussions introduce mitigation measures that would reduce or avoid significant adverse environmental impacts. Section 3.8.4 presents the mitigation monitoring, compliance, and reporting plan and Section 3.8.5 lists references cited in this section. Chapter 4 describes the environmental impacts of the alternatives to the Proposed Project. Cumulative impacts for all disciplines are considered in Chapter 5.

There were no comments received during the scoping period that addressed energy-related impacts.

3.8.1. Environmental Setting

3.8.1.1. Regional Setting

The Proposed Project would involve upgrades and modifications to SCE's existing facilities that are used to deliver electrical power to California's end users of electricity. Most of the SCE load is located within the Los Angeles basin. SCE's service territory includes all or portions of 15 counties in central and southern California, consisting of Fresno, Imperial, Inyo, Kern, Kings, Los Angeles, Madera, Mono, Orange, Riverside, Santa Barbara, San Bernardino, Tulare, Tuolumne, and Ventura Counties, and includes approximately 201 incorporated communities as well as outlying rural territories (SCE, 2020; Amended Application for the Proposed Project).

The energy sources that make up the mix of power supplied to SCE customers, relative to the 2021 California power mix, are summarized in Table 3.8-1, which shows the data from SCE's utility-specific Power Content Label (CEC, 2021).

Table 3.8-1. Energy Sources of Electricity Supplied to Customers (Power Content)

Energy Resources	SCE	2021 California-wide Power Mix
Eligible Renewable	**31.4%**	**33.6%**
Biomass & biowaste	0.1%	2.3%
Geothermal	5.7%	4.8%
Eligible hydroelectric	0.5%	1.0%
Solar	14.9%	14.2%
Wind	10.2%	11.4%
Other Energy Sources		
Coal	0%	3.0%
Large Hydroelectric	2.3%	9.2%
Natural Gas	22.3%	37.9%
Nuclear	9.2%	9.3%
Other	0.2%	0.2%
Unspecified sources of power *	34.6%	6.8%
Total	**100%**	**100%**

* "Unspecified sources of power" means electricity from transactions that are not traceable to specific generation sources.
Source: CEC, 2021.

For recent years up to 2022, the average annual electricity consumption served to SCE customers is approximately 84 million megawatt-hours (MWh). The SCE-owned transmission system serves not only customers in the SCE service area but the load of other cities and entities that obtain transmission service through SCE's system. Table 3.8-2 shows the baseline electricity consumption by the SCE loads over the prior five years, separated by customer classes.

Table 3.8-2. Electricity Consumption for Load Served by SCE (million MWh per year)

Sector, Load Served	2018	2019	2020	2021	2022	Average (5-year)
Ag & Water Pump	3.208	2.812	3.112	3.274	3.150	3.111
Commercial Building	31.427	30.659	28.800	29.008	30.496	30.078
Commercial Other	4.407	4.450	4.449	5.212	5.321	4.768
Industry	13.315	13.197	12.450	12.878	12.877	12.943
Mining & Construction	2.418	2.379	1.822	1.564	1.776	1.992
Residential	28.398	28.985	32.475	30.758	31.604	30.444
Streetlight	0.577	0.453	0.426	0.636	0.647	0.547
SCE Total Usage	83.749	82.935	83.533	83.330	85.870	83.883

Note: Usage expressed in millions of MWh (one million MWh equals one terawatt-hour or TWh).
Source: CEC, 2023a.

3.8.2. Applicable Regulations, Policies, and Standards

3.8.2.1. Federal Regulations, Policies and Standards

No federal regulations concerning wasteful, inefficient, or unnecessary consumption of energy resources were identified as relevant to the Proposed Project.

3.8.2.2. State Regulations, Policies and Standards

California's Energy Action Plan and Loading Order

California has mandated and implemented aggressive energy-use reduction programs for electricity and other resources. In 2003, California's first Energy Action Plan (EAP) established a high-level, coherent approach to meeting California's electricity and natural gas needs and set forth the "loading order" to address California's future energy needs. The "loading order" established that the state, in meeting its energy needs, would invest first in energy efficiency and demand-side resources, followed by renewable resources, and only then in clean conventional electricity supply (CPUC, 2008). Since that time, the CPUC and California Energy Commission (CEC) have overseen the plans, policies, and programs for prioritizing the preferred resources, including energy efficiency and renewable energy.

California's Renewables Portfolio Standard (RPS)

Electric utilities in California must procure a minimum quantity of electricity sales from eligible renewable energy resources as specified by RPS requirements. The most-recent update to the RPS targets was set forth in 2018 with the "100 Percent Clean Energy Act of 2018" [Senate Bill 100 (SB 100)], which establishes the policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of retail sales of electricity to California end-use customers by December 31, 2045. SB 100 requires the CPUC and CEC to ensure that implementation of this policy does not cause or contribute to greenhouse gas emissions increases elsewhere in the western grid.

Integrated Resource Planning

An Integrated Resource Plan (IRP) is an electricity system planning document that lays out the energy resource needs, policy goals, physical and operational constraints, and the general priorities or proposed

resource choices of an electric utility, including customer-side preferred resources. Through Senate Bill 350 (De León, Chapter 547, Statutes of 2015) (SB 350), the CPUC requires each electric load serving entity to develop an IRP that takes a 10-year look-ahead for overall electric system reliability, local reliability needs, and flexibility needs to allow the electricity sector to contribute to California's economy-wide greenhouse gas emissions reductions goals. Similarly, publicly owned utilities (POU) must also adopt IRPs subject to a review by the CEC for consistency with statewide guidelines.

California's Integrated Energy Policy Report (IEPR)

Senate Bill 1389 (Bowen, Chapter 568, Statutes of 2002) 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 §25301[a]).

CAISO Transmission Plan

The annual CAISO Transmission Plan is developed through a broad stakeholder process and coordination with the CPUC and CEC to provide a comprehensive evaluation of the CAISO transmission grid, which includes facilities owned by SCE. The functions of the CAISO Transmission Plan are to identify upgrades needed to adequately keep pace with California's policy goals, address grid reliability requirements, identify zones of resource development and bring economic benefits to consumers; the plan identifies certain transmission projects as needed to maintain the reliability of the CAISO transmission system and unlock access to renewable generation resources to meet state energy needs (CAISO, 2023).

State CEQA Guidelines

The California Natural Resources Agency adopted certain amendments to the State CEQA Guidelines that became effective in 2019; these changes define how CEQA Lead Agencies consider the environmental impacts of energy use. CEQA Guidelines Section 15126.2(b) and Appendix F require analysis of a project's energy use, in order to assure that energy implications are considered in project decisions. CEQA requires a discussion of the potential environmental effects of energy resources used by projects, with particular emphasis on avoiding or reducing the "wasteful, inefficient, and unnecessary consumption of energy" (see Public Resources Code section 21100(b)(3)).

3.8.2.3. Local Regulations, Policies and Standards

Pursuant to General Order 131-E, the Project is not subject to local authority because the CPUC has exclusive jurisdiction over the siting, design and construction of electric power line projects, distribution lines, substations, and electric facilities constructed by public utilities subject to CPUC jurisdiction. Local ordinance policies and requirements are presented in Table 3.8-3 only where these requirements are used as the basis for impact analysis.

Table 3.8-3. Local Land Use Documents Related to Energy

Document	Plans, Policies, Programs
Kern County General Plan, Energy Element, 5.4.7 Transmission Lines (Kern County, 2009)	**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.

Document	Plans, Policies, Programs
	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.
	Policy 5. The County should discourage the siting of above-ground transmission lines in visually sensitive areas.
	Policy 6. The County should encourage new transmission lines to be sited/configured to avoid or minimize collision and electrocution hazards to raptors.
County of San Bernardino General Plan, Infrastructure and Utilities, Goal IU-5 Power and Communications (San Bernardino County, 2019).	**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-5.2 Expanded high-speed internet and wireless communication We encourage the expansion of affordable, high-speed internet access in underserved and unserved unincorporated communities. We encourage the expansion of advanced mobile and fixed wireless communication technologies that improve service, coverage, and reliability throughout the county.
	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.

3.8.3. Environmental Impacts of the Proposed Project

3.8.3.1. Impact Analysis Approach

All construction- and operation-related activities would involve use of energy-consuming equipment and processes. This analysis presents a qualitative discussion of the Proposed Project's energy use for all phases and components. As set forth in the State CEQA Guidelines, Appendix F: Energy Conservation, the goal of conserving energy implies the wise and efficient use of energy including:

- Decreasing overall per capita energy consumption;
- Decreasing reliance on fossil fuels such as coal, natural gas and oil; and
- Increasing reliance on renewable energy sources.

The energy impact analysis emphasizes avoiding or reducing inefficient, wasteful and unnecessary consumption of energy resources, and whether the Project would result in a potentially significant environmental impact due to inefficient, wasteful, and unnecessary consumption of energy resources. State CEQA Guidelines, Section 15126.2(b) requires the analysis to focus on energy use that is caused by the Project. If analysis of the Project's energy use reveals that the Project may result in significant

environmental effects due to inefficient, wasteful, or unnecessary use of energy, then the analysis must identify ways to mitigate that energy use.

Examples of energy conservation measures that may be relevant to addressing energy are provided in Appendix F: Energy Conservation, within the CEQA Guidelines.

Applicant Proposed Measures (APMs)

SCE did not propose Applicant Proposed Measures (APMs) related to energy supply or energy use. However, APM AQ-1 (Tier 4 Construction Equipment) and APM NOI-1 (Implement Best Management Practices for Construction Noise) are referenced in this section. Implementation of these APMs is considered part of the Proposed Project for the purposes of the evaluation of environmental impacts. The APMs discussed in this section are presented in Table 3.8-4

Table 3.8-4. Applicant Proposed Measure – Energy

APM	Description
APM AQ-1 ***(Superseded by Mitigation Measure AQ-2a)***	**Tier 4 Construction Equipment.** All construction equipment with rating between 100 and 750 horsepower (hp) would be required to use engines compliant with U.S. 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 engine would be equipped with a Tier 3 engine and documentation of the unavailability would be provided.
APM NOI-1	**Implement Best Management Practices for Construction Noise.** SCE shall employ the following noise-control techniques, at a minimum, to reduce construction noise exposure at noise sensitive receptors during construction: ■ To the extent feasible, construction activities shall be confined to daytime, week-day and weekend established by the applicable local jurisdiction. 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 not less effective than those originally installed by the manufacturer. ■ Construction traffic and helicopter flight shall be routed away from residences and schools, where feasible. 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.

3.8.3.2. Impact Significance Criteria

The significance criteria listed below are based on Appendix G of the CEQA Guidelines.

Would the Proposed Project:

- EN-1: Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?
- EN-2: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

3.8.3.3. Impacts and Mitigation Measures

The Cal City Options defined in Section 2.1.1 and illustrated in Figure 2-2 would have impacts no different from those defined for Impacts EN-1 and EN-2, because the extent of ground disturbance and equipment used for the Proposed Project would be the same as that required for any of the Cal City Options.

Impact EN-1: Result in wasteful, inefficient, or unnecessary consumption of energy resources.

Construction

LESS THAN SIGNIFICANT WITH MITIGATION. SCE's Proposed Project would modify their existing 115 kilovolt (kV) subtransmission lines located in Inyo, Kern, and San Bernardino Counties to remediate physical clearance discrepancies. The construction activities would rebuild components of the existing 115 kV subtransmission system that extend over 262 miles between 9 existing SCE substations across portions of the three counties.

Construction activities would consume nonrenewable energy resources, primarily petroleum-based transportation fuels (diesel, motor gasoline, and aviation fuel), to power construction equipment, construction vehicles, and helicopters. Additionally, construction would require the manufacture and delivery of new equipment and materials, which would require energy use. Based on their composition, some of the equipment and materials to be removed as part of the Project would be salvageable and recyclable.

The short-term use of fuels by equipment, motor vehicle trips, and helicopters during construction would be necessary to install the facilities. The total energy requirements during construction are not quantified within the Project Description. However, the use of nonrenewable resources can be estimated in terms of the volumes of diesel, gasoline, and aviation fuel, by reviewing the products of combustion of these fuels (e.g., the quantities of greenhouse gases would be directly proportional to the volumes of fuels used). Based on the anticipated quantities of carbon dioxide-equivalent (CO2e) emissions estimated as 18,287 metric tons of CO2e (in Section 3.10, Greenhouse Gas Emissions), approximately 1.798 million gallons of diesel fuel would likely be used for Proposed Project construction over approximately four years.[1]

To put these volumes into perspective, data from the California Energy Commission indicates that California's refineries normally produce around 2.0 million barrels per week of diesel and 6.2 million barrels per week of gasoline (CEC, 2023b). This amounts to statewide production of roughly 12 million gallons of diesel and 37.2 million gallons of gasoline each day. In comparison, the total diesel fuel volume used during the entirety of Proposed Project construction over four years (1.79 million gallons) would represent about 15 percent of California's typical daily production volume (12 million gallons per day).

Energy conservation features are not specifically defined within the SCE's APMs. However, certain features of the proposed construction practices would serve to avoid wasteful, inefficient, and unnecessary consumption of energy during construction. For example, energy use would be reduced by properly maintaining the equipment and using engines certified to current standards (APM-AQ-1[2]) and steps taken to limit the idling of equipment (APM-NOI-1). APM AQ-1 is superseded by Mitigation Measure AQ-2a (see Section 3.4, Air Quality), which controls off-road equipment emissions with the use of Tier 4 engines. These efforts would help to ensure the efficient use of fuels during construction.

EIR Section 3.20 (Utilities and Service Systems) considers landfill capacity and finds that existing capacity would be adequate to serve Project needs.

Therefore, with the implementation of MM AQ-2a, the construction phase of the Project would create a less-than-significant impact on local and regional energy supplies and a less-than-significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources. Impacts would be less than significant with mitigation.

[1] Note: The volume of diesel fuel used can be approximated from an emission factor of 10.2 kg CO2 per gallon, based on the fuel heating value (0.138 million British thermal units per gallon) multiplied by the default CO2 emission factor (73.96 kg CO2 per million British thermal unit), in Table 2-3 of Title 17, California Code of Regulations, Section 95115.

[2] Energy use would still be reduced with the use of Tier 4 engines as specified by Mitigation Measure AQ-2a which supersedes APM AIR-1.

Operations and Maintenance

LESS THAN SIGNIFICANT. Maintenance and normal operations, including inspections of the Proposed Project components, would require use of fossil fuels (diesel and gasoline) for motor vehicle trips and occasional use of off-road equipment. SCE currently performs operations and maintenance activities for upkeep of the existing subtransmission lines that would be rebuilt under the Proposed Project. No material changes in the existing operations and maintenance activities, or the locations of these activities, are anticipated with implementation of the Proposed Project. No new full-time staffing or induced population growth would occur. Accordingly, no notable change in long-term consumption of energy resources would occur with Proposed Project.

The consumption of energy resources during operation of the Project would not be wasteful, inefficient, or unnecessary. The Proposed Project operation would have a less-than-significant environmental impact on local or regional energy supplies and energy resources.

Mitigation Measures for Impact EN-1

AQ-2a **Control Off-Road Equipment Emissions with Tier 4 Engines** (Supersedes APM AQ-1); See full text in Section 3.4.3.

Impact EN-2: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

LESS THAN SIGNIFICANT. The objectives of the Proposed Project would promote SCE's delivery of safe and reliable electrical service by remediating the identified discrepancies. The existing subtransmission system allows power from generation facilities to flow from north to south, to be exported from the project area to the rest of the SCE system, including the Los Angeles basin, through SCE's Lugo Substation (SCE, 2020; June 5, 2020, Responses to ED-Deficiency Letter-004). Discrepancies may contribute to unplanned outages and thus decreased electric service reliability; remediating the identified discrepancies would thus allow SCE to continue to provide reliable electric service to its customers. SCE has the responsibility to ensure that electrical transmission, subtransmission, and distribution systems have sufficient capacity to maintain safe, reliable, and adequate service to customers, under FERC, NERC, WECC, and CPUC rules, guidelines and regulations (EIR Chapter 1, Introduction).

The Proposed Project would modify and rebuild existing facilities in a manner that would provide some increased capacity due to the conductor selection and higher amperage ratings of conductors that would be used. This effect would not, by itself, increase the ability to access or deliver power from renewable energy generators. For increasing the deliverability of future generation to end-users, SCE would need to receive formal interconnection requests and complete studies of interconnection requirements, funded by the interested generator. For delivering power from future generation projects, SCE notes that additional new network upgrades would be needed outside the scope of the Proposed Project and in the "South of Kramer" area that is outside of the project area before future generation projects could become deliverable (SCE, 2020; June 23, 2020, Responses to ED-Deficiency Letter-002). By remediating existing discrepancies and providing conductors with higher ratings, the Proposed Project would pose no conflict with and could be combined with upgrades beyond the scope of the Proposed Project to partially facilitate California's plans to accommodate greater access to renewable resources.

The project would neither conflict with nor obstruct state or local plans for renewable energy or energy efficiency, and, therefore, impacts would be less than significant.

Mitigation Measures for Impact EN-2

No mitigation is required.

3.8.4. Mitigation Monitoring, Compliance, and Reporting

Table 3.8- presents the mitigation monitoring, compliance, and reporting information for air quality.

Table 3.8-5. Mitigation Monitoring Program – Air Quality

Mitigation Component	Text or Description
Mitigation Measure AQ-2a	**Control Off-Road Equipment Emissions with Tier 4 Engines (Supersedes APM AQ-1).**
Location	Entire Project
Monitoring / Reporting Action	CPUC to verify that SCE uses required engine types
Effectiveness Criteria	Emissions are reduced based on use of cleaner engines
Responsible Agency	CPUC
Timing	Ongoing during construction

3.8.5. References

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3.9. Geology, Soils, and Paleontology

This section describes existing environmental conditions and anticipated impacts associated with the Proposed Project for Geology, Soils, and Paleontology. Evaluated in this section are impacts related to geologic hazards such as slope failures, subsidence, erosion, and unsuitable soils (corrosion and expansion potential); seismic hazards such as fault rupture, strong seismically-induced ground shaking, liquefaction, and seismically-induced slope failures; and the potential for damage to paleontological resources. Impacts related to soil erosion are also discussed under Sections 3.4 (Air Quality) and 3.12 (Hydrology and Water Quality).

The following discussions address existing environmental conditions in the Project area, identify and analyze environmental impacts, and recommend measures to reduce or avoid adverse impacts anticipated from Proposed Project construction and operation. In addition, existing laws and regulations relevant to geologic and seismic hazards, and paleontological resources are described. In some cases, compliance with these existing laws and regulations would serve to reduce or avoid certain impacts that might otherwise occur with the implementation of the Project.

The environmental setting for Geology, Soils, and Paleontology is presented in Section 3.9.1 and relevant regulations and standards are summarized in Section 3.9.2. Section 3.9.3 describes the impacts on the environment associated with implementation of the Proposed Project. These impact discussions introduce mitigation measures that would reduce or avoid significant adverse environmental impacts. Section 3.9.4 presents the mitigation monitoring, compliance, and reporting information, and Section 3.9.5 lists references cited in this section. Chapter 4 describes the environmental impacts of the alternatives to the Proposed Project. Cumulative impacts for all disciplines are considered in Chapter 5.

There were no comments received during the scoping period that addressed geology, soils, and paleontology.

3.9.1. Environmental Setting

Baseline geologic, seismic, and soils information were collected from published and unpublished literature, GIS data, and online sources for the proposed Project and the surrounding area. Data sources included the following: SCE's Proponents Environmental Assessment, geologic literature from the U.S. Geological Survey and California Geological Survey, geologic and soils GIS data, and online reference materials. All the sources used for the purposes of characterizing baseline conditions and conducting the analysis for this Project are referenced as appropriate. The literature review focused on the identification of specific geologic and seismic hazards with the Project site. The study area was defined as the locations of Project components and the areas immediately adjacent to the Project components for most geologic and soils issue areas, with the following exception: the study area related to seismically induced ground shaking includes significant regional active and potentially active faults within 50 miles of the Project. The Project area relevant to the analysis of paleontological resources is the physical footprint of Project construction, operation and maintenance, and decommissioning activities.

3.9.1.1. Regional Geology and Physiography

The Proposed Project traverses portions of the Basin and Range and the Mojave Desert Geomorphic Provinces of California. Segment 1 and the northern portion of Segment 2 are located within the Basin and Range province. The southern half of Segment 2 and all of Segments 3N and 3S are located in the Mojave Desert Province.

The Basin and Range province covers a large area of the western United States, and its unique topography is typified by abrupt changes in elevation, alternating between narrow faulted mountain chains and flat arid valleys or basins. It is characterized by interior drainage with lakes and playas, and a horst and graben structure of subparallel, fault-bounded ranges separated by down-dropped basins. The horst and graben

structure of the Basin and Range province is the result of extensional tectonics throughout the region and has resulted in a topography that is dominated by isolated, north-trending mountain ranges separated by desert basins. In southern California, the Basin and Range province is bounded on the north and west by the Sierra Nevada; on the south by the Garlock fault; and on the east by the California border. The Basin and Range region is best known for its great amount of topographic relief with high mountain ranges and deep valleys with the highest point in the eastern Sierra Nevada at Mt. Whitney (14,495 ft elevation) located only about 80 miles from Badwater in Death Valley (-283 ft elevation) with several deep valleys in between, including Owens Valley (Norris & Webb, 1976).

The Mojave Desert geomorphic province, commonly referred to as the Mojave block, is a region of isolated mountain ranges separated by expanses of desert plains. The Mojave Desert province is wedge shaped, bounded on the north by the Garlock Fault and its extension to the east, the San Andreas fault and the Transverse Ranges on the west, the Colorado River and California-Nevada border on the east, and the San Gabriel Mountains, San Bernardino Mountains, and the San Andreas fault on the south. The Mojave Desert province is characterized by interior enclosed drainage and many playas. The physiography of the Mojave Desert region is dominated by prominent NW-SE trending faults and generally NW-SE trending mountain ranges. The Mojave Desert region exhibits a wide variety of geomorphic landforms which represent the varying erosional, depositional, and tectonic processes the area is undergoing, including: volcanic features such as basaltic flows, cinder cones, and sheets, dikes, sills, domes, and plugs; erosional, depositional, and weathering features such as pediments, alluvial fans, playas, badlands, dune fields, caliche, desert pavement, and desert varnish; and tectonic (faulting) features such as scarps, offset streams, and sags and sag ponds (Norris & Webb, 1976).

Basement rocks in the Basin and Range and Mojave areas consist predominantly of folded and faulted Precambrian to Mesozoic plutonic, metamorphic and sedimentary rock, and Tertiary age non-marine sedimentary and volcanic rock. The basement rock in both areas is overlain by Quaternary age sedimentary rock with localized Quaternary volcanics.

3.9.1.2. Geology

The Proposed Project generally traverses alluvial plains, alluvial fans and pediments, badlands, hills, and the foothills of numerous adjacent mountain ranges. Most of the Proposed Project components and work and staging areas are underlain by Holocene to Pliocene alluvium, with lesser amounts of Quaternary, Tertiary, and Triassic to Cretaceous volcanic rocks; Recent to Late Proterozoic sedimentary rocks; Mesozoic granitics; and Mesozoic to Precambrian metamorphic rocks. General descriptions of the geologic materials underlying Proposed Project components, listed chronologically, are summarized in Appendix 6, Table Ap.6-1.

3.9.1.3. Soils

Soils within the Proposed Project area reflect the underlying rock type, the extent of weathering of the rock, the degree of slope, and the degree of human modification. The National Resource Conservation Service (NRCS) Soil Survey Geographic (SSURGO) Soil Web Survey was reviewed to identify and download GIS databases for soil surveys crossed by and adjacent to a 1-mile corridor along the Proposed Project. The Proposed Project corridor intersects the following SSURGO soil survey databases: Soil Survey for Benton-Owens Valley and Parts of Inyo and Mono Counties, California (CA802); Soil Survey for San Bernardino County, California, Mojave River Area (CA671); and Soil Survey for Mojave Desert Area, California, Northeast Part (CA805). SSURGO soil data was found to not be available for portions of Segments 1, 3N, 3S and all of Segment 2; therefore, national level STATSGO soil data for California was used to identify soil associations and complexes crossed by the Proposed Project in the areas where no SSURGO data was available (NRCS, 2017). These and adjacent soil databases were reviewed to identify soil associations and complexes and key soil characteristics underlying the Proposed Project (NRCS, 2017,

2019 a-g). Summaries of the significant characteristics of the soils underlying each Proposed Project segment are presented in Section 3.9.1.8 (Environmental Setting by Segment) and in Appendix 6.

Soil erosion is the removal of material from the surface soil and erosion processes involve detachment and short transport of particles from the soil surface, most commonly by wind and water (NRCS, 2004). The properties of soil that influence erosion by water (rainfall and runoff) are ones that affect the infiltration capacity of a soil, and those that affect the resistance of a soil to detachment and being carried away by falling or flowing water. Soils on steeper slopes would be more susceptible to erosion due to the effects of increased surface flow (runoff) on slopes where there is little time for water to infiltrate before runoff occurs. Sheet erosion occurs when water runs over a large uniform area picking up and distributing soil particles. Rill erosion occurs as concentrated surface runoff begins to remove soil along concentrated zones which form numerous small, but conspicuous, water channels or tiny rivulets. Susceptibility to sheet and rill erosion from water for soils underlying the Proposed Project ranges from low to moderate (NRCS, 2017).

Soils containing high percentages of fine sand and silt and that are low in density, are generally the most susceptible to wind erosion. As the clay and organic matter content of these soils increases, the potential for erosion decreases. Susceptibility of soils to wind erosion generally ranges from low to high within the project area (NRCS, 2017 and 2019a-g). Proposed Project ground disturbance will loosen soils making them more susceptible to erosion.

Expansive soils are characterized by their ability to undergo significant volume change (shrink and swell) due to variation in soil moisture content. Changes in soil moisture could result from a number of factors, including rainfall, landscape irrigation, utility leakage, and/or perched groundwater. Expansive soils are typically very fine grained with a high to very high percentage of clay. Soils with moderate to high shrink-swell potential would be classified as expansive soils. Most of the soils underlying the Proposed Project are sandy in nature and are classified as having low expansive potential by the NRCS (NRCS, 2017 and 2019a-g).

Corrosive soils can have a detrimental effect on concrete and metals. Corrosivity of soils is generally related to the following key parameters: soil resistivity; presence of chlorides and sulfates; oxygen content; and pH. Typically, the most corrosive soils are those with the lowest pH and highest concentration of chlorides and sulfates. High sulfate soils are corrosive to concrete and may prevent complete curing reducing its strength considerably. Low pH and/or low resistivity soils could corrode buried or partially buried metal/steel structures. Corrosion potential of the soils underlying the Proposed Project area range from low to high for attack on metal/steel and to concrete (NRCS, 2016 and 2019a-g).

Collapsible soils are low density, fine-grained granular soils with a high void ratio and low clay content that may collapse or undergoes appreciable loss of volume upon wetting, load application, or both (NRCS, 2004). The collapse or rapid settlement is due to rearrangement of the soil particles when they become saturated under relatively low loads. Collapsible soils are susceptible to large volumetric changes when they become saturated. Collapsible soils are quite sensitive to either a rise in the groundwater table or increased surface water infiltration. The arid and semi-arid climate of the Proposed Project area and presence of alluvial deposits favors the formation of collapsible soils (NRCS, 2004). Soil collapse has not been identified as a significant issue within Inyo, Kern, or San Bernardino counties (Kern, 2020; ICCB, 2017; SBC, 2017). However, soils with low clay content formed on alluvial fans are mapped in multiple locations along the Proposed Project and may be susceptible to collapse.

Desert Pavement

Desert pavement is a desert surface that is covered with closely packed, interlocking angular or rounded rock fragments of pebble and cobble size that typically protects the finer grained underlying material from erosion (NRCS, 1986). Desert pavement forms where wind action and sheetwash over time have removed all smaller surface particles or where rock fragments have migrated upward through sediments to the

surface. The rocks that make up desert pavement commonly are coated by desert varnish on their exposed surfaces. Desert varnish is the thin red to black coating found on exposed rock surfaces in arid regions. Varnish is composed of clay minerals, oxides, and hydroxides of manganese and/or iron. Both desert pavement and desert varnish take thousands of years to form. Desert pavement is sparsely vegetated and can also include cryptogamic crusts (biologic soils crusts). Desert pavement is found on alluvial fans and piedmonts below mountains throughout the Mojave Desert.

3.9.1.4. Slope Stability

Important factors that affect the slope stability of an area include the steepness of the slope, the relative strength of the underlying rock material, and the thickness and cohesion of the overlying colluvium. The steeper the slope and/or the less strong the rock, the more likely the area is susceptible to landslides. The steeper the slope and the thicker the colluvium, the more likely the area is susceptible to debris flows. Another indication of unstable slopes is the presence of old or recent landslides or debris flows. The term landslide includes a wide range of ground movements, such as rock falls, deep failure of slopes, and shallow debris flows. Although gravity acting on an over-steepened slope is the primary reason for a landslide, other contributing factors include over-steepened slopes due to erosion or undercutting, increased saturation of weak rock and soil slopes may trigger movement, earthquake ground shaking may trigger landslides, or excess weight above or on the slope from accumulated rain, snow, rock or ore stockpiles, or construction of roads or man-made structures could cause slopes to fail.

Proposed Project components are generally located along and across alluvial valleys, alluvial fans, and gently sloping hills. Slope stability issues are not expected to occur in these flat to gently sloping areas. In Inyo County the conditions for landslides and mudflows are present near the hills and mountains of the county (ICCB, 2017). Locally the Project crosses or is adjacent to hillside and mountain areas where slope failures including rockfall and possibly deep-seated landslides could impact access roads or transmission structures, the El Paso Hills, the Rand Mountains, the Waterman Hills, and Daggett Ridge.

3.9.1.5. Subsidence

Most of the subsidence in California is due to excessive groundwater pumping (USGS, 2019). Land subsidence can occur in valleys containing aquifer systems that are, in part, made up of fine-grained sediments and that have undergone extensive ground-water development (USGS, 2003). As the groundwater is withdrawn, the pore-fluid pressure in the sediments decreases allowing the weight of the overlying sediment to permanently compact or compress the fine-grained units (USGS, 2019). This effect is most pronounced in younger, unconsolidated sediments. Land subsidence is generally characterized by a broad zone of deformation where differential settlements are small. The USGS has documented areas of land subsidence in the western and central Mojave Desert area due to groundwater extraction; land subsidence has not been mapped by the USGS in the Basin and Range area or the eastern Mojave Desert area (Solt and Sneed, 2014; USGS, 2019). Subsidence within the Mojave Desert area is found in the vicinity of dry lakebeds (playas) as a result of compaction of the fine-grained sediments of paleo-lakebed deposits. Land subsidence studies conducted by the USGS on the Mojave River and Morongo groundwater basins indicate that subsidence has occurred in the project area at Harper Lake, Coyote Lake, and Troy Lake/ Newberry Springs (USGS, 2019). When subsidence occurs at dry lakebeds it can either occur over the entire dry lakebed, as at Harper Lake (adjacent to Segment 3N), or subsidence can be primarily manifested near the edges (USGS, 2019).

Approximate depth to groundwater in the vicinity of the Proposed Project ranges from 10 feet to more than 300 feet below ground surface as each segment crosses ridges and valley areas associated with groundwater basins. Land subsidence associated with groundwater overdraft is a concern in several of the valley areas crossed by the Project segments. The Project alignment crosses parts of twelve groundwater basins recognized by California Department of Water Resources (DWR). The overall estimated potential for future subsidence in each of these basins, as rated by the DWR (2014), and generalized

measured vertical land surface displacement ranging in increments of 0.5 feet from 2015 through 2023 from satellite data from the Sustainable Groundwater Management Act (SGMA) interactive website in the vicinity of the Project alignment (DWR, 2023), are summarized in Appendix 6, Table Ap.6-2. Along the Project alignment vertical subsidence data is only available for the Owens Valley, Indian Wells Valley, and Lower Mojave River Valley basins (DWR, 2023). There was insufficient information available for the DWR to determine future subsidence potential due to groundwater extraction in the Rose Valley basin along Segment 1 (DWR, 2014). Estimated future subsidence due to groundwater extraction is high for Segments 2, 3N, and 3S (DWR, 2014).

3.9.1.6. Seismicity and Faulting

The Proposed Project area is located in a geologically complex and seismically active region. The seismicity of the Project area is dominated by the intersection of the east-west trending Garlock fault system and the northwest-southeast trending San Andreas fault system. Both systems are responding to strain produced by the relative motions of the Pacific and North American Tectonic Plates. This strain is relieved by right-lateral strike-slip faulting on the San Andreas and related faults, left-lateral strike-slip displacement on faults in the Garlock fault zone, predominantly right-lateral strike-slip displacement on the Eastern California Shear zone (ECSZ), and by vertical, normal-slip faults in the Owens Valley-Sierra Nevada boundary (Stevens et al, 2013). The effects of this strain and deformation includes mountain building, basin development, deformation of Quaternary alluvial fans and volcanic deposits, widespread regional uplift, and generation of earthquakes.

Both the Basin and Range and Mojave Desert provinces are characterized by numerous geologically young faults. These faults can be classified as historically active, active, potentially active, or inactive, based on the following criteria (CGS, 1999):

- Faults that have generated earthquakes accompanied by surface rupture during historic time (approximately the last 200 years) and faults that exhibit aseismic fault creep are defined as Historically Active.
- Faults that show geologic evidence of movement within Holocene time (approximately the last 11,000 years) are defined as Active.
- Faults that show geologic evidence of movement during the Quaternary time (approximately the last 1.6 million years) are defined as Potentially Active.
- Faults that show direct geologic evidence of inactivity during all of Quaternary time or longer are classified as Inactive.

Although it is difficult to quantify the probability that an earthquake will occur on a specific fault, this classification is based on the assumption that if a fault has moved during the Holocene epoch, it is likely to produce earthquakes in the future. Since periodic earthquakes accompanied by surface displacement can be expected to continue in the study area through the lifetime of the Proposed Project, the effects of strong ground shaking and fault rupture are of primary concern to safe operation of the Proposed Project components.

The Project area will be subject to ground shaking associated with earthquakes on faults of the Eastern California Shear zone (ECSZ) system, the San Andreas system, the Garlock system, and local faults in the Sierra Nevada. Since periodic earthquakes accompanied by surface displacement can be expected to continue in the study area through the lifetime of the Proposed Project, the effects of strong ground shaking and fault rupture are of primary concern to safe and reliable operation of the Proposed Project. Active and potentially active faults within 50 miles of the Proposed Project that represent a significant seismic threat, as identified on the USGS Quaternary Fault Map (USGS, 2020) and the USGS National Seismic Hazard Map (NSHM) (USGS, 2014), are presented in Appendix 6, Table Ap.6-3 and illustrated in Figure 3.9-1a through Figure 3.9-1d (Fault Maps, at the end of this section).

Historically, both the ECSZ and the San Andreas fault zone have produced significant earthquakes that have caused surface rupture and damage in the project region. The Eastern California Shear zone (ECSZ) is a region of active, predominantly strike-slip deformation east of the San Andreas fault that extends from the southern Mojave Desert and up along the east side of the Sierra Nevada. Faults of the Eastern California Shear zone accommodates approximately 20 to 25 percent of relative plate motion between the Pacific and North America plates and is bounded on the east by the diffuse extensional deformation of the Basin and Range region and in the Mojave area by the San Andreas fault zone on the west (Frankel et al., 2008).

The Garlock fault bisects the eastern California shear zone, but although it does not appear to offset, or be offset by the NW-trending ECSZ faults, strain from the Southern ECSZ in the Mojave Desert is transferred across it to ECSZ faults in the Basin and Range (Frankel et al., 2008). Local faults in the southern part (Mojave Desert) of the ECSZ include the Lenwood-Lockhart, the Helendale-South Lockhart, the Hector Mine (Lavic Lake), and the Camp Rock-Emerson-Copper Mountain fault zones. Faults in the northern (Basin and Range) part of the ECSZ near to the proposed project include the Owens Valley, Panamint Valley–Hunter Mountain–Saline Valley, and Death Valley–Fish Lake Valley fault zones.

The Garlock fault is predominantly left-lateral strike-slip, approximately 185 miles long, and is a major east-west fault zone stretching between the San Andreas fault and Death Valley. The Garlock fault has been relatively quiet for the past 500 years, but since the Ridgecrest Earthquake Sequence in July 2019 the Garlock fault has begun creeping as a result of strain placed on it from these earthquakes. The fault has exhibited approximately 0.8 inches (2 centimeters) of creep at the surface in the 3 months following the earthquakes (JPL, 2019).

Active faults of the San Andreas system are predominantly strike-slip faults accommodating translational movement. The San Andreas fault zone is a 680-mile active right-lateral strike-slip complex of faults that has been responsible for many of the damaging earthquakes in southern California in historical times. The San Andreas fault zone is the longest active fault in California and represents the boundary between the Pacific and North American plates.

Fault Rupture

Fault rupture is the surface displacement that occurs when movement on a fault deep within the earth breaks through to the surface. Fault rupture and displacement almost always follows preexisting faults, which are zones of weakness; however, not all earthquakes result in surface rupture (i.e., earthquakes that occur on blind thrusts do not result in surface fault rupture). Rupture may occur suddenly during an earthquake or slowly in the form of fault creep. In addition to damage caused by ground shaking from an earthquake, fault rupture is damaging to buildings and other structures due to the differential displacement and deformation of the ground surface that occurs from offset/ground displacement across the fault. In California, Alquist-Priolo Earthquake Fault (Alquist-Priolo) Zones have been defined by the California Geological Survey along active faults with the potential for surface rupture (CGS). However, not all active faults have been zoned, as the criteria specifies that a fault must be shown to be “sufficiently active” and “well defined” by detailed site-specific geologic explorations in order to determine whether an Alquist-Priolo Earthquake Hazard Zone can be established with associated building setbacks. Many known active faults are not sufficiently “well defined” at the surface to qualify to be Alquist-Priolo zoned but could still cause significant surface fault rupturing. Although the Project will not be subject to the Alquist-Priolo Fault Zoning Act because there will be no occupied structures constructed as part of this Project, the presence of these mapped zones indicates significant potential for fault rupture in the areas where the Project crosses the “zones.”

The Proposed Project crosses active and potentially active faults: the Owens Valley fault zone (Segment 1), the Southern Sierra Nevada fault zone (Segment 1), Little Lake fault zone (Segment 1), Garlock fault zone (Segment 2), the Lenwood-Lockhart-Old Woman Springs fault zone (Segments 2, 3N, and 3S), the Helendale-South Lockhart fault zone (Segments 2, 3N, and 3S), and the Gravel Hills-Harper Lake fault zone

(Segment 3N). Several of these faults have mapped Alquist-Priolo Earthquake Fault zones; locations of the Alquist-Priolo zones as related to each Project segment is discussed in Section 3.9.1.8. Figure 3.9-2a through Figure 3.9-2d (Alquist Priolo Fault Zone Maps) show these fault zones.

Ground Shaking

Since periodic earthquakes accompanied by surface displacement can be expected to continue in the study area through the lifetime of the Proposed Project, the effects of strong ground shaking and fault rupture are of primary concern to safe and reliable operation of the proposed subtransmission line components, telecommunications components, substation modifications.

The intensity of the seismic shaking, or strong ground motion, during an earthquake is dependent on the distance between the Project area and the epicenter of the earthquake, the magnitude of the earthquake, and the geologic conditions underlying and surrounding the Project area. Earthquakes occurring on faults closest to the Project area would most likely generate the largest ground motion. Earthquake shaking hazards are commonly calculated by projecting earthquake rates based on earthquake history and fault slip rates, the same data used for calculating earthquake probabilities. The Probabilistic Seismic Hazard Map (PSHM) for California was used to estimate ground shaking hazards along the Proposed Project (CGS, 2016). The PSHM for California shows the relative intensity of ground shaking from intermediate-period (1.0 second) earthquake shaking related to anticipated future earthquakes. Intermediate-period (1.0 second) shaking affects tall, relatively flexible buildings, but also correlates well with overall earthquake damage. The shaking potential is calculated as the level of ground motion that has a 2% chance of being exceeded in 50 years, which is the same as the level of ground-shaking with about a 2500-year average repeat time. Although the greatest ground shaking hazards are in areas of highest intensity, no region is immune from potential earthquake damage related to ground shaking. The estimated intermediate-period (1.0 second) ground accelerations for most of the Proposed Project range from 0.35 to 1.05 g, which represents a potential for ground shaking ranging from moderate to very strong along the Project route. The highest ground accelerations along the Project alignment are located along the northern half of Segment 1.

A review of historic earthquake activity from 1900 to 2023 indicates that more than 350 earthquakes of magnitude M4.5 or greater have occurred within 50 miles of the Proposed Project, with 15 of these earthquakes being greater than or equal to M6.0 (USGS, 2023). Many of the large earthquakes also had numerous aftershocks, some measuring greater than M 6.0, which caused further damage in the affected areas. A summary of the significant M 6.0 or greater earthquake events within 50 miles of the Proposed Project is presented in Appendix 6, Table Ap.6-4.

Three significant earthquakes of greater than M 7.0 have occurred in the region, listed in Appendix 6, Table Ap.6-4, and include the 1872 M 7.4 Owens Valley Earthquake, the 1952 M 7.5 Kern County Earthquake, the 1992 M 7.3 Landers Earthquake, and the July 2019 M 6.4 and M 7.1 Ridgecrest Earthquake Sequence.

A major historical earthquake, the 1872 Owens Valley earthquake (also known as the Lone Pine earthquake), was associated with the Owens Valley fault zone in the vicinity of Segment 1. Magnitude of this earthquake is estimated as ranging from M 7.4 to M 7.9 based on damage and felt effects. The Owens Valley earthquake caused widespread destruction in Lone Pine and other communities in the Owens Valley (ICCB, 2017) and it was felt over a very wide area and caused significant damage and many deaths. The 1952 M 7.5 Kern County earthquake caused immense and widespread damage and resulted in the loss of 12 lives and at least $50 million (1950's dollars) in damage.

The most recent significant earthquakes near the Proposed Project are the July 2019 M 6.4 and M 7.1 Ridgecrest Earthquake Sequence, which consisted of two large earthquakes which occurred on consecutive days and caused significant damage in Ridgecrest, Trona, and reportedly parts of the China Lake Naval Air Weapons Station. The two earthquakes occurred on July 4 and July 5, 2019, near Ridgecrest, on two

faults within the Airport Lake fault zone. These large earthquakes resulted in strong to severe ground shaking. Within a week, more than 8000 aftershocks (M 1.0 - M 4.5) had occurred, and approximately 27 aftershocks of larger than M4.5; aftershocks continued to affect the Ridgecrest area for several months. Surprisingly, there were no fatalities in California from this earthquake sequence. Ridgecrest and neighboring unincorporated town of Trona had moderate to very strong property damage. The earthquakes sparked a surge of seismic activity in and around the Coso Volcanic field north of Ridgecrest. Surface rupture was observed for both events, but are still being studied (Andrews, 2019). Highway 178, one of the two ways in or out of Trona, was blocked from rockslides and impassable shifted sections of asphalt.

Other smaller, but significant earthquake in the area include:

- The July 21, 1986, Chalfant Valley earthquake occurred along the White Mountains fault zone near Segment 1. This earthquake had an estimated moment magnitude of 6.5 and a maximum Mercalli intensity of VI. Ground surface ruptures associated with the event are located approximately 1 mile north of Segment 1 (SCE, 2020).
- The Coso earthquake occurred on November 27, 1996, on what is believed to be a northwest trending segment of the Airport Lake fault zone located northeast of Ridgecrest. This earthquake had an estimated magnitude of 5.3 and produced over 3,000 aftershocks in the six months following the main earthquake (SCEDC, 2019). Additionally, earthquake swarms are common in the Coso area, often producing hundreds of tremors over periods as short as a few days. This brisk and robust seismic activity is common in volcanic areas, such as Long Valley Caldera near Mammoth Lakes, and Yellowstone Caldera at Yellowstone. The Coso Volcanic Field shows examples of previous volcanic activity, probably last active 30,000 to 40,000 years ago, but ash emission and small cone building episodes may be as recent as Holocene in age (<10,000 years).

Liquefaction

Liquefaction is the phenomenon in which saturated granular sediments temporarily lose their shear strength during periods of earthquake-induced strong ground shaking. The susceptibility of a site to liquefaction is a function of the depth, density, and water content of the granular sediments and the magnitude and frequency of earthquakes in the surrounding region. Saturated, unconsolidated silts, sands, and silty sands within 50 feet of the ground surface are most susceptible to liquefaction. Liquefaction-related phenomena include lateral spreading, ground oscillation, flow failures, loss of bearing strength, subsidence, and buoyancy effects (Youd and Perkins, 1978). In addition, densification of the soil resulting in vertical settlement of the ground can also occur.

In order to determine liquefaction susceptibility of a region, three major factors must be analyzed. These include: (a) the density and textural characteristics of the alluvial sediments; (b) the intensity and duration of ground shaking; and (c) the depth to groundwater.

Most of the alluvial deposits underlying the new Proposed Project components are not generally expected to be liquefiable due to overall deep groundwater levels in the project area. However, there are locations within the Project area where shallow groundwater, less than 50 feet below ground surface (bgs), occurs. Limited historic groundwater data from the Department of Water Resources (DWR) online Water Data Library (DWR, 2019), indicates there are areas with groundwater levels of 5 to 50 feet below ground surface (bgs) along Segment 1 from Control Substation to the community of Dunmovin (Coso Substation). Elsewhere along the Proposed Project groundwater depths range from 140 to 400 feet bgs from Coso Substation to the Inyokern Substation along Segment 1, 130 to 350 feet bgs along Segment 2, 30 to 230 feet bgs along Segment 3N, 50 to greater than 400 feet bgs along Segment 3S.

The California Geological Survey's Seismic Hazard Zonation Program includes mapping of earthquake induced liquefaction zones. However, this program focuses on the major metropolitan areas of California; it has not addressed the area along the Proposed Project alignment.

Seismically Induced Landslides

Other forms of seismically induced ground failures which may affect the Project area include seismically induced landslides and other slope movements such as rockfalls. Slope failures triggered by earthquakes have been a significant cause of earthquake damage; in southern California, large earthquakes such as the 1971 San Fernando, 1994 Northridge, and the July 2019 Ridgecrest earthquakes triggered landslides that were responsible for destroying or damaging numerous structures, blocking major transportation corridors, and damaging life-line infrastructure. Areas that are most susceptible to earthquake-induced landslides are steep slopes in poorly cemented or highly fractured rocks, areas underlain by loose, weak soils, and areas on or adjacent to existing landslide deposits. Seismically-induced landslides are most commonly associated with earthquakes of magnitude 4.0 or more (SCE 2020).

The Proposed Project components are located within an area of gentle slopes and generally flat terrane, and no existing landslides are mapped in these areas; therefore, seismically induced landslides are not likely to impact the Proposed Project. Locally the Project crosses or is adjacent to hillside areas where rockfall and possibly deep-seated landslides could impact access roads or transmission structures. Segment 2 traverses the El Paso Hills and Rand Mountains near Randsburg. Segment 3N crosses and traverse the eastern flank of the Waterman Hills. Segment 3S traverses hills north of Daggett Ridge.

The California Geological Survey's Seismic Hazard Zonation Program includes mapping of earthquake induced landslide zones. However, this program focused on the major metropolitan areas of California and has not addressed the areas along the Proposed Project corridor.

3.9.1.7. Paleontological Resources

Paleontological resources are any fossilized remains, traces, or imprints of organisms that are preserved in the Earth's crust and are of paleontological interest because they provide information about the history of life on Earth. Fossil remains may include bones, teeth, shells, leaves, and wood. They are found in geological deposits within which they were originally buried. Paleontological resources include not only the actual fossils, but also the collecting localities and the geological deposits that contain the fossils. Paleontological resources are considered nonrenewable resources because the organisms and ecosystems they represent no longer exist. Thus, once destroyed, these resources can never be replaced. The information in this section is based on the Paleontological Evaluation and Inventory Report for the SCE Ivanpah Control Project prepared by Paleo Solutions, Inc. (2020; Confidential per BLM survey permit requirements). The paleontological report provides an analysis of existing data collected from a geologic map review, a literature search, and two museum record searches (Paleo Solutions, 2020). The analysis of existing data is supplemented with observations from a pedestrian field survey. The report identifies the paleontological potential of the Project area and makes recommendations for the mitigation of adverse effects on paleontological resources that may result from the proposed construction.

Paleontological Resource Classifications

BLM Guidelines. BLM Instruction Memorandum IM 2022-009 and Handbook H-8270-1 provides guidelines for assessment and mitigation of potential impacts on paleontological resources (BLM, 2022 and 1998). The BLM defines a significant paleontological resource as follows:

> Any paleontological resource that is considered to be of scientific interest, including most vertebrate fossil remains and traces, and certain rare or unusual invertebrate and plant fossils. A significant paleontological resource is considered to be scientifically important because it is a rare or previously unknown species, it is of high quality and well-preserved, it preserves a previously unknown anatomical or other characteristic, provides new information about the history of life on earth, or has identified educational or recreational value. Paleontological resources that may be considered to not have paleontological significance include those that lack provenience or context, lack physical integrity because

of decay or natural erosion, or that are overly redundant or are otherwise not useful for research. Vertebrate fossil remains and traces include bone, scales, scutes, skin impressions, burrows, tracks, tail drag marks, vertebrate coprolites (feces), gastroliths (stomach stones), or other physical evidence of past vertebrate life or activities (BLM, 2008).

Potential Fossil Yield Classification System. Due to the nature of the fossil record, paleontologists cannot know either the quality or the quantity of fossils present in a geologic unit prior to natural erosion or human-caused exposure. Therefore, in the absence of surface fossils, an assessment is necessary of the sensitivity of rock units based on their known potential to produce scientifically significant fossils elsewhere within the same geologic unit (both within and outside of the study area) or a unit representative of the same depositional environment. The proposed Project is on BLM-administered, other federal, tribal, state, county, city, and private land with the largest portion on BLM-administered land; therefore, this analysis follows the Potential Fossil Yield Classification (PFYC) system for assessing paleontological resources. The PFYC system provides baseline guidance for assessing paleontological resources on BLM-administered land (BLM, 2022) and is also used on non-BLM lands in this study.

The PFYC system is based on mapped geologic units which are assigned to a paleontological sensitivity class based on the relative abundance and significance of paleontological resources and their sensitivity to adverse impacts. Initial PFYC assignments based only on geologic mapping are considered solely a first approximation of the potential presence of paleontological resources and are subject to changes based on ground verification. The PFYC class rankings are summarized below (BLM, 2022):

- **PFYC 1: Class 1 – Very Low.** These geologic units are not likely to contain recognizable fossil remains. This class usually includes units that are igneous or metamorphic, excluding reworked volcanic ash units; or units that are Precambrian in age or older. Management concern for paleontological resources in Class 1 units is usually negligible or not applicable. Overall, the probability of affecting significant paleontological resources is very low, and further assessment of paleontological resources is usually unnecessary.
- **PFYC 2: Class 2 – Low.** These geologic units are not likely to contain paleontological resources. Class 2 geologic units have the following characteristics: field surveys have verified that paleontological resources are not present or are very rare; geologic units are generally younger than 10,000 years before present (bp); and sediments exhibit significant physical and chemical changes (i.e., diagenetic alteration) that make fossil preservation unlikely. Management concern for paleontological resources is generally low, and further assessment or mitigation is usually unnecessary except in rare or isolated circumstances where localities containing paleontological resources are found.
- **PFYC 3: Class 3 – Moderate.** These sedimentary geologic units have fossil content that varies in significance, abundance, and predictable occurrence. This class is often marine in origin with sporadic known occurrences of paleontological resources. Paleontological resources may occur intermittently, but abundance is known to be low. Significant paleontological resources may occur but would be widely scattered. The potential for authorized land use to affect significant paleontological resources is known to be low to moderate. Management concerns for paleontological resources are moderate. Management options could include record searches, pre-disturbance surveys, monitoring, mitigation, or avoidance. Surface-disturbing activities may require sufficient assessment to determine whether significant paleontological resources occur in the area of a proposed action and whether the action could affect the paleontological resources.
- **PFYC 4: Class 4 – High.** These geologic units are known to contain a high occurrence of paleontological resources. Significant paleontological resources have been documented but may vary in occurrence and predictability. Surface-disturbing activities may adversely affect paleontological resources. Rare or uncommon fossils, including nonvertebrate (such as soft body preservation) or unusual plant fossils, may be present. Illegal collecting activities may affect some areas. Management concern is moderate

to high depending on the proposed action. A field survey by a qualified paleontologist is often needed to assess local conditions. On-site monitoring or spot checking may be necessary during land-disturbing activities. Avoidance of known paleontological resources may be necessary.

- **PFYC 5: Class 5 – Very High.** These highly fossiliferous geologic units consistently and predictably produce significant paleontological resources. Significant paleontological resources have been documented and occur consistently. Paleontological resources are highly susceptible to adverse impacts from surface-disturbing activities. Unit is frequently the focus of illegal collecting activities. Management concern is high to very high. A field survey by a qualified paleontologist is almost always needed, and on-site monitoring may be necessary during land-use activities. Avoidance or resource preservation through controlled access, designation of areas of avoidance, or special management designations must be considered.
- **PFYC U: Class U – Unknown Potential.** These geologic units cannot receive an informed PFYC assignment. They may exhibit features or preservational conditions that suggest significant paleontological resources could be present, but little information about the actual paleontological resources of the unit or area is known. Geologic units represented on a map are based on lithologic character or basis of origin but have not been studied in detail. Scientific literature does not exist or does not reveal the nature of paleontological resources. Reports of paleontological resources are anecdotal or have not been verified. Area or geologic unit is poorly or understudied. BLM staff has not yet been able to assess the nature of the geologic unit. Until a provisional assignment is made, geologic units that have an unknown potential have medium to high management concerns, and lacking other information, field surveys are normally necessary, especially prior to authorizing a ground disturbing activity.

Society of Vertebrate Paleontology Criteria. The Society of Vertebrate Paleontology (SVP) has developed standard procedures for the assessment and mitigation of adverse impacts on paleontological resources which are intended to be applicable to both private and public lands under the jurisdiction of local, city, county, regional, state, and federal agencies (SVP, 2010). SVP also establishes professional guidelines for paleontologists and provides definitions of significant paleontological resources (SVP, 2010). The SVP defines significant paleontological resources 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).

Literature Review

Paleo Solutions reviewed geologic mapping of the Project area and a 0.5-mile buffer. The literature reviewed included published and unpublished scientific papers. Paleontological records searches were requested from the Natural History Museum of Los Angeles County (LACM), the University of California Museum of Paleontology in Berkeley, California (UCMP), and the San Bernardino County Museum (SBCM). Samuel McLeod, Ph.D. performed the LACM searches (dated August 18, 2017, and July 27, 2018) and Kenneth Finger, Ph.D., performed the UCMP search (dated March 7, 2017). The results of the records searches are attached to the Paleontology Report (Confidential per BLM survey permit requirements). As of the date of the Paleontology Report, no response had been received from the SBCM. Additional records searches of online databases were completed by Paleo Solutions staff (Paleo Solutions, 2020). The various record searches yielded no recorded fossil localities within the Project boundaries; however, nearby localities were reported for geologic units similar to or the same as those found within the Project boundaries (Paleo Solutions, 2020). Fossil localities were reported for the Owens Lake sediments, Coso Formation, Manix Lake Beds, older Quaternary lacustrine deposits near Owens Lake, and older alluvium in several locations.

The geologic maps for the Paleontology Report indicate that the Project is underlain by Precambrian igneous and metamorphic rocks, Precambrian (Neoproterozoic) Noonday Dolomite, Cambrian to Devonian Goodsprings Dolomite, Devonian Sultan Limestone, Carboniferous Monte Cristo Limestone, Permian marine sedimentary and metasedimentary rocks, Paleozoic and Mesozoic igneous and metamorphic rocks, Cenozoic (Quaternary and Tertiary) igneous rocks, Tertiary sedimentary rocks, Paleocene to Eocene Goler Formation, Miocene Ricardo Group, Miocene to Pliocene Tropico Group, Miocene to Pliocene Coso Formation, Pliocene Bedrock Spring Formation, Pliocene volcanic sediments, Pleistocene Manix Lake Beds, older Quaternary (Pleistocene) alluvial deposits, and younger Quaternary (Holocene) deposits (Paleo Solutions, 2020).

Paleontological Significance

Based on the literature review and field surveys, the potential for scientifically important paleontological resources, following the PFYC system, was assigned to the geologic units underlying the Proposed Project and associated 0.5-mile buffer zone. Below is a summary of the paleontological resources, significance, and paleontological potential of the geologic units and formations underlying the Proposed Project and buffer zone. The presence of each of the units along the specific Project segments is described in Section 3.9.1.8.

- The igneous and metamorphic rocks of varying ages (Precambrian to Quaternary) underlying the Proposed Project and buffer zone all have very low potential to produce scientifically important paleontological resources (**PFYC 1**).
- Although no body fossils have been recovered from the Precambrian (Neoproterozoic) Noonday Dolomite, occurrences of stromatolites recovered from this formation provide important information about the evolution of climate on earth and give insight into the vastly different climate on earth during the Precambrian. Due to the potential for stromatolites, the Noonday Dolomite is assigned to have low paleontological potential (**PFYC 2**).
- The Upper Cambrian to Devonian Goodsprings Dolomite has a scarce fossil record with only four documented fossil localities that occur at different levels within the unit, with most of these fossils poorly preserved, making identification to the species level difficult. Based on the poor preservation in combination with the scarcity, the Goodsprings Dolomite has been assigned low paleontological potential (**PFYC 2**) (Paleo Solutions, 2020).
- The Middle to Late Devonian Sultan Limestone formation is divided into three members, including the Ironside Dolomite, Valentine Limestone, and Crystal Pass Limestone members. The Sultan Limestone contains a diverse assemblage of fossils that are indicative of a Late Devonian shallow water environment. The Ironside Dolomite contains very few fossils (mostly stromatoporoids), the Valentine Limestone is fossiliferous, and the Crystal Pass Limestone contains no fossils. Fossil assemblages in the Sultan Limestone are sporadic but have a high diversity, and therefore, this unit has been assigned moderate paleontological potential (**PFYC 3**) (Paleo Solutions, 2020).
- The Lower Mississippian Monte Cristo Group, also called Monte Cristo Limestone, contains five members, which include from oldest to youngest, the Dawn Limestone, Anchor Limestone, Bullion Dolomite, Arrowhead Limestone, and the Yellowpine Limestone members; however, not all members are present throughout the distribution of the Monte Cristo Group. This unit was deposited in a warm, shallow-water marine environment. Fossil assemblages found in the Monte Cristo are not found uniformly throughout this unit but are found within "fossil horizons" that represent short periods of warm shallow water at the time of deposition. The Anchor Limestone Member has the most abundant and well-preserved invertebrate fossil assemblage, including genera of trilobites, ostracods, brachiopods, bryozoans, corals, bivalves, cephalopods, and crinoids. While not abundant, many of the fossils found in the Monte Cristo Limestone are considered to fill in gaps in the paleontological and biostratigraphic

record for the lower Mississippian, and thus the Monte Cristo Group has been assigned moderate paleontological potential (**PFYC 3**) (Paleo Solutions, 2020).

- Permian marine sedimentary and metasedimentary rocks in the Project area are primarily assigned to the Bird Spring Formation, which mostly consists of beds of limestone less than 20 feet thick alternating with thinner beds of shale, sandstone, and dolomite deposited in a shallow marine environment (Paleo Solutions, 2020). The Bird Spring Formation contains a vast multitude of marine invertebrate micro- and mega-fossils including many species of annelids, brachiopods, bryozoans, corals, crustaceans, echinoderms, gastropods, pelecypods, and protozoa. Due to the abundance, diversity, and excellent preservation of scientifically significant marine invertebrates recovered from the Bird Spring Formation, the marine sedimentary and metasedimentary rocks within the Project area are considered to have moderate paleontological potential (**PFYC 3**) (Paleo Solutions, 2020).
- Although intrusive igneous rocks have very low potential to produce scientifically important paleontological resources (**PFYC 1**), fossils are occasionally preserved in extrusive igneous rock units, such as tuff layers, and therefore, the Oligocene to Miocene tuff breccias mapped along the alignment are assigned either low or moderate paleontological potential (**PFYC 2 to 3**) depending on the lithology. Based on the field survey results, the tuff breccia within the Project area is assigned moderate paleontological potential (**PFYC 3**) (Paleo Solutions, 2020).
- Ten types of unnamed Tertiary sedimentary geologic units are mapped within the Project area, including limestone; shale; undifferentiated nonmarine sedimentary rocks; conglomerate; fanglomerates; sediments and flows; lacustrine limestone, shale, or tuff; sandstone; and volcanic fanglomerate. However, in the Barstow area, these unnamed sedimentary rocks may in part include portions of the Barstow Formation, and potentially lacustrine sediments of the Pickhandle Formation (Paleo Solutions, 2020). The Miocene Barstow Formation consists of alluvial fan, riverbed, lakebed, and volcanic ash beds and has produced a diverse and abundant fossil assemblage consisting of thousands of individual specimens including horses, rhinos, peccaries, camels, antelope, proboscideans, canids, felids, and a large variety of microvertebrate fossils. Additionally, although uncommon, fossils have been reported from sedimentary deposits of the early to middle Miocene Pickhandle Formation. The unnamed Tertiary sedimentary geologic units that were observed during the field survey also comprise, in part, alluvial fan, riverbed, lakebed, and volcanic ash beds similar to the Barstow and Pickhandle Formations, and due to the potential for some of the unnamed Tertiary sedimentary units within the Project area to be part of, or equivalent to, fossil-bearing formations, they are assigned either low or moderate paleontological potential (**PFYC 2 or 3**). Based on the field survey results and unit descriptions, sediments and flows, fanglomerate deposits, and volcanic fanglomerate deposits are assigned low paleontological potential (**PFYC 2**); shale, limestone, sandstone, tuff breccia, and nonmarine sedimentary rocks are assigned moderate paleontological potential (**PFYC 3**); and conglomerate is considered to have low to moderate paleontological potential (**PFYC 2-3**), depending on the lithology (Paleo Solutions, 2020).
- The Goler Formation is a Paleocene to early Eocene formation located in the El Paso Mountains in the northern Mojave Desert, composed mostly of conglomerate with cobble to boulder clasts, pebbly sandstone, siltstone, and mudstone, predominately deposited in a fluvial depositional environment with alluvial fans and braided streams. The formation has yielded 70 specimens and 18 species of documented and identified mammals, mostly marsupials and primates. These mammals are part of the Goler Assemblage, which also includes turtles, rays, lizards, crocodilians, and sharks, as well as a significant amount of fossil wood. Due to the abundance and diversity of vertebrate and invertebrate fossils and plants that provide insights into the paleoecology during this time, the Goler Formation is considered to have very high paleontological potential (**PFYC 5**) (Paleo Solutions, 2020).
- The Miocene Ricardo Group is a sequence of volcanic rocks and continental sedimentary deposits in the El Paso Basin, near the junction of the Garlock fault and the Sierra Nevada frontal fault in southern California. This unit consists of two formations: overlying Dove Springs Formation (fluviolacustrine

sediments, volcaniclastic and volcanic rocks) and the underlying Cudahy Camp Formation (predominantly sequences of volcanic rocks). The Dove Springs Formation has a very diverse assemblage of fossils, which includes plants, bony fish, amphibians (e.g., salamanders), reptiles (e.g., turtles), birds, carnivorans (e.g., the "bone-crushing" canid *Borophagus*, and the "bear-dog" amphicyonids), many species of rodents, lagomorphs (e.g., rabbits, hares, and pikas), proboscideans, and ungulates (e.g., rhinoceroses, horses, and oreodonts). Fossil occurrences are broadly distributed throughout the Dove Springs Formation but are most commonly found in the finer grained sediments such as floodplain or overbank deposits. Therefore, the Ricardo Group is considered to have high paleontological potential (**PFYC 4**) (Paleo Solutions, 2020).

- The Miocene and Pliocene Tropico Group includes the Gem Hill Formation, Fiss Fanglomerate, Bissel Formation, Saddleback Basalt, and Red Buttes Quartz Basalt. The Tropico Group is divided into several lithologic units. In Boron, the Tropico Group includes the Kramer Beds, which have exposures of granitic conglomerate, arkosic sandstone, and clay shale. An assemblage of fossil vertebrates has been obtained from the Arkose member of the Kramer Beds in this upper part of the Tropico Group known as the Boron Local Fauna. The Boron Local Fauna in the upper Tropico Group has produced 15 well-preserved vertebrate taxa, including two newly described species of mammals; the scientific value of recovered fossils from the Boron Local Fauna of the Tropico Group is extremely important and has been the subject of research for many scientists (Paleo Solutions, 2020). Paleo Solutions (2020) assigned the Tropico Group a high to very high paleontological potential (**PFYC 4-5**).
- The Miocene and Pliocene Coso Formation consists primarily of rhyolite tuff, buff-colored arkose, and clay associated with the nearby Coso Volcanic Field. Locally, this unit contains fanglomerate, rhyolitic pyroclastic rocks (rhyolite vitric tuff, pumice lapilli tuff, and tuff breccia), and lacustrine deposits with thin-bedded limestone lenses. Several units of the Coso Formation are mapped within the Project area and vicinity, including lacustrine deposits, ferruginous sandstone, pyroclastic rocks, and silicified tuff and breccia. Vertebrate fossils have been identified within the sedimentary rocks of this formation, including a mastodon, a hyena-like canid, an extinct species of peccary, an extinct species of camel, an extinct species of bear, and several species of the extinct hare-like *Hypolagus*. Although no fossils have been recorded in the associated pyroclastic units, the geology does not preclude the preservation of paleontological resources similar to those found in the sedimentary units. Therefore, the sedimentary units mapped within the Project area have high paleontological potential (**PFYC 4**), and the pyroclastic members have low paleontological potential (**PFYC 2**) (Paleo Solutions, 2020).
- A Pliocene unnamed volcanic sediment unit in the Project area mapped within the Waucoba Mountain Quadrangle is described as sedimentary units interbedded with volcanic rocks, with sediments composed of diatomite interbedded with lacustrine silt and sand and pebble conglomerate. The general geology and paleontological content of these units is unknown, though sedimentary deposits, especially siltstone and sandstone, have the potential to contain scientifically significant fossils. Due to the potential to find fossils in sedimentary rocks of this nature, these units are considered to have low to moderate paleontological potential (**PFYC 2-3**) (Paleo Solutions, 2020).
- One unit of the Pliocene Bedrock Spring Formation is mapped within the Project area consisting of tan to red arkosic sandstone, siltstone, and conglomerate. The Bedrock Spring Formation has produced mammalian fossil remains including ungulates (hoofed mammals such as species of camel, horse, and pronghorn) proboscideans, and saber-toothed cat. The Bedrock Spring Formation sandstone, siltstone, and conglomerate unit has been assigned moderate paleontological potential (**PFYC 3**) (Paleo Solutions, 2020).
- There is one unnamed early Pleistocene- to Pliocene-age sedimentary unit (very old sedimentary deposits) mapped within the Project area consisting of fanglomerate and gravel and including coarse breccia. These deposits commonly occur at and near fault zones, and sediments include coarse breccia with angular blocks up to 10 feet in diameter and consisting of pre-Tertiary mafic igneous and meta-

morphic rocks. Based on lithologic descriptions of the unit and the descriptions of similar sedimentary units that were observed during the field survey (e.g., fanglomerate deposits), the anticipated lithologies and fossilization potentials can be inferred for this unit. Therefore, based on anticipated lithological similarities with the sedimentary units that were observed during the field survey, the Early Pleistocene to Pliocene very old sedimentary deposits (coarse breccia) are considered to have low paleontological potential (**PFYC 2**) (Paleo Solutions, 2020).

- Pleistocene Manix Lake Beds are deposits of extinct Lake Manix, and in the Project area, four units have been mapped including gravel bar, sand and silt, lakebed clay, and clay and silt. The lakebed clay is the most fossiliferous member of these deposits, with many Pleistocene mammalian fossils ranging from rodents to mammoths, including dire wolves, pronghorn, sheep, scimitar cat, sloths, and several species of camels. Other known fossils include numerous invertebrate and vertebrate aquatic fauna, such as chub fish and stickleback (Paleo Solutions, 2020). Due to the high abundance of vertebrate and invertebrate fauna, this formation has very high paleontological potential (**PFYC 5**) (Paleo Solutions, 2020).
- Several unnamed older Quaternary (Pleistocene) deposits are exposed throughout the Project area and consist of fanglomerate made up of igneous and metamorphic clasts, clay and marl, older alluvium, older debris flow gravels, younger debris flow gravels, nonmarine sediments, alluvial gravel, lacustrine sediments, and older alluvial fan and lakebed deposits. Ice Age taxa have been recovered from similar Pleistocene deposits throughout Kern, Inyo, and San Bernardino counties, including specimens of birds, horses, dogs, camels, llamas, bighorn sheep, mastodons, foxes, ringtail cats, bobcats, cougars, rodents, skunks, pikas, hares, lizards, snakes, turtles and tortoises, fish, frogs, and plants, among many other taxa. Several of these localities have been recovered from the vicinity of the Project from China Lake, Ridgecrest; Cool Water Coal Gasification Site in Daggett; Kramer; and Harvard Hill. Lacustrine deposits, older lakebed, and older alluvial fan and lakebed deposits are of a similar depositional environment to the other known fossil bearing formations, and therefore, have the potential to preserve similar taxa. Pleistocene alluvial deposits composed of coarse-grained material are not typically conducive to the preservation of fossils, i.e., coarse-grained surficial Quaternary deposits derived from the local plutonic igneous rocks have a low probability to contain fossils. However, older, finer-grained alluvial sediments may contain significant paleontological resources. Therefore, based on the field survey results and lithologic descriptions, alluvial gravel, older debris flow gravels, younger debris flow gravels, and older fanglomerate deposits are assigned low paleontological potential (**PFYC 2**); and lacustrine deposits, older alluvium, nonmarine sediments, older clay and marl, and older alluvial fan and lakebed deposits are assigned moderate paleontological potential (**PFYC 3**) (Paleo Solutions, 2020).
- Younger Quaternary (Holocene) deposits within the Project area typically consist of variable compositions of unconsolidated clay, silt, sand, gravel, and larger clasts that have variable sorting and angularity of clasts. Holocene sediments within the Project area consist of alluvium, alluvial fan, inactive alluvium, colluvium, clay, gravel, talus, valley fill, beds of Waucobi Lake, lake, younger lake/Owens Lake, Mojave River channel sand, and dune/eolian sand deposits (Paleo Solutions, 2020). Holocene (less than 11,000 years old) sediments are typically too young to contain fossilized material (SVP, 2010), but they may overlie sensitive older (e.g., Pliocene and Pleistocene) deposits at variable depths. In addition, unmapped paleosols have been identified within and around the Project area where Holocene sediments have been mapped. Fossils have been recovered from paleosols near the Project, including two vertebrate fossils in Ridgecrest that were found along West Ridgecrest Boulevard near the Downs Substation and from North Downs Street. A portion of the Project alignment crosses sediments of ancient Harper Lake, which have been dated to extend into the very late Pleistocene. A fossil fish was recovered from either the Harper Lake beds or Mojave River sediments. The surficial and near surface Younger Quaternary (Holocene) deposits have low paleontological potential at the surface; however, they have an unknown paleontological potential in the subsurface, since these deposits have potential to shallowly overlie older, paleontologically sensitive geologic units. Therefore, all younger Quaternary (Holocene) sedimen-

tary units are assigned low paleontological potential (**PFYC 2**); and low to moderate paleontological potential with increasing depth (**PFYC 2 to 3**) or low to high paleontological potential with increasing depth (**PFYC 2 to 4**), depending on the location. Paleosols, if present within areas mapped as Quaternary (Holocene) deposits, have moderate paleontological potential (**PFYC 3**) (Paleo Solutions, 2020).

Paleontology Field Survey

Paleo Solutions conducted a paleontological survey of the Project area on July 15-19, 2019, and December 16-20, 2019. The field survey was conducted because aerial photographs indicated that portions of the Project area included undisturbed native sediment. A combination of pedestrian and windshield survey methods were used. For the pedestrian survey, a 150-foot survey corridor (75 feet on either side of the centerline) was used for the Project alignment, a 50-foot survey corridor (25-feet on either side of the centerline) was used for the access roads, and a 50-foot survey buffer was used around staging areas and pull sites (Paleo Solutions, 2020).

Based on observations during the field survey, the Project area is characterized by diverse terrain consisting of low relief flood plains and valleys with fluvial drainages and moderate relief hills with high relief ridge lines and slopes. Vegetation was minor to dense and consisted mostly of desert sage brush and Joshua trees. Some floodplain areas were marshy at the time of the survey. Access roads were intermittently paved and often contained deep sand, large rocks, and dense vegetation. Existing disturbances consisted of graded, gravel, and paved roads, graded pads, mining activity, berms, railroad tracks, pipelines, transmission lines and associated infrastructures, substations, buildings, fences, a dump station, a solar farm, and miscellaneous trash and debris (Paleo Solutions, 2020).

Numerous geologic units were observed during the field survey. The pedestrian survey included an inspection of the Project area, with a focus on areas with native rock and sediment exposures, including the desert floor, which were mapped as having unknown, moderate, high, and very high paleontological potential (**PFYC U, 3, 4, 5**), totaling approximately 16 percent of the total survey area. The windshield survey was conducted in areas mapped as having very low and low paleontological potential (**PFYC 1 and 2**), totaling approximately 81 percent of the total survey area.

The windshield survey for very low potential (**PFYC 1**) areas consisted of confirming the extent of the geologic units as mapped and stopping periodically to take reference point, lithologic descriptions, and photographs of the very low potential geologic units. The windshield survey for the low potential (**PFYC 2**) areas consisted of driving the access roads for the alignment and stopping at sediment exposures, with a particular focus on areas with exposed stratigraphic sections, such as drainages, to take reference points, lithologic descriptions, and photographs, and to evaluate the paleontological potential of the sediments, look for indicators that the sediments were incorrectly mapped, and to see if the thickness of the low potential (**PFYC 2**) sediments could be determined. Small portions of the Project alignment (approximately 3 percent of the total survey area) crossing DOD lands managed by the Edwards Airforce Base and Marine Corps Logistics Base Barstow were not able to be accessed for the field survey; the inaccessible areas had been mapped as low (**PFYC 2**) to moderate (**PFYC 3**) units, with the geology confirmed as mapped on either end of the DOD parcels. Rock and sediment exposures as well as the surrounding areas were photographed and documented. Reference points were acquired using a Global Positioning System (GPS) unit. Sediment and bedrock lithologies were recorded and analyzed and used to better interpret the Project's paleontological potential, and thus better understand the Project's potential impact (Paleo Solutions, 2020).

No significant paleontological resources were discovered during the field survey conducted by Paleo Solutions, although several invertebrate fossils were discovered from Devonian and Pleistocene sediments. Highly weathered and fragmented iridescent white bivalve shells were discovered at a locality in Late Pleistocene-age Manix Lake Beds (sand). One (1) fragmented gastropod cast, one (1) fragmented

brachiopod cast, and numerous fragmented clasts containing stromatoporoids[1] were discovered at a locality in Devonian Sultan Limestone. Although these fossils demonstrate the potential for paleontological resources to be preserved within the Proposed Project surface and subsurface sediments, the fossils are poorly preserved and lack identifiable features and thus are not considered scientifically significant fossils (Paleo Solutions, 2020).

3.9.1.8. Environmental Setting by Segment

Segment 1: Bishop to Inyokern

Geology. This segment of the Project begins at the Control Substation southwest of Bishop and traverses the length of the Owens Valley, Rose Valley, and the northwestern section of the Indian Wells Valley, ending just before the Inyokern Substation. Segment 1 and associated staging yards are underlain by several geologic units including Quaternary alluvium (Qal), Quaternary lake deposits (Ql), nonmarine Pleistocene deposits of older alluvium, lake and stream deposits (Qc), basalt and andesite flows (Qpv^b), and undifferentiated Mesozoic granitic rock (gr). Descriptions of these units are listed in Appendix 6, Table Ap.6-1.

Soils. Numerous soil units, associations, and complexes are mapped as underlying Segment 1 which are comprised primarily of soils that are part of the Arizo series, Cajon series, Tewell series, Arrastre series, Manzanar series, Cartago series, Winnedumah series, the Gullied Land-Haploxeralfs association, and the Cushenbury-Crafton-rock outcrop complex; and the following five soil associations Rosamond variant-Rosamond-Playas-Gila-Cajon Variant-Cajon, Wasco-Rosamond-Cajon, Rock outcrop-Mexispring, Yermo-Ulymeyer-Tinemana-Goodale-Cartago, and Upspring-Sparkhule-Rock outcrop (SCE, 2020). A full list of the soils underlying Segment 1, a summary of select characteristics are presented in Appendix 6, Table Ap.6-5. Segment 1 is also underlain by two miscellaneous areas, riverwash and playas, and several of the soil associations/complexes contain the miscellaneous areas badlands and rock outcrop. Riverwash consists of unstabilized sandy, silty, clayey, or gravelly sediment that is flooded, washed, and reworked frequently by rivers. Playas consist of barren flats in closed basins in arid regions; many are commonly subject to wind erosion; many are saline, sodic, or both; and the water table may be near the surface at times. Miscellaneous areas have been identified by the NRCS as having little or no natural soil or soil development and are not discussed further.

Slope Stability. Segment 1 and its associated staging yards are located within flat to gently sloping terrain with a low landslide hazard.

Subsidence. Subsidence potential along Segment 1 was identified as Low-Medium in the Owens Valley basin and Low within the Indian Wells Valley area by the DWR (2014), and insufficient data was available for the DWR to estimate subsidence potential in the Rose Valley basin. Land subsidence of a maximum of -0.5 feet vertical displacement for the period of 2015 -2023 has been reported by DWR in the vicinity of Segment 1in both the Owens Valley and Indian Wells Valley.

Fault Rupture. Segment 1 traverses across and near multiple active and potentially active faults. Segment 1 crosses and is in close proximity to multiple strands of the active Alquist-Priolo zoned Owens Valley fault zone the runs subparallel to Segment 1, and a segment of the Alquist-Priolo zoned Little Lake fault zone, and their respective Alquist-Priolo zones. Fault strands of the potentially active Southern Sierra Nevada fault zone are located in very close proximity to Segment 1 and trend towards the alignment. Appendix 6, Table Ap.6-3 presents the general characteristics for these faults, and they are shown in Figure 3.9-1a (Fault Map, Segment 1 North), Figure 3.9-1b (Fault Map, Segment 1 South) and Figure 3.9-2a (Alquist Priolo Fault Zone Map, Segment 1 North) and Figure 3.9-2b (Alquist Priolo Fault Zone Map, Segment 1 South) at the end of this section.

[1] Stromatoporoids are fossil layered calcified 'sponges' that were reef-building organisms.

Ground Shaking. Segment 1 is located near to, adjacent to, and crossing several known active faults and will be subject to strong to very strong ground shaking in the event of a local earthquake. Estimated shaking potential values reflecting expected intermediate period (1.0 second) ground motions with 2% exceedance probability in 50 years range from 0.45 to 0.95 g (CGS, 2016). Most of Segment 1 north of Haiwee Substation has estimated shaking in the range of 0.85 to 0.95 g (CGS, 2016).

Liquefaction. Liquefaction is possible in the Owens Valley area along Segment 1 due to the relatively highwater table and the occurrence of granular, unconsolidated materials in the subsurface comprised of Quaternary alluvium deposits (SCE, 2020). Historical records indicate that liquefaction occurred around the edges of Owens Lake in association with the 1876 Lone Pine earthquake and liquefaction was observed in the Owens Lake area following the 2009 Olancha earthquake, which had a magnitude of 5.2 (SCE 2019).

Landslides. No large historical landslides were identified along the Segment 1 alignment. Most of Segment 1 is in valley areas where the hazards of landslides, rockfalls, slope creep, or other slope-related concerns are low to absent due to the gently sloping to relatively flat topography. However, areas of relatively steep slopes that have increased landslide hazards may be possible where Segment 1 traverses the Coso Range.

Paleontological Resources. The mapped geologic units and associated BLM paleontological potential located along Segment 1 as determined by the Paleontology Report are summarized below (Paleo Solutions, 2020).

- Igneous and Metamorphic Rocks – Paleozoic to Cenozoic (Quaternary). The igneous and metamorphic rock units along Segment 1 all have very low potential to produce scientifically important paleontological resources (**PFYC 1**).
- Coso Formation – Miocene and Pliocene. Segment 1 is underlain by Coso Formation rhyolitic pyroclastic rocks and sedimentary rocks. The sedimentary unit mapped within the Project area has high paleontological potential (**PFYC 4**), and the pyroclastic unit has low paleontological potential (**PFYC 2**).
- Older Quaternary Deposits – Pleistocene. Segment 1 is underlain by older debris-flow gravels with low paleontological potential (**PFYC 2**), and older alluvium, older lake deposits, and older alluvial fan & lakebed deposits assigned moderate paleontological potential (**PFYC 3**).
- Younger Quaternary Deposits – Holocene. Segment 1 is underlain by 10 types of younger quaternary deposits, which have low to moderate potential to produce scientifically important paleontological resources (**PYFC 2 to 3**). The following younger quaternary deposits are present within the Project area along Segment 1: active alluvium, alluvial fan deposits, inactive alluvium, alluvium, fan deposits, Owens Lake, eolian sand, valley fill, younger alluvial fan deposits, and lacustrine deposits. Paleosols, if present within areas mapped as Quaternary (Holocene) deposits, have moderate paleontological potential (**PFYC 3**) (Paleo Solutions, 2020).

Segment 2: Inyokern to Kramer Junction

Geology. Segment 2 begins at the Inyokern Substation slightly west of the US 395 and S.R. 178 intersection and traverses the northern section of the Indian Wells Valley, passing through the Randsburg substation in the community of Randsburg, traversing through the Mojave Desert, ending in the Kramer substation at the community of Kramer Junction. Segment 2 and associated staging yards cross several geologic units including Quaternary alluvium and alluvial fan deposits (Qal), older alluvium terraces (Qc), undifferentiated Mesozoic granitic rock (gr), Paleozoic marine sedimentary and metasedimentary rocks (Pz), and Precambrian schist. Descriptions of these units are in Appendix 6, Table Ap.6-1.

Soils. Numerous soil units, associations, and complexes are mapped as underlying Segment 2 which are comprised primarily of soils that are part of the Arizo series, Cajon series, Tewell series, Arrastre series, the Gullied Land-Haploxeralfs association, and the Cushenbury-Crafton-rock outcrop complex (SCE, 2020). Segment 2 is also underlain by four miscellaneous areas, pits, riverwash, rock outcrop, and urban land. Riverwash consists of unstabilized sandy, silty, clayey, or gravelly sediment that is flooded, washed, and

reworked frequently by rivers, and rock outcrops consist of exposures of bare bedrock other than lava flows. Pits consist of areas quarried or excavated for rock used in road building or construction, and urban land is land that is mostly covered by streets, parking lots, buildings, and other impervious structures.

Slope Stability. Segment 2 and the associated staging yards are generally located within flat to moderately flat terrain with a low landslide hazard. No landslides are mapped on the moderately inclined slopes in the El Paso Mountains and near Randsburg.

Subsidence. Land subsidence caused by groundwater overdraft could be a concern for valleys area crossed by Segment 2. Segment 2 crosses four groundwater basins. These basins are the Indian Wells Valley (low subsidence potential), Fremont Valley (medium to high subsidence potential), Cuddeback Valley (insufficient data), and Harper Valley (high subsidence potential). Segment 2 crosses a portion of the Fremont Valley where earth fissures attributed to land subsidence caused by groundwater pumping have been documented with projections of continued small (less than 0.1 feet) subsidence (DWR, 2014).

Fault Rupture. Segment 2 crosses several active and potentially active faults and is located near historic and potentially active faults. Segment 2 crosses the historically active Garlock fault zone and the potentially active Lenwood-Lockhart fault zone and Helendale-South Lockhart fault zone, and their respective Alquist-Priolo zones. Segment 2 and the Inyokern substation is located about one mile west of the Little Lake fault zone although none of these fault segments are included in the Alquist-Priolo zones. Appendix 6, Table Ap.6-3 provides information for the faults located near Segment 2.

The 2019 Ridgecrest Earthquakes and their aftershocks occurred on faults generally considered to be part of the Little Lake fault zone caused ground surface rupture and building damage in Ridgecrest and Trona east of Segment 2. Impacts of these earthquakes, including surface rupture and structure damage within Naval Air Weapons Station China Lake continue to be studied (Andrews, 2019).

Ground Shaking. Segment 2 crosses the historically active Garlock fault zone and is near the Helendale-South Lockhart and Little Lake fault zones. Segment 2 estimated long-period (1.0 second) potential ground shaking values range from 0.35 to 0.95 g along the alignment (CGS, 2016). The highest estimated shaking values on Segment 2, of up to 0.95 g, are located north of the Randsburg Substation along and near the Garlock Fault.

Liquefaction. Liquefaction potential of the sedimentary deposits along Segment 2 and the staging yards is considered low due to identified depths of groundwater of 130 to 230 feet bgs.

Landslides. No records of major historical landslides were found along the Proposed Project Alignment. Much of the project alignment, including Segment 2, is in valley areas. The hazards of landslides, rockfalls, slope creep, or other slope-related concerns are low to absent in the valley areas that are characterized by relatively flat topography. However, areas of relatively steep slopes may have increased seismically induced landslide hazards where Segment 2 traverses the steeper slopes of the El Paso Mountains and the Rand Mountains.

Segment 2: Inyokern to Kramer Junction

Paleontological Resources. The geologic mapped units and associated BLM paleontological potential located along Segment 2 are listed below (Paleo Solutions, 2020).

- Igneous and Metamorphic Rocks – Precambrian to Mesozoic. The igneous and metamorphic rock units along Segment 2 all have very low potential to produce scientifically important paleontological resources (**PFYC 1**).
- Goler Formation – Paleocene to Early Eocene. Segment 2 is mapped as underlain by the undivided Goler Formation and the Goler Formation lower member. Due to the abundance and diversity of fossil mammals, as well as invertebrates and plants that provide insights into the paleoecology during this time, the Goler Formation is considered to have very high paleontological potential (**PFYC 5**).

- Older Quaternary Deposits – Pleistocene. Segment 2 is underlain by older alluvium with moderate paleontological potential (**PFYC 3**), and fanglomerate of metasediment and basalt detritus and fanglomerate of andesitic detritus, which are assigned low paleontological potential (**PFYC 2**).
- Younger Quaternary Deposits – Holocene. Segment 2 is underlain by alluvium, which has low potential (**PFYC 2**) and low to moderate potential with increasing depth (**PFYC 2 to 3**), to produce scientifically important paleontological resources. Paleosols, if present within areas mapped as Quaternary (Holocene) deposits, have moderate paleontological potential (**PFYC 3**) (Paleo Solutions, 2020).

Segment 3N: Kramer Junction to Daggett

Geology. Segment 3N begins at the Kramer Substation and traverses north a short distance, crosses Highway 58, and then traverses east across Harper Valley, passing south of the community of Lockhart and Harper Dry Lake. Segment 3N and associated staging yards cross several geologic units including Quaternary wash deposits (Qw), alluvium (Q), older alluvium (Qo), lake deposits (Ql), Plio-Pleistocene non marine sedimentary deposits (QT), shallow intrusive rocks (Mia/Mid), Cretaceous-Jurassic granodiorite (JKgd), and Waterman Gneiss (wg). Descriptions of these units are presented in Appendix 6, Table Ap.6-1.

Soils. Numerous soil units, associations, and complexes are mapped as underlying Segment 3N which are comprised primarily of soils that are part of the Cajon series, Helendale series, Kimberina series, Nebona series Norob-Halloran Complex, Rosamond series, Victorville series, and the following soil associations - Wasco-Rosamond-Cajon, Norob-Halloran-Cajon-Bryman, and Neuralia-Garlock-Cajon-Alko (SCE, 2020). Segment 3N is also underlain by three miscellaneous areas, playas, riverwash, and rock outcrop-lithic torriorthents complex. Riverwash consists of barren active river gravel and alluvial areas, and rock outcrops-lithic torriorthents consist of exposures of bare bedrock (other than lava flows) with very thin soil formation (10 cm or less). Playas consist of barren flats in closed basins in arid regions; many are commonly subject to wind erosion; many are saline, sodic, or both; and the water table may be near the surface at times. Miscellaneous areas have been identified by the NRCS as having little or no natural soil or soil development and are not discussed further.

Slope Stability. Areas along Segment 3N and the associated staging yards are generally located within flat to gently sloping terrain with a low landslide hazard. A small portion of Segment 3N, from approximately structure 1558037E_1558036E to structure 1558015E_1558014E, crosses gentle to moderate slopes of the Waterman Hills that are mapped as having moderate landslide susceptibility in small areas on the slopes (SCE, 2020). Segment 3N traverses gentle slopes east of and below the Mitchel Range from about structure 1547529E_1547528E to structure 4408676E_4408677E. No landslides are mapped on the gentle to moderately inclined slopes in the Waterman Hills or the Mitchel Range.

Subsidence. Land subsidence caused by groundwater overdraft could be a concern for valleys area crossed by Segment 3N. Segment 3N crosses two groundwater basins. These basins are the Harper Valley (high subsidence potential) and the Lower Mojave River Valley (high subsidence potential). The Lower Mojave River Valley basin has document subsidence of up to -0.5 feet along Segment 3N between 2015 to 2023 (DWR, 2023). Segment 3N runs directly south of the lakebed of Harper Dry Lake; between 1992 and 2009, more than 6 inches of subsidence was documented at the Harper Dry Lake, at a steady rate of about 0.4 inches per year. This subsidence was associated with a decline in groundwater elevations (Brandt and Sneed, 2017).

Fault Rupture. Segment 3N crosses several active and potentially active faults and is located near historic and potentially active faults. Segment 3N crosses the Alquist-Priolo zoned Helendale-South Lockhart fault zone and one of its associated (AP) Special Studies Zones. Segment 3N also crosses the Alquist-Priolo zoned Lenwood-Lockhart fault zone and the Gravel Hills-Harper Lake fault zone, although it does not cross an associated Alquist-Priolo Zone for either of these faults. Segment 3N is located approximately 0.3 miles north of the closest mapped trace of the AP zoned Mt General fault, which is trending towards the

segment. Appendix 6, Table Ap.6-3 provides information for the significant active and potentially active faults located near Segment 3N.

Ground Shaking. Segment 3N crosses several Alquist-Priolo zoned faults, including the Lenwood-Lockhart fault zone, the Helendale-South Lockhart fault zone, and the Gravel Hills- Harper Lake fault, and is in close proximity to numerous other active faults. Segment 3N estimated shaking potential values reflect expected intermediate-period (1.0 second) ground motions with 2% exceedance probability in 50 years and range from approximately 0.45 to 0.85 g, with lower shaking potential generally located on the western half of the segment (CGS, 2016).

Liquefaction. Liquefaction potential along Segment 3N and the nearby staging yards is considered low along most of the route due to the depth of groundwater generally ranging from approximately 75 to 230 feet bgs. Groundwater is shallower near Harpers Dry Lake, approximately 30 feet bgs, and sediments in this area with groundwater depths of less than 50 feet bgs could be susceptible to liquefaction.

Landslides. No records of major historical landslides were found along the Proposed Project Alignment. Most of Segment 3N is in valley areas, with a small portion of the segment traversing gentle of moderate slopes of the Waterman Hills. The hazards of landslides, rockfalls, slope creep, or other slope-related concerns are low to absent in the valley areas that are characterized by relatively flat topography. However, areas of moderately steep slopes crossed by Segment 3N may have increased seismically induced landslide hazards.

Paleontological Resources. The geologic mapped units and associated BLM paleontological potential located along Segment 3N are listed below (Paleo Solutions, 2020).

- Igneous and Metamorphic Rocks – Precambrian to Cenozoic. The igneous and metamorphic rock units along Segment 3N all have very low potential to produce scientifically important paleontological resources (**PFYC 1**).
- Unnamed Tertiary Sedimentary Deposits – Pliocene to Oligocene or Older. Two unnamed Tertiary sedimentary units are located along Segment 3N and consist of a unit of lacustrine limestone, shale, or tuff and mapped outcrops of shale. Both of these geologic units are assigned moderate paleontological potential (**PFYC 3**).
- Older Quaternary Deposits – Pleistocene. Segment 3N is underlain by two older Quaternary deposits, older alluvium, and older fanglomerate and gravel. The older alluvium has moderate paleontological potential to produce scientifically important paleontological resources (**PYFC 3**), and the older fanglomerate and gravel has low paleontological potential (**PFYC 2**).
- Younger Quaternary Deposits – Holocene. Segment 3N is underlain by alluvium, dune sand, wind-blown sand, clay, and Mojave River Channel Sand. These deposits have low to moderate paleontological potential with increasing depth (**PFYC 2 to 3**). Paleosols, if present within areas mapped as Quaternary (Holocene) deposits, have moderate paleontological potential (**PFYC 3**) (Paleo Solutions, 2020).

Segment 3S: Kramer Junction to Barstow to Daggett

Geology. Segment 3S begins at the Kramer Substation and traverses southeast across Harper Valley int the Mojave Valley where it continues east past the northern edge of Iron Mountain. The route continues past Barstow and along the alluvial fans descending from Dagger Ridge and the Newberry Mountains to the south and ending at the Coolwater Substation south of the Mojave River. Segment 3N and associated staging yards cross several geologic units including Quaternary wash deposits (Qw), dune sand (Qs), alluvium (Q), older alluvium (Qo), and well dissected alluvial fans (Qod); Miocene nonmarine sedimentary rocks and volcanic rocks of the Tropico Group (Mt); Jurassic quartz diorite (Jqd); Mesozoic metavolcanic rocks (Mzv); and Mesozoic to Precambrian metasedimentary rocks of uncertain age (ms). Descriptions of these units are presented in Appendix 6, Table Ap.6-1.

Soils. Numerous soil units, associations, and complexes are mapped as underlying Segment 3S which are comprised primarily of soils that are part of the Arizo series, Bryman series, Cajon series, Cave series, Lavic-Norob Complex, Joshua series, Norob series, Lavic series, Lovelace series, Nebona-Cuddeback Complex, Norob-Halloran Complex, Rosamond series, Typic Haplargids-Yermo Complex, Victorville series, and Villa series, and the following soil associations Wasco-Rosamond-Cajon and Norob-Halloran-Cajon-Bryman (SCE, 2020). Segment 3S is also underlain by three miscellaneous areas, dune land, riverwash, and rock outcrop-lithic torriorthents complex. Dune land consists of loose, shifting sand. Riverwash consists of barren active river gravel and alluvial areas, and rock outcrops-lithic torriorthents consist of exposures of bare bedrock (other than lava flows) with very thin soil formation (10 cm or less). Miscellaneous areas have been identified by the NRCS as having little or no natural soil or soil development and are not discussed further.

Slope Stability. Areas along Segment 3S and the associated staging yards are generally located within flat to gently sloping terrain with a low landslide hazard, however a small portion of the segment crosses moderate slopes descending from Daggett Ridge from approximately between existing structures 4304775E_4304776E and 4304787E_4304788E. No landslides are mapped on the gentle to moderately inclined slopes along Segment 3S.

Subsidence. Land subsidence caused by groundwater overdraft could be a concern for valleys area crossed by Segment 3S. Segment 3S crosses two groundwater basins, which have both been identified with high subsidence potential: the Harper Valley and the Lower Mojave River Valley basins. The Lower Mojave River Valley has documented subsidence of up to -0.5 feet along Segment 3S between 2015 to 2023 (DWR, 2023).

Fault Rupture. Segment 3S crosses and is located near to several active and potentially active faults. Segment 3N crosses the Alquist-Priolo zoned Lenwood-Lockhart fault zone and one of its associated Alquist-Priolo Zones. Segment 3S also crosses the Alquist-Priolo zoned Helendale-South Lockhart fault zone, although it does not cross an associated AP zone for this fault. Segment 3S is in close proximity to two Alquist-Priolo zoned faults that are trending towards the segment, approximately 0.3 miles south of the Mt General fault, about 1 mile south of the Gravel Hills-Harper Lake fault zone. EIR Appendix 6 (Geology, Soils, and Paleontology Data), Table Ap.6-3 provides information for the significant active and potentially active faults located near Segment 3S.

Ground Shaking. Segment 3S crosses two Alquist-Priolo zoned faults, including the Lenwood-Lockhart fault zone and the Helendale-South Lockhart fault zone, and is in close proximity to numerous other active faults. Segment 3S estimated shaking potential values reflect expected intermediate-period (1.0 second) ground motions with 2% exceedance probability in 50 years and range from approximately 0.35 to 0.85 g, with lower shaking potential generally located on the western half of the segment (CGS, 2016).

Liquefaction. Liquefaction potential along Segment 3S and the staging yards is considered low due to the depth of groundwater is greater than generally ranging from 50 to greater than 400 feet bgs. If areas of seasonal or perched groundwater occur at levels of less than 50 feet bgs, sediments in areas with shallower groundwater could be susceptible to liquefaction.

Landslides. No records of major historical landslides were found along the Proposed Project Alignment. Most of Segment 3S is in valley areas and along gently sloping alluvial fans. The hazards of landslides, rockfalls, slope creep, or other slope-related concerns are low to absent in the valley and alluvial fan areas that are characterized by gently sloping to relatively flat topography.

Paleontological Resources. The geologic mapped units and associated BLM paleontological potential located along Segment 3S are listed below (Paleo Solutions, 2020).

- Igneous and Metamorphic Rocks – Precambrian to Cenozoic. The igneous and metamorphic rock units along Segment 3S all have very low potential to produce scientifically important paleontological resources (**PFYC 1**).

- Unnamed Tertiary Sedimentary Deposits – Pliocene to Miocene. Two unnamed Tertiary sedimentary units are located along Segment 3S consisting of limestone and interbedded shale and sandstone. Both of these geologic units are assigned moderate paleontological potential (**PFYC 3**).
- Tropico Group – Miocene and Pliocene. Segment 3S is underlain by Tropico Group sandstone, limestone and dolomite, and clay shale. The Tropico Group is known to contain numerous diverse and important fossils and has been assigned high to very high paleontological potential (**PFYC 4-5**).
- Older Quaternary Deposits – Pleistocene. Segment 3S is underlain by three older Quaternary deposits, older alluvium and older fanglomerate and gravel, and older clay and marl. The older alluvium and older clay and marl have moderate paleontological potential to produce scientifically important paleontological resources (**PYFC 3**) and the older fanglomerate and gravel has low paleontological potential (**PFYC 2**).
- Younger Quaternary Deposits – Holocene. Segment 3S is underlain by alluvium, dune sand, clay, and Mojave River Channel Sand. These deposits have low to moderate paleontological potential increasing with depth (**PFYC 2 to 3**). Paleosols, if present within areas mapped as Quaternary (Holocene) deposits, have moderate paleontological potential (**PFYC 3**) (Paleo Solutions, 2020).

3.9.2. Applicable Regulations, Policies, and Standards

3.9.2.1. Federal Regulations, Policies and Standards

In addition to the federal regulations described in the following subsections, federal authorizations are also required because approximately half of the land within the Proposed Project area is under the jurisdiction of the Bureau of Land Management (BLM). The BLM is preparing a separate Environmental Impact Statement for the Proposed Project.

Federal Earthquake Hazards Reduction Act

In 1977, the U.S. Congress passed the Earthquake Hazards Reduction Act to reduce the risks to life and property from future earthquakes through the establishment and maintenance of an effective earthquake hazards and reduction program. To accomplish this, the act established the National Earthquake Hazards Reduction Program (NEHRP). The agencies responsible for coordinating NEHRP are the Federal Emergency Management Agency (FEMA), the National Institute of Standards and Technology (NIST), the National Science Foundation (NSF), and the United States Geological Survey (USGS). In 1990, NEHRP was amended by the National Earthquake Hazards Reduction Program Act (NEHRPA), which refined the description of the agency's responsibilities, program goals, and objectives. The four goals of the NEHRP are: 1) develop effective practices and policies for earthquake loss-reduction and accelerate their implementation; 2) improve techniques to reduce seismic vulnerability of facilities and systems; 3) improve seismic hazards identification and risk-assessment methods and their use; and 4) improve the understanding of earthquakes and their effects.

International Building Code

Published by the International Code Council (ICC), the purpose of the International Building Code (IBC) is to establish minimum structural requirements to provide a reasonable level of safety, public health and general welfare through structural strength, and safety to life and property from fire and other hazards attributed to the built environment. The provisions of the IBC apply to the construction, alteration, relocation, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of buildings or structures, as well as any appurtenances connected to applicable buildings or structures. The IBC also incorporates the requirements and regulations set forth in several other ICC codes including the International Energy Conservation Code, the International Existing Building Code, the International Fire Code, and the International Fuel Gas Code. The IBC is in use or adopted in all 50 states of the U.S. and is updated every three years to ensure that new construction methods and technologies

are incorporated into existing codes. The IBC has replaced the Uniform Building Code (UBC) as the basis for the California Building Code (CBC).

Clean Water Act

The Clean Water Act (CWA) (33 U.S. Code § 1251 et seq.), formerly the Federal Water Pollution Control Act of 1972, was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of waters of the U.S. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point-source and certain non-point-source discharges to surface water. Section 402 of the CWA establishes the National Pollutant Discharge Elimination System (NPDES) permit program to regulate point-source discharges of pollutants into waters of the U.S. Discharges or construction activities that disturb 1 or more acres are regulated under the NPDES stormwater program and are required to obtain coverage under a NPDES Construction General Permit. The Construction General Permit establishes limits and other requirements, such as the implementation of a Storm Water Pollution Prevention Plan (SWPPP), which would further specify best management practices (BMPs) and other measures designed to avoid or eliminate pollution discharges in waters of the U.S. The NPDES Program is a federal program which has been delegated to the State of California for implementation through the State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards.

Paleontological Resources Preservation Act of 2009

The Paleontological Resources Preservation Act (PRPA) was part of the Omnibus Public Lands Management Act (OPLMA) of 2009. The PRPA requires the Secretary of the Interior to manage and protect paleontological resources on federal land using scientific principles and expertise and requires federal agencies to develop appropriate plans for inventorying, monitoring, and the scientific and educational use of paleontological resources, in accordance with applicable laws, regulations, and policies. Where possible, these plans should emphasize interagency coordination and collaborative efforts with non-federal partners, the scientific community, and the general public. The PRPA is the authority for federal land managing agencies for permits to collect paleontological resources, as well as curation of these resources in an approved repository. It provides authority for the protection of significant paleontological resources on federal lands including criminal and civil penalties for fossil theft and vandalism.

The PRPA defines a paleontological resource as any fossilized remains, traces, or imprints of organisms preserved in or on the earth's crust, which are of paleontological interest and that provide information about the history of life on earth.

The National Historic Preservation Act of 1966

This law provides leadership and financial and technical assistance to foster prehistoric and historic preservation of the resources of the United States and of the international community in partnership with States, Indian tribes, Native Hawaiians, and local governments. Specifically, the Section 106 of the NHPA is relevant because it provides for the survey, recovery, and preservation of paleontological resources when they are found in culturally related contexts and when they may be destroyed or lost due to a federal, federally licensed, or federally funded project (Public Law 89 665; 80 Stat. 915; 16 United States Code 470 et seq. [Caltrans, 2012; National Park Service, 2013]).

Antiquities Act of 1906

The Antiquities Act was the first law enacted to specifically establish that archaeological sites on public lands are important public resources. It obligated federal agencies that manage public lands to preserve the scientific, commemorative, and cultural values of such sites. This Act does not refer to paleontological resources specifically; however, the Act does provide for the protection of "objects of antiquity" (understood to include paleontological resources) by various federal agencies not covered by the PRPA.

The Federal Land Policy and Management Act of 1976

The Federal Land Policy and Management Act (FLPMA) (43 USC 1701 1782) authorizes inventories and monitoring surveys of paleontological resources on federal land managed by the BLM, which issues a permit for collecting paleontological resources. It also directs the BLM to develop management plans that include public education about paleontological resources and procedures for collection and minimization of impacts to resources.

The BLM defines a significant paleontological resource as any paleontological resource considered to be of scientific interest, including most vertebrate fossil remains and traces, and certain rare or unusual invertebrate and plant fossils. A significant paleontological resource is considered to be scientifically important because it is a rare or previously unknown species, it is of high quality and well preserved, it preserves a previously unknown anatomical or other characteristic, provides new information about the history of life on earth, or has identified educational or recreational value (BLM, 2008).

Code of Federal Regulations, Title 43

Under Title 43, Code of Federal Regulations, Section 8365.1 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 non-commercial purposes is permissible (43 CFR 8365.1 5 [United States Government Printing Office, 2014]).

3.9.2.2. State Regulations, Policies and Standards

California Public Utilities Commission (CPUC) General Orders

General Order 95 (GO 95, *Rules for Overhead Electric Line Construction*) and **General Order 128** (GO 128, *Construction of Underground Electric Supply and Communication Systems*) contain State of California rules formulated to provide uniform requirements for overhead electrical line construction and underground electrical supply and communication systems, respectively, to ensure adequate service and secure safety to persons engaged in the construction, maintenance, operation or use of overhead electrical lines and underground electrical supply and communication systems and to the public. GO 95 and GO 128 are not intended as complete construction specifications, but to embody requirements which are most important from the standpoint of safety and service. Construction shall be according to accepted good practice for the given local conditions in all particulars not specified in the rules.

GO 95 applies to all overhead electrical supply and communication facilities which come within the jurisdiction of the California Public Utilities Commission, located outside of buildings, including facilities that belong to non-electric utilities, as follows: Construction and Reconstruction of Lines, Maintenance of Lines, Lines Constructed Prior to This Order, Reconstruction or Alteration, Emergency Installation, and Third-Party Nonconformance.

GO 128 applies to (a) all underground electrical supply systems used in connection with public utility service; when located in buildings, the vaults, conduit, pull boxes or other enclosures for such systems shall also meet the requirements of any statutes, regulations or local ordinances applicable to such enclosures in buildings; and (b) all underground communication systems used in connection with public utility service located outside of buildings. **GO 128** applies to the following activities related to underground electrical supply and communication systems: Construction and Reconstruction of Lines, Maintenance, Systems Constructed Prior to These Rules, Reconstruction or Alteration, and Third Party Nonconformance.

GO 131-E, *Rules Relating to the Planning and Construction of Electric Generation, Transmission/ Power/ Distribution Line Facilities, and Substations Located in California* (adopted on January 30, 2025), defines the CPUC's jurisdiction over the siting and design of electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities in the State of California. Although such projects are exempt from local land use and zoning regulations and permitting, GO 131-E, Section XI.B requires

that "… the public utilities shall consult with local agencies regarding land use matters." GO 131-E also defines that the CPUC is the Lead Agency under CEQA with respect to such Proposed Project elements within the State of California. Southern California Edison Company (SCE) is required to comply with GO 131-E and is seeking a Permit to Construct from the CPUC for the Proposed Project.

California Building Code

The Proposed Project is subject to the applicable sections of Title 24, Part 2 of the CBC, 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 (ASCE/SEI) Standard. The ASCE/SEI Standard provides requirements for general structural design and includes means for determining earthquake loads, as well as other loads for inclusion into building codes. 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. Chapter 16 of the CBC contains specific requirements for seismic safety. Chapter 18 of the CBC regulates excavation, foundations, and retaining walls. Chapter 33 of the CBC contains specific requirements pertaining to site demolition, excavation, and construction to protect people and property from hazards associated with excavation cave-ins and falling debris or construction materials. Chapter 70 of the CBC regulates grading activities, including drainage and erosion. Construction activities are subject to occupational safety standards for excavation, shoring, and trenching, as specified in the State of California Division of Occupational Safety and Health (commonly called Cal/OSHA) regulations (Title 8 of the CCR) and in Section A33 of the CBC.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act of 1972, Public Resources Code (PRC) Sections 2621–2630 (formerly the Special Studies Zoning Act) regulates development and construction of buildings intended for human occupancy to avoid the hazard of surface fault rupture. While this Act does not specifically regulate oil field components not intended for human occupancy, it does help define areas where fault rupture, and thus related damage, is most likely to occur. This Act groups faults into categories of active, potentially active, and inactive. Historic and Holocene age faults are considered active, Late Quaternary and Quaternary age faults are considered potentially active, and pre-Quaternary age faults are considered inactive. These classifications are qualified by the conditions that a fault must be shown to be "sufficiently active" and "well defined" by detailed site-specific geologic explorations in order to determine whether building setbacks should be established. Cities and counties affected by the zones must regulate certain development 'projects' within the zones. They must withhold development permits for sites within the zones until geologic investigations demonstrate that the sites are not threatened by surface displacement from future faulting.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act (the Act) of 1990 (PRC, Chapter7.8, Division 2, Sections 2690–2699) aims to reduce the threat to public health and safety and to minimize the loss of life and property by identifying and mitigating seismic hazards. The Act directs the California Department of Conservation, Division of Mines and Geology [now called California Geological Survey (CGS)] to delineate Seismic Hazard Zones or Zones of Required Investigation. Zones of Required Investigation referred to as "Seismic Hazard Zones" in CCR Section 3722, are areas shown on Seismic Hazard Zone Maps where site investigations are required to determine the need for mitigation of potential liquefaction and/or earthquake-induced landslide ground displacements. A geotechnical investigation of the site must be conducted, and appropriate mitigation measures incorporated into the project design before development permits may be granted. Cities, counties, and State agencies are directed to use seismic hazard zone maps developed by CGS in their land-use planning and permitting processes. The Act requires that site-specific geotechnical investigations be

performed prior to permitting most urban development projects within seismic hazard zones. However, to date, seismic hazard mapping has not been completed by the State Geologist for the project area. Therefore, this act does not apply to the Proposed Project.

California Environmental Quality Act (CEQA) (Public Resources Code Division 13 - Environmental Quality) and CEQA Guidelines (California Code of Regulations Title 14, Division 6, Chapter 3)

CEQA declares that it is state policy to: "take all action necessary to provide the people of this state with...historic environmental qualities." It further states that public or private projects financed or approved by the state are subject to environmental review by the state. All such projects, unless entitled to an exemption, may proceed only after this requirement has been satisfied. CEQA requires detailed studies that analyze the environmental effects of a proposed project. In the event that a project is determined to have a potentially significant environmental effect, CEQA requires that alternative plans and mitigation measures be considered. The State CEQA Guidelines reflect the requirements set forth in the Public Resources Code, as well as court decisions interpreting the statute and practical planning considerations and define procedures, types of activities, persons, and public agencies that are required to comply with CEQA.

If paleontological resources are identified as being within a project study area, the sponsoring agency must take those resources into consideration when evaluating project effects. The level of consideration may vary with the importance of the resource.

California Public Resources Code - PRC § 5097.5 and § 30244

A person shall not 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, rock art, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over the lands. The code includes rules for legal punishment and restitution. Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.

3.9.2.3. Local Regulations, Policies and Standards

Pursuant to GO 131-E, the Project is not subject to local land use authority because the CPUC has exclusive jurisdiction over the siting, design and construction of electric power line projects, distribution lines, substations, and electric facilities constructed by public utilities subject to CPUC jurisdiction. Local ordinance policies and requirements are presented here only where these requirements are used as the basis for impact analysis.

Inyo County

The Conservation/Open Space Element (Chapter 8) and the Public Safety Element (Chapter 9) of the Inyo County General Plan (Inyo County, 2001) provides policies and measures to minimize injuries and loss of life and reduce property damage from seismic and geologic hazards. The main policy relevant to the Proposed Project is "The County shall encourage extra precautions be taken for the design of significant lifeline installations, such as highways, utilities, and petrochemical pipelines." Proper design of the Project facilities, including any and all mitigation measures outlined in this document, would comply with this policy and would be consistent with the Safety Element. The General Plan (2001) has no mention of paleontological resources.

The Safety Element of the Inyo County 2001 General Plan contain the following policies to address geologic and seismic hazards:

- Policy S-1.1: Encourage the conservation of agricultural soils to provide a base for agricultural productivity and the County's economy.
- Policy S-1.2: Promote sound agricultural practices to help eliminate excessive erosion and buildup of salts.
- Policy S-2.1: Minimize soil erosion from wind and water related to new development.
- Policy S-2.2: Require low-density development in areas where soils have moderate or very strong limitations for sewage disposal, unless infrastructure exists for a public sewer system.
- Policy S-2.3: In areas of unstable soils and/or steep terrain, the County shall limit the intensity of development in order to minimize the potential for erosion and landform instability.
- Policy GEO-1.1: Restrict development of inhabitable structures in areas that are subject to very strong geologic hazards, such as Alquist-Priolo Special Studies Zone, liquefaction zones, landslide areas, and seismically induced unstable soils.
- Policy GEO-1.2: Support and encourage seismic upgrades to older buildings that may be structurally deficient.
- Policy GEO-1.3: Promote and provide education to prepare inhabitants of the County for disaster events.
- Policy GEO-1.4: Require that new development of habitable structures that are located within potential seismic hazard zones provide appropriate engineering design strategies to comply with appropriate building standards.
- Policy GEO-1.5: Restrict development on steep slopes (defined as slopes greater than 30%).

Kern County

The Safety Element (Chapter 4) of the Kern County General Plan (Kern County, 2009) provides policies and measures to minimize injuries and loss of life and reduce property damage from seismic and geologic hazards. The main policy relevant to the Proposed Project is "The County shall encourage extra precautions be taken for the design of significant lifeline installations, such as highways, utilities, and petrochemical pipelines." Proper design of the Project facilities, including any and all mitigation measures outlined in this document, would comply with this policy and would be consistent with the Safety Element. Paleontological resources are briefly mentioned in the Land Use, Open Space and Conservation element of the Kern County General Plan (Kern County, 2009) in Section 1.10.3, "Archaeological, Paleontological, Cultural, and Historical Preservation".

The Safety Element of the County of Kern 2009 General Plan contains the following policies to address geologic and seismic hazards:

- That the County's program of identification, mapping, and evaluating the geologic, fire, flood safety hazard areas, and significant concentrations of hydrogen sulfide in oilfield areas, presently under way by various County departments, be continued.
- Those hazardous areas, identified as unsuitable for human occupancy, are guided toward open space uses, such as agriculture, wildlife habitat, and limited recreation.
- That the County government encourage public support of local, State, and federal research programs on geologic, fire, flood hazards, valley fever, plague, and other studies so that acceptable risk may be continually reevaluated and kept current with contemporary values.
- The County shall encourage extra precautions be taken for the design of significant lifeline installations, such as highways, utilities, and petrochemical pipelines.

- 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.
- 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.
- Route major lifeline installations around potential areas of liquefaction or otherwise protect them against significant damage from liquefaction in an earthquake.
- Reduce potential for exposure of residential, commercial, and industrial development to hazards of landslide, land subsidence, liquefaction, and erosion.

The Land Use, Open Space and Conservation element contains the following policy and implementation measures relevant to paleontological resources:

- 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.
- In areas of known paleontological resources, the County should address the preservation of these resources where feasible.

San Bernardino County

The Hazards Element section (San Bernardino County, 2022) of the County of San Bernardino's 2023 Online Policy Plan provides for mitigation of geologic hazards through a combination of engineering, construction, land use and development standards. The Plan addresses the geologic hazards present within the county, including fault rupture, liquefaction, seismically-generated, landslides/mudslides, and wind erosion. The county has prepared Hazard Policy Maps to address fault rupture, liquefaction hazards and landslide hazards, and wind erosion hazards. Special consideration, including possible engineering/ geologic evaluation, is required for development of sites within designated hazard areas on the maps. Additionally, the County Building and Safety Department enforces Building Standards adopted by the State of California and the County of San Bernardino including the CBC contained in Title 24 of the California Code of Regulations.

Paleontological resources are addressed under the Cultural Resources Element (San Bernardino County, 2020) of the online County of San Bernardino Policy Plan.

The 2022 Hazards Element of the County of San Bernardino Online Policy Plan contains the following goal and associated policies to address geologic and seismic hazards:

- Goal HZ-1 Natural Environmental Hazards: Minimized risk of injury, loss of life, property damage, and economic and social disruption caused by natural environmental hazards and adaptation to potential changes in climate.
- 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-1.5: Existing properties in environmental hazard areas. We encourage owners of existing properties in hazard areas to add design features that allow occupants to shelter in place and to have sufficient time to evacuate during times of extreme weather and natural disasters.
- 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-1.7: Underground utilities. We require that underground utilities be designed to withstand seismic forces, accommodate ground settlement, and hardened to fire risk.
- Policy S 4.3: Tailor grading, land clearance, and grazing to prevent unnatural erosion in erosion susceptible areas.
- 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.
- Policy HZ-1.12: Local hazard mitigation plan implementation. We require adherence to the goals, objectives and actions in the Multi-jurisdictional Hazard Mitigation Plan and subsequent amendments to reduce and mitigate damages from hazards in the county.

The Cultural Resources Element (2020) of the online County of San Bernardino Policy Plan includes the following goals and policies related to paleontological resources:

- Goal CR-2: Historic and Paleontological Resources. Historic resources (buildings, structures, or archaeological resources) and paleontological resources that are protected and preserved for their cultural importance to local communities as well as their research and educational potential.
- 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 Bishop

The Inyo County and City of Bishop Multi-Jurisdictional Hazard Mitigation Plan (ICCB, 2017) establishes a strategy for Inyo County and the City of Bishop, California, to reduce hazard impacts. The Plan focuses on hazard mitigation in reducing the impacts of disasters by identifying effective and feasible actions to reduce the risks posed by potential hazards. The Plan develops mitigation actions to strengthen community resilience, which helps ensure coordinated and consistent hazard mitigation activities across Inyo County and Bishop. The County and the City have developed this Plan to be consistent with current standards and regulations, ensuring that the understanding of hazards facing the communities reflects best available science and current conditions. The Plan is also consistent with Federal Emergency Management Agency (FEMA) requirements. The City of Bishop does not have any plans relevant to paleontological resources.

City of Barstow

The Safety Element of the City of Barstow General Plan (City of Barstow, 2015) sets forth goals, policies, and strategies geared toward ensuring the safety of City residents and visitors to the community. The Resource Conservation and Open Space Element the General Plan (City of Barstow, 2015) sets forth goals and policies to preserve and protect paleontological resources.

The City of Barstow General Plan's Safety Element contains the following Emergency Preparation Goals, Policies, and Strategies:

- Goal 1: Maintain a comprehensive Emergency Operations Plan for the City, ensuring a high level of responsiveness to natural and human-caused disasters and other emergency situations.
- Goal 3: Ensure that all development occurring under the General Plan is designed and built in accordance with current standards for seismic safety, fire protection and defensible space.
- Policy 3.1: Consider and assess vulnerability to natural and manmade disasters or emergencies when reviewing proposals for the siting and development of public/quasi-public facilities such as schools, water towers and power and communication transmitters.
- Strategy 3.1.A: Incorporate hazards assessment into the project review process for all proposed new development.
- Strategy 3.1.B: Conduct follow-up inspections to ensure that structures are built as designed and that all safety-related conditions of approval continue to be met.

The Resource Conservation and Open Space Element contains the following goals, policies, and strategies related to paleontological resources:

- Goal 4: Strive to preserve and protect important features and sites (historic, archaeological and paleontological), as defined under this Element's Cultural Resources Management Plan, from degradation or destruction.
- Policy 4.A: The City shall encourage efforts to collect and preserve available local historical resources.
- Strategy 4.A.3: The City shall preserve and protect, to the greatest extent possible, archaeological, and paleontological sites and features.

3.9.3. Environmental Impacts of the Proposed Project

3.9.3.1. Impact Analysis Approach

A wide range of potential impacts, including rock fall, debris flows, and seismic hazards including surface fault rupture, strong ground shaking, liquefaction, and seismically induced landslides, were considered in this analysis. Geologic conditions were evaluated with respect to the impacts SCE Ivanpah-Control Project may have on local geology, soils, and paleontology as well as the impact that specific geologic hazards and soils may have upon the proposed transmission line and its related facilities.

Geologic formations, slope conditions, and soil types have been characterized by their potential to contribute to hazardous conditions. Areas prone to risk for potential adverse impacts due to existing geologic, topographic, or soils conditions were identified and their relationship to Proposed Project components analyzed. The geologic and paleontological setting identifies geologic units along the Proposed Project with paleontological sensitivity and that may contain fossils of significance where Project-related ground disturbance could result in adverse impacts and damage to fossils. Where existing conditions combined with Project activities suggest a potential risk or impact, mitigation measures were identified to reduce the risk or impact.

No applicant proposed measures have been proposed by SCE specifically for Geology and Soils; however, several APMs for biological resources address that vehicle travel shall remain on maintained roads and designated routes, at speeds that would not exceed 15 miles per hour and thereby reduce erosion potential. These include APM BIO-HERP-2 and APM BIO-MAM-1; presented in Section 2.8. In addition, APM BIO-RES-1 (also set forth in Section 2.8) includes revegetation as part of the Habitat and Restoration Management Plan that would reduce soil erosion potential following construction. SCE proposed 4 applicant proposed measures to reduce potential impacts on paleontological resources (SCE, 2020); these

measures are presented in Table 3.9-1. Implementation of these APMs is considered part of the Proposed Project for purposes of the evaluation of environmental impacts.

Table 3.9-1. Applicant Proposed Measures – Geology, Soils, and Paleontology

APM	Description
Geology, Soils, and Paleontology	
APM PAL-1	**Develop Paleontological Resource Mitigation and Monitoring Plan.** SCE shall prepare a Paleontological Resources Mitigation and Monitoring Plan (PRMMP), utilizing findings of the paleontological resource survey and technical report, to guide all paleontological management activities during project construction. The PRMMP shall be submitted to the BLM and CPUC for review and approval at least 60 days prior to the start of construction. The PRMMP shall be prepared by a qualified paleontologist, based on Society of Vertebrate Paleontology (SVP) 2010 guidelines, and meet all regulatory requirements. The qualified paleontologist shall have a Master's Degree or Ph.D. in paleontology or geology, 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 moderate (PFYC 3a) to very high (PFYC 5) sensitivity. Sediments of undetermined sensitivity shall be monitored on a part-time basis as outlined in the PRMMP. Sediments with very low or low sensitivity will not require monitoring. Paleontological monitors shall meet standard qualifications per the SVP (2010). ■ **Unanticipated Discovery Protocol:** Detail procedures for 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 BLM and CPUC, and dissemination of reports to appropriate repositories.
APM PAL-2	**Monitor Construction for Paleontological Resources.** Based upon the paleontological sensitivity assessment and Paleontological Resource Mitigation and Monitoring Plan consistent with Mitigation Measure PAL-1 (Develop Paleontological Resource Mitigation and Monitoring Plan), SCE will conduct full-time construction monitoring through its qualified paleontological monitor(s) in areas determined to have moderate (PFYC 3a) to very high (PFYC 5) sensitivity. Quaternary paleosols will be included in the PFYC 3a designation. Sediments of very low (PFYC 1), low (PFYC 2), or unknown (PFYC 3b) sensitivity shall not be monitored, unless geologic mapping is found to be in error. Paleontological resource monitors per SVP (2010) shall have the equivalent of the following qualifications: ■ BS or BA degree in geology or paleontology and one-year experience monitoring in the state or geologic province of the specific project. An associate degree and/or demonstrated experience showing ability to recognize fossils in a biostratigraphic context and recover vertebrate fossils in the field may be substituted for a degree. An undergraduate degree in geology or paleontology is preferable, but is less important than documented experience performing paleontological monitoring, or ■ AS or AA in geology, paleontology, or biology and demonstrated two years of experience collecting and salvaging fossil materials in the state or geologic province of the specific project, or ■ Enrollment in upper division classes pursuing a degree in the fields of geology or paleontology and two years of monitoring experience in the state or geologic province of the specific project. Monitors must demonstrate proficiency in recognizing various types of fossils, in collection methods, and in other paleontological field techniques. Copies of Monitoring Reports shall be submitted to the BLM and CPUC on a weekly basis.

APM	Description
APM PAL-3	**Final Reporting and Curation.** At the conclusion of laboratory work, a final report will be prepared describing the results of the paleontological monitoring efforts associated with the project. The report will include a summary of the field and laboratory methods, an overview of the Proposed Project area geology and paleontology, a list of taxa recovered (if any) and their scientific significance, and recommendations. If the monitoring effort produced fossils, then a copy of the report will also be submitted to the designated museum repository. All significant fossils collected will be prepared in a properly equipped paleontology laboratory to a point ready for curation no more than 60 days after all fieldwork analyses are completed. Preparation will include the careful removal of excess matrix from fossil materials and stabilizing and repairing specimens, as necessary. Following laboratory work, all fossil specimens will be identified to the lowest taxonomic level, catalogued, analyzed, and delivered to an accredited museum repository for permanent curation and storage. The cost of curation is assessed by the repository and is the responsibility of SCE.
APM PAL-4	**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.

Source: SCE, 2020

3.9.3.2. Impact Significance Criteria

Significance Criteria

The following significance criteria for geology and soils and paleontology have been identified based on the CEQA Appendix G Environmental Checklist and adjusted for relevance to this analysis based on local conditions and the project description. For purposes of the CEQA analysis for this Project, an impact would be considered significant and require additional mitigation if Project construction or maintenance of Project facilities during Project operations would result in any of the following criteria being met.

- **Impact GSP-1:** Expose people or structures to adverse effects, including the risk of loss, injury, or death, due to rupture of a known earthquake fault, seismic ground shaking, or liquefaction.
- **Impact GSP-2:** The Project could trigger substantial soil erosion or the loss of topsoil.
- **Impact GSP-3:** The Project could be located on a geologic unit or soil that is unstable or would become unstable as a result of the Project, and result in on- or off-site landslide, subsidence, liquefaction, or collapse.
- **Impact GSP-4:** Be located on expansive soil creating substantial risks to life or property.
- **Impact GSP-5:** Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

The following significance criterion is not addressed in this EIR because the Proposed Project would not include construction of any new wastewater or septic disposal facilities and is thus not discussed beyond this summary.

- The Proposed Project would not 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.

3.9.3.3. Impacts and Mitigation Measures

This analysis addresses all project segments. Where required, specifics for each segment are provided. The Cal City Options defined in Section 2.1.1 and illustrated in Figure 2-2 would have impacts no different from those defined for Impacts GSP-1 through GSP-5, because the extent of ground disturbance required for the Proposed Project would be the same as that required for any of the Cal City Options.

The Proposed Project consists of improvements to an existing subtransmission line. While some new structures would be constructed at slightly different locations than the existing structures, because of the proximity of the existing and new structures, geologic and soil conditions would not be substantially different between the existing and proposed locations. Therefore, the Proposed Project would not be anticipated to exacerbate any existing geology or soil hazards compared to existing conditions. In addition, as discussed below, many of the existing structures that would be replaced are over 100 years old. The new structures would be designed and constructed in accordance with current structural requirements, which by considering the interaction between the structures and the surrounding geologic and soil conditions, are intended to accommodate, not exacerbate, existing environmental hazards. This is accomplished through the use of modern technologies and materials that allow for the controlled, flexible movement of structures to absorb and dissipate seismic energy, as well as the installation of more durable and resilient infrastructure that would not worsen existing conditions.

Because the Proposed Project would not exacerbate existing geologic and soil hazards, the following discussion is primarily focused on how existing environmental hazards would affect the risk of damage to the proposed structures.

Impact GSP-1: Expose people or structures to adverse effects, including the risk of loss, injury, or death, due to rupture of a known earthquake fault, seismic ground shaking, or liquefaction.

Fault Rupture

LESS THAN SIGNIFICANT. New Proposed Project structures would be subject to hazards of surface fault rupture at crossings of active and potentially active faults. The Proposed Project alignment crosses numerous active and potentially active faults considered to be potential seismic sources by the USGS (2023), including: the Owens Valley fault zone, the Little Lake fault zone, the Garlock fault zone, the Lenwood-Lockhart-Old Woman Springs fault zone, the Helendale-South Lockhart fault zone, and the Gravel Hills-Harper Lake fault zone. The locations of these fault crossings along Proposed Project segments and location of towers and poles relative to individual fault strands are discussed in Section 3.9.1.6 and presented on maps at the end of this section.

- **Segment 1: Bishop to Inyokern**. Segment 1 crosses (crosses fault strands 23 times) and is in close proximity to numerous Alquist-Priolo zoned strands of the Owens Valley fault zone and crosses an Alquist-Priolo zoned strand of the Little Lake fault zone. An active Alquist-Priolo zoned strand of the Southern Sierra Nevada fault crosses Segment 1 and a potentially active mapped fault trace of the Southern Sierra Nevada fault zone is located less than 0.2 miles southwest of and trending toward the Segment 1 alignment. Rupture on any of these faults could cause significant damage to new Project structures.
- **Segment 2: Inyokern to Kramer Junction**. Segment 2 crosses and is in close proximity to numerous Alquist-Priolo zoned strands of the Owens Valley fault zone and crosses an Alquist-Priolo zoned strand of the Little Lake fault zone. The potentially active Southern Sierra Nevada fault mapped fault trace is located less than 0.2 miles southwest of and trending toward the alignment. Rupture on any of these faults could cause significant damage to new Project structures.
- **Segment 3N: Kramer Junction to Daggett**. Segment 3N only includes construction of 45 new subtransmission structures along its length. Only one planned new structure along this segment (structure 2187) is in close proximity to the crossing of the mapped trace of active fault – the Gravel Hills-Harper Lake

fault zone. At the location where the Gravel Hill-Harper Lake fault zone crosses the alignment, it is not within a mapped Alquist-Priolo zone. Rupture along this fault could potentially damage the planned new H-frame transmission structure.

- **Segment 3S: Kramer Junction to Barstow to Daggett**. Segment 3S includes construction of 42 new subtransmission structures along its length. None of the planned new subtransmission structures are crossed by nor are they in close proximity to the crossing of the mapped trace of an active fault.

Hazards from fault rupture include collapse of Proposed Project structures placed on or immediately adjacent to an active or potentially active fault. In the event of surface ground rupture or displacement due to an earthquake, affected subtransmission or telecommunications structures may collapse and could subsequently cause damage to or the collapse of other adjacent structures. To avoid damage and/or collapse of towers or poles, subtransmission and telecommunications structures should be sited so as not to be on, straddle, or be placed immediately adjacent to fault traces.

Most of the existing structures are over 100 years old, so this risk associated with faulting and other seismic hazards would be reduced when the Proposed Project is constructed, because the structures would be constructed in accordance with current structural requirements.

Fault crossings, where multiple feet of displacement are expected along active faults and Alquist-Priolo zoned faults are best crossed as overhead lines with towers and poles placed well outside the fault zone to allow for the flex in the conductors to absorb any offset. Compliance with CPUC GO 95, while not requiring specific geologic hazard design, would reduce the likelihood of Project damage to structures due to fault rupture due to the required construction and design requirements.

Because most Proposed Project structures would be located very near existing structures that would be removed, at these locations, the Project would not result in an increased risk from fault rupture compared with the existing baseline. However, some structures would be located in different locations along the ROW. SCE has committed to performing geotechnical investigations for the Proposed Project prior to project design (see Section 2.4.1.12). SCE's studies and compliance with GO 95 would ensure that the potential for fault rupture is considered in Project design. This would allow for final location of structures to avoid active fault crossings. As a result, the presence of the Proposed Project would not expose people or structures to increased risk resulting from fault rupture; impacts would be less than significant.

Operations and maintenance activities would include routine inspections and emergency repair within substations and of Project structures, including inspection and repair of damaged structures after an earthquake event. No new risk would be created during these inspections and repair operations. Impacts would be less than significant.

Strong Ground Shaking

Operation and Maintenance. *LESS THAN SIGNIFICANT.* The Proposed Project is located in a seismically active area and is likely to experience one or more large earthquakes within its lifetime. Estimated intermediate-period (1.0 second) ground acceleration due to seismically induced ground shaking along the Proposed Project ranges from 0.25 to 1.05 across the Proposed Project (CGS, 2016) with the higher values located in the western portion of the Project, where most of the active and potentially active faults are located. Proposed Project components along all five Proposed Project segments can expect to experience moderate to very strong ground shaking in the event of a large local or regional earthquake with Segment 1 having most of its length within areas of strong to very strong shaking (CGS, 2016).

The Proposed Project area may experience moderate to very strong ground shaking due to large local or regional earthquakes. Seismically-induced ground shaking could occur and could result in structure damage or personal injury during construction (which would take place over 39 months) or during operations and maintenance. However, this risk exists now, because the existing, much older structures have been in place since the early 1900's.

The new and modified subtransmission structures and substation modifications would be designed as to comply with CPUC General Orders (GO) 95 and 128 (overhead electrical line construction requirements and underground electrical supply and communication systems requirements, respectively). While CPUC GO 95 establishes requirements to ensure transmission line safety in California, it does not establish specific seismic design requirements. The Proposed Project structures would be designed in accordance with SCE's geotechnical standards, which rely on standard engineering practices and guidelines (SDG&E, 2009; ASCE, 2025). Above-ground towers and poles would also be designed to meet wind loading criteria, which generally exceed seismic loading criteria, thereby reducing and/or eliminating the risk of these structures failing due to ground shaking.

As described in Section 2.4.1.12, SCE would conduct geotechnical investigations to provide an evaluation of geotechnical conditions prior to final project design and construction. The new construction would not exacerbate any existing environmental hazards; in fact, design of new structures to the above-referenced guidelines and standards would result in stronger and safer structures than currently exist on the I-C Project subtransmission lines. As a result, the potential hazards to people or structures resulting from the Proposed Project would result in a less than significant impact.

As described in Section 2.5, during Project operation, SCE's operations and maintenance activities would include routine inspections and emergency repair within substations and of Project structures, including inspection and repair of damage to structures after an earthquake event. As for the Proposed Project construction, operations and maintenance would ensure that Project facilities retain their structural integrity, exceeding that of the existing facilities. There would be no adverse impact to people or structures as a result of operations and maintenance activities.

Seismically Induced Slope Failure or Liquefaction

Construction. *LESS THAN SIGNIFICANT.* Construction activities would not induce seismic-related ground failure, liquefaction, or landslides. The Proposed Project components are primarily underlain by relatively flat to gently sloping terrain, with areas of steeper slopes mapped as having moderate to high landslide susceptibility where the Project crosses and is near to the El Paso and Rand Mountains (Segment 2), the Waterman Hills (Segment 3N), Daggett Ridge (Segment 3S). No landslides are mapped on the gentle to moderately inclined slopes along the Proposed Project. Although portions of the Proposed Project may experience moderate to very strong seismically induced ground shaking during construction, it is unlikely that slope failures would occur at or near the Proposed Project components during the construction timeframe. As a result, the impact would be less than significant impact from seismically induced slope failure.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* Most of the Proposed Project's new and modified structures are located in areas with groundwater levels greater than 100 feet bgs so liquefaction risk is small. However, some areas with identified shallower groundwater are present along Segments 1, 3N, and 3S. If perched, seasonal, or existing shallow groundwater levels of less than 50 feet bgs were to exist in loose sediments along portions of these segments, liquefaction could occur in the event of an earthquake and local seismically induced ground shaking. Liquefaction could cause damage or collapse of Project structures.

As described in Section 2.4.1.12, SCE will conduct geotechnical investigations prior to final Project design and engineering to evaluate the depth to the water table, liquefaction potential, physical properties of subsurface soils, and slope stability and may include recommendations for the final engineering design, as needed. The new and modified Project structures would be designed, as required, in compliance with CPUC GO 95 and 128 (overhead electrical line construction requirements and underground electrical supply and communication systems requirements, respectively). Implementation of the General Orders, geotechnical design recommendations, and compliance with SCE's design standards, would result in stronger and safer subtransmission facilities than the very old facilities that are currently existing. All of

these methods would ensure that Project structures would be constructed in a manner in which they would not be significantly damaged from seismically induced landslides or liquefaction. Therefore, the Project would not exacerbate any existing environmental conditions that could result in adverse effects to people or structures. This impact would be less than significant.

Operations and maintenance practices would also include routine inspections and emergency repair within substations and ROWs (see Section 2.5). There would be no substantial change in the potential hazards to people or facilities due to damage from seismically induced ground failure, including landslides and liquefaction, along the project routes due to operations and maintenance of the Proposed Project. This risk associated with the Proposed Project would be reduced compared with the existing older facilities, resulting in a less than significant impact, less severe than that associated with the existing subtransmission towers.

Impact GSP-2: Result in substantial soil erosion or the loss of topsoil.

Construction

LESS THAN SIGNIFICANT WITH MITIGATION. Ground disturbance for the Proposed Project would include all areas along all segments affected by construction. It is estimated that the ground disturbance required for construction of the Proposed Project would be nearly 2,300 acres (see Table 2-5, Section 2). Construction-related ground disturbance includes installation and removal of subtransmission structures, grading or rehabilitation of existing access roads, grading of new spur and access roads, and minor grading at staging and construction yards and sites. The movement of equipment and materials during construction could destabilize the soil surface and increase erosion potential from water and wind.

The most likely time for erosion to occur is soon after initial disturbance and before reestablishment of vegetative cover or placement of structures. Some of the soils underlying the Proposed Project have moderate to high susceptibility to wind erosion and moderate susceptibility to sheet and rill erosion by water (see soils tables in Appendix 6).

Because the Proposed Project would disturb a surface area greater than one acre, it would be required to obtain a National Pollution Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activity (under federal Clean Water Act regulations). Compliance with the NPDES permit would require that the SCE submit a project specific Storm Water Pollution Prevention Plan (SWPPP). The SWPPP would require development and implementation of BMPs to identify and control erosion, which would reduce the potential for construction to trigger erosion.

Two APMs would reduce soil erosion by limiting vehicles to designated access routes and limiting vehicle speed: APM BIO-HERP-9 and APM BIO-MAM-1. APM BIO-RES-1 also requires revegetation, which would reduce erosion.

While the SWPPP and APMs would reduce construction-triggered erosion to some extent, construction could still result in a significant level of erosion and loss of soils without implementation of detailed project-specific protocols. In order to develop and implement these protocols and to ensure that no violation of water quality standards or waste discharge requirements occurs, Mitigation Measure HW-1a (Implement a Drainage, Erosion, and Sedimentation Control Plan) would be required (see Section 3.12). This measure also requires demonstrated compliance with water quality permits. Mitigation Measure BIO-1i (Desert Tortoise) and Mitigation Measure BIO-1a (Worker Environmental Awareness Program) would be required to reduce erosion. With implementation of the Mitigation Measure HW-1a (Implement a Drainage, Erosion, and Sedimentation Control Plan), Mitigation Measure BIO-1a (Worker Environmental Awareness Program), and Mitigation Measure BIO-1i (Desert Tortoise) substantial soil erosion is not anticipated to occur, and impacts would be less than significant.

Operations and Maintenance

LESS THAN SIGNIFICANT. After construction of the Proposed Project, SCE would continue to perform most regular operations and maintenance activities of overhead facilities from existing access roads with no new surface disturbance. Repairs done to existing facilities, such as repairing or replacing existing poles and towers, could occur in areas previously undisturbed (see Section 2.5). Access road maintenance could require limited grading; however, this type of activity is ongoing now to ensure safe operation of the existing Project. Given the anticipated reduction in operations and maintenance activities in the future, compared with past maintenance for very old facilities, the comparative effects would be less than significant. SCE's ongoing use of BMPs and compliance with water quality permits would result in no increase in adverse impacts related to erosion from operations and maintenance activities. Impacts would be less than significant.

Mitigation Measure for Impact GSP-2

HW-1a **Implement a Drainage, Erosion, and Sedimentation Control Plan.** (See full text in Section 3.12.3.3, Hydrology and Water Quality)

Impact GSP-3: Be located on a geologic unit or soil that is unstable or would become unstable as a result of the Project, and result in on- or off-site landslide, subsidence, liquefaction, or collapse.

Construction

LESS THAN SIGNIFICANT. As discussed above under Impact GSP-2, the Proposed Project components are primarily underlain by relatively flat to gently sloping terrain, with areas of steeper slopes mapped as having moderate to high landslide susceptibility where the Project crosses and is near to the El Paso and Rand Mountains (Segment 2), the Waterman Hills (Segment 3N), Daggett Ridge (Segment 3S). No landslides are mapped on the gentle to moderately inclined slopes along the Proposed Project.

The Proposed Project crosses several valleys with known subsidence potential and that have had measured subsidence, presented in Appendix 6, Table Ap.6-2 (DWR, 2014 and 2023). Identified subsidence potential of the basins underlying the Proposed Project are low for the Indian Wells Valley basin (Segments 1 and 2), medium-to-high for the Fremont Valley basin (Segment 2), high for the Harper Valley basin (Segments 2, 3N, and 3S), high for the Lower Mojave River Valley basin (Segment 3S). Measured subsidence of a maximum of -0.5 feet has been identified along Segment 1 in the Owens and Indian Wells Valley basins; along Segments 3N and 3S in the Lower Mojave River Valley basin. Subsidence near to Segment 3N is found in the vicinity of Harper Dry Lake. Construction of the Project in areas where significant subsidence underlies a portion of a structure or transmission line could potentially cause damage due to ground fissures, ground tilt from differential subsidence, loss of clearance height, or increased tension of the line due to relative elevation changes. However, large scale regional subsidence would not cause damage to structures.

The existing subtransmission structures have been subject to potential landsliding and subsidence hazards for over 100 years. There is no evidence that the existing facilities have created adverse effects on people and structures from these hazards.

SCE would conduct geotechnical investigations prior to final Project design and engineering to evaluate the depth to the water table, liquefaction potential, physical properties of subsurface soils, and slope stability and may include recommendations for the final engineering design, as needed. The Project replacement structures would be constructed to a higher engineering standard than the existing older structures, which were built before current engineering standards were developed. As a result, the presence of the new subtransmission line would present a reduced level of potential hazard than the existing hazards.

Implementation of geotechnical design recommendations, and compliance with geotechnical design recommendations, standard design guidelines, and relevant State requirements would reduce potential hazards related to damage from seismically induced landslides or liquefaction. Impacts would be less than significant.

Operations and Maintenance

LESS THAN SIGNIFICANT. During Project operation, activities would include routine inspections and emergency repair within substations and of Project structures, including inspection and repair of damaged structures. The level of maintenance activity is expected to decrease after installation of new structures and conductors because existing older facilities need more attention. However, the types of activities currently taking place for existing structures would continue. Impacts would be less than significant.

Impact GSP-4: Be located on expansive soil creating substantial risks to life or property.

Construction

No construction impacts relate to presence of expansive soils.

Operations and Maintenance

LESS THAN SIGNIFICANT. Soils underlying the entire Proposed Project are generally granular (sandy) and non-expansive (SCE, 2020). However, some soil units with Moderate and High expansive potential are located along the Proposed Project, as described in Section 3.9.1.8 and in Appendix 6, Table Ap.6-5 to Ap.6-8. Expansive soils can cause damage to Proposed Project structures. SCE will conduct geotechnical investigations prior to final Project design and engineering to evaluate the depth to the water table, liquefaction potential, physical properties of subsurface soils, and slope stability and may include recommendations for the final engineering design, as needed.

The existing older subtransmission structures were installed before current engineering practices were developed, and there is no evidence that expansive soils under these structures have resulted in adverse effects on people or structures. I-C Project structures would be designed in accordance with current geotechnical recommendations, standard engineering practices, and relevant regulations. The presence of these facilities would not create substantial effects on people or structures.

Operations and maintenance activities would include routine inspections and emergency repair within substations and of Project structures, including inspection and repair of damaged structures. These activities would be a continuation of those ongoing for the existing subtransmission facilities. These activities would not result in significant adverse effects on people or structures.

Impact GSP-5: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Construction

LESS THAN SIGNIFICANT WITH MITIGATION. As defined by BLM, significant paleontological resources are fossils or assemblages of fossils that are unique, unusual, rare, uncommon, or diagnostically important. Most impacts on paleontological resources are direct impacts that would result from ground disturbing activities within paleontologically-sensitive geologic units where significant resources could be damaged or destroyed. Potential impacts may vary depending on the depth and lateral extent of earth moving, as well as methods used. Activities that disturb only the immediate surface (e.g., scraping) may result in impacts on exposed fossils if they result in crushing and fragmentation beyond repair. Activities that disturb both the surface and subsurface (e.g., excavation) may result in impacts on fossils that are located on the surface and/or preserved in subsurface sediments.

The loss of any fossils and their associated depositional information would result in the permanent loss of an educational and scientific resource and represents a significant impact under CEQA. To avoid disturbing these resources, the recovery of scientifically important fossil remains, and associated data must be conducted to allow for scientific net gains in the discovery of previously unrecorded paleontological resources. Upon recovery, the resources would be housed permanently in an accredited regional repository (museum) for future study.

To determine the potential to encounter scientifically important paleontological resources during Project construction, Paleo Solutions conducted a desktop paleontological assessment for the Proposed Project. This assessment included reviews of geologic mapping, published and unpublished scientific papers, and paleontological records from museum repositories and online databases. In addition, Paleo Solutions conducted a field survey, which involved both a pedestrian survey and windshield survey. Additional details about the desktop paleontological assessment and field survey efforts are provided in that report.

The desktop paleontological assessment identified a moderate to very high potential for significant paleontological resources in the Project vicinity that could be disturbed during Project construction in paleontologically sensitive geologic rock units. In addition, the paleontological field survey identified two poorly preserved paleontological resources along the Project alignment within Late Pleistocene-age Manix Lake Beds (sand) and Devonian Sultan Limestone; due to the poor preservation and lack of identifiable features, these fossils were not considered scientifically significant (Paleo Solutions, 2020). In summary, based on the paleontological assessment (Paleo Solutions, 2020), geologic formations with the potential for significant paleontological resources, which are units with a paleontological sensitivity of **PFYC 3** or greater, have been identified along the Project alignment and could be affected during construction. As discussed in Section D.9.1.8, the following paleontological resource sensitivities of **PFYC 3** or greater are located along the Project segments:

- Moderate (**PFYC 3**) to high (**PFYC 4**) along Segment 1 (Bishop to Inyokern)
- Moderate (**PFYC 3**) to very high (**PFYC 5**) along Segment 2 (Inyokern to Kramer Junction)
- Moderate (**PFYC 3**) along Segment 3N (Kramer Junction to Daggett)
- Moderate (**PFYC 3**) to very high (**PFYC 5**) along Segment 3S (Kramer Junction to Barstow to Daggett)

Some portions of the Project footprint are already disturbed and would be unlikely to contain significant paleontological resources. However, in some areas, replacement structures would need to be installed along a new alignment approximately 50 feet to the east of the existing alignment, in order to provide continued service while the Project is being constructed. Construction activities would include drilling down to 30 feet to install TSP H-frames within an 8-foot-diamter disturbance area, as well as surface-level disturbance to move equipment and install cranes. Erection of the structures may require the establishment of a temporary crane pad, which would typically occupy an area of 50 feet by 50 feet; this area would be cleared of vegetation and/or graded as necessary to provide for a level surface for crane operation.

Other activities include excavation down to 25 feet to install LWS poles, LWS H-frames, wood pole or steel H-frames, and wood pole multipole structures; excavation down to 8 feet within a 12-by-12-foot area for vaults and pull boxes; and various other excavation, trenching, grubbing, and grading activities with a depth of disturbance varying from 6 inches to 8 feet deep. Therefore, significant paleontological resources at both the surface and within subsurface sediment could be encountered and adversely affected (damaged or destroyed) during Project-related ground disturbance within sensitive geologic rock units.

To avoid potential impacts, the Proposed Project includes four APMs related to paleontological resources, APMs PAL-1 to PAL-4, listed in Table D.9-1. APMs PAL-1 through PAL-4 provide for development of a PRMMP and present some guidance as to required elements of the PRMMP, requirements for paleontological resources monitoring staff and reporting, and construction worker training related to paleontological resources and inclusion of paleontological information and related work practices in the WEAP.

In accordance with APM PAL-1 and BLM requirements, a draft PRMMP was developed for BLM in April 2022 by SCE's consultant Material Culture Consulting (Material Culture Consulting, 2022). The draft PRMMP provides details on the SCE's suggested mitigation program and implementation procedures, including paleontological monitoring staff qualifications for both BLM and non-BLM lands; requirements related to conducting a pre-construction meeting and WEAP; details related to field monitoring requirements during construction (level of effort, activities recommended during monitoring, fossil discovery coordination, and monitoring safety, equipment, and documentation); fossil recovery, preparation, identification, and curation; and final reporting. The draft PRMMP also includes detailed monitoring maps and specific monitoring recommendations by structure number, based on the specific paleontological potential class at each structure location (e.g., full-time monitoring for moderate to high potential, spot checking at 6 feet and beyond for low to moderate potential, and none for very low potential) (Material Culture Consulting, 2022). Should the project be approved, the CPUC will require that an updated PRMMP to be prepared and submitted for CPUC review prior to the start of construction.

With incorporation of APMs PAL-1 to PAL-4, in addition to compliance with applicable regulations, most potential damage to or destruction of scientifically important paleontological resources would be avoided, as any resources that are encountered during construction would be recovered and curated for future study. The process for monitoring, recovery, curation, and reporting of all resources must be approved by BLM and CPUC, thereby ensuring that most scientifically important paleontological resources will be permanently protected.

However, the Unanticipated Discover Protocol defined in APM PAL-1 does not specifically cite that carbonate-rich paleosols are indicators of the presence of microvertebrates. These paleosols require screening of a test sample of sediment following the guidelines SVP (2010). Mitigation Measure GSP-5a (Unanticipated Paleontological Resource Protocol) supersedes the protocol component of APM PAL-1 in order to avoid the destruction or disturbance of significant paleontological resources, specifically microvertebrate fossils. Implementation of the defined testing would ensure that potentially valuable resources are identified. Therefore, impacts would be less than significant with implementation of this mitigation measure.

Mitigation Measure for Impact GSP-5

GSP-5a **Unanticipated Discovery Paleontological Resource Protocol Update (Supersedes the protocol defined in APM PAL-1).** The Paleontological Resource Mitigation and Monitoring Plan (PRMMP) shall detail procedures for halting construction, defining work stoppage zones, notifying stakeholders, and assessing the paleontological find for scientific significance. If indicators of potential microvertebrate fossils are found (e.g., carbonate-rich paleosols), screening of a test sample shall be carried out as outlined in *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources* (SVP, 2010).

Operations and Maintenance

LESS THAN SIGNIFICANT. Only limited ground disturbance in existing disturbed areas would be required during Project operation, primarily related to maintenance of access and spur roads and repairs to structures. Operations and maintenance-related ground disturbance would be no more intense than current baseline activities. Ground disturbance in these previously disturbed areas is unlikely to encounter paleontological resources; therefore, impacts would be less than significant.

3.9.4. Mitigation Monitoring, Compliance, and Reporting

Table 3.9-2 presents the mitigation monitoring, compliance, and reporting information for geology, soils, and paleontology.

Table 3.9-2. Mitigation Monitoring Program – Geology, Soils, and Paleontology

Mitigation Component	Text or Description
Mitigation Measure GSP-5a	**Unanticipated Discovery Paleontological Resource Protocol Update**
Location	All areas of disturbance
Monitoring / Reporting Action	Testing soils for indicators of microvertebrate fossils
Effectiveness Criteria	Screening of test sample identifies potentially important resources
Responsible Agency	Regional Water Control Board, BLM, and Inyo, Kern, and San Bernardino Counties
Timing	During construction

3.9.5. References

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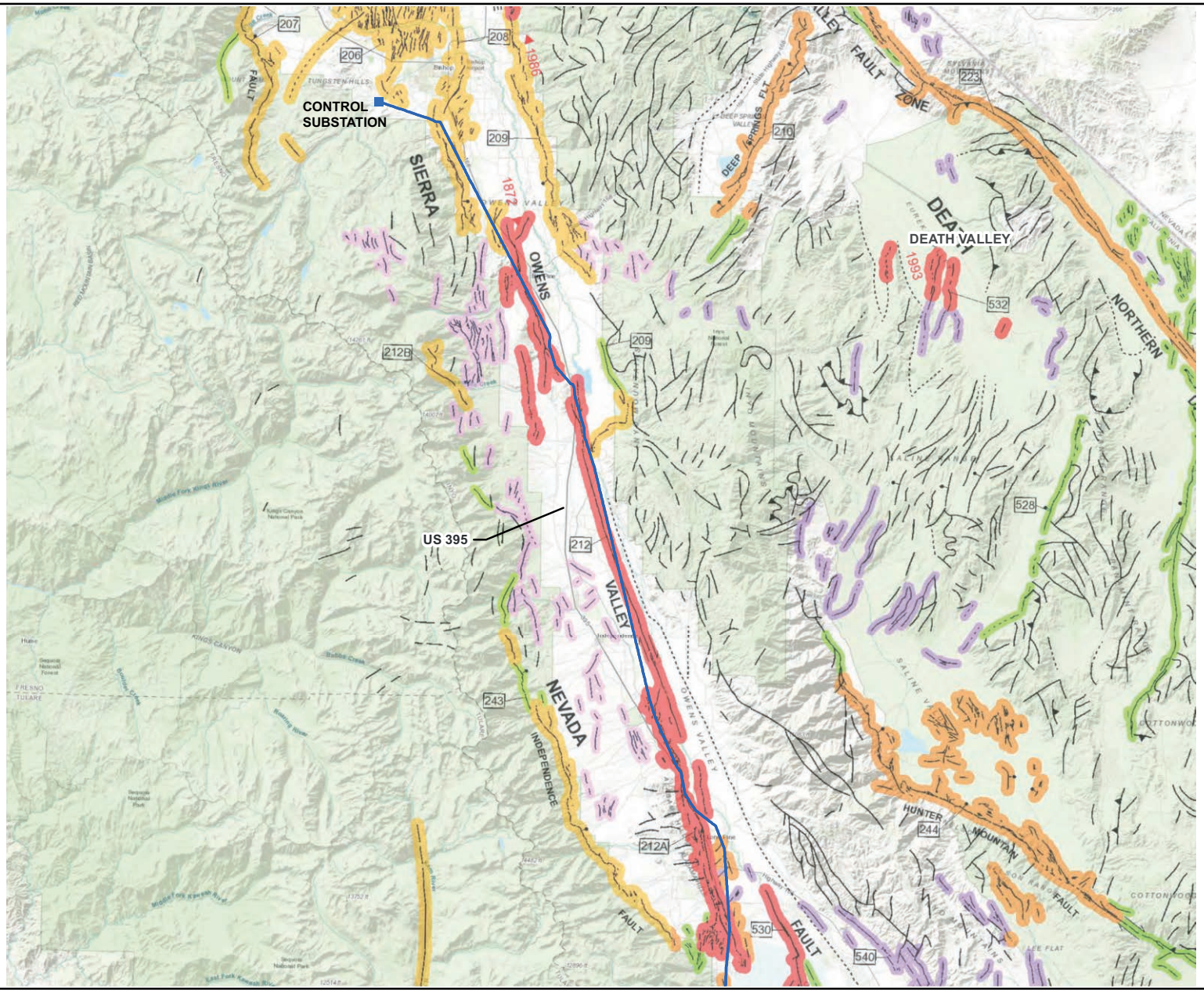


Source: SCE, 2017.

N

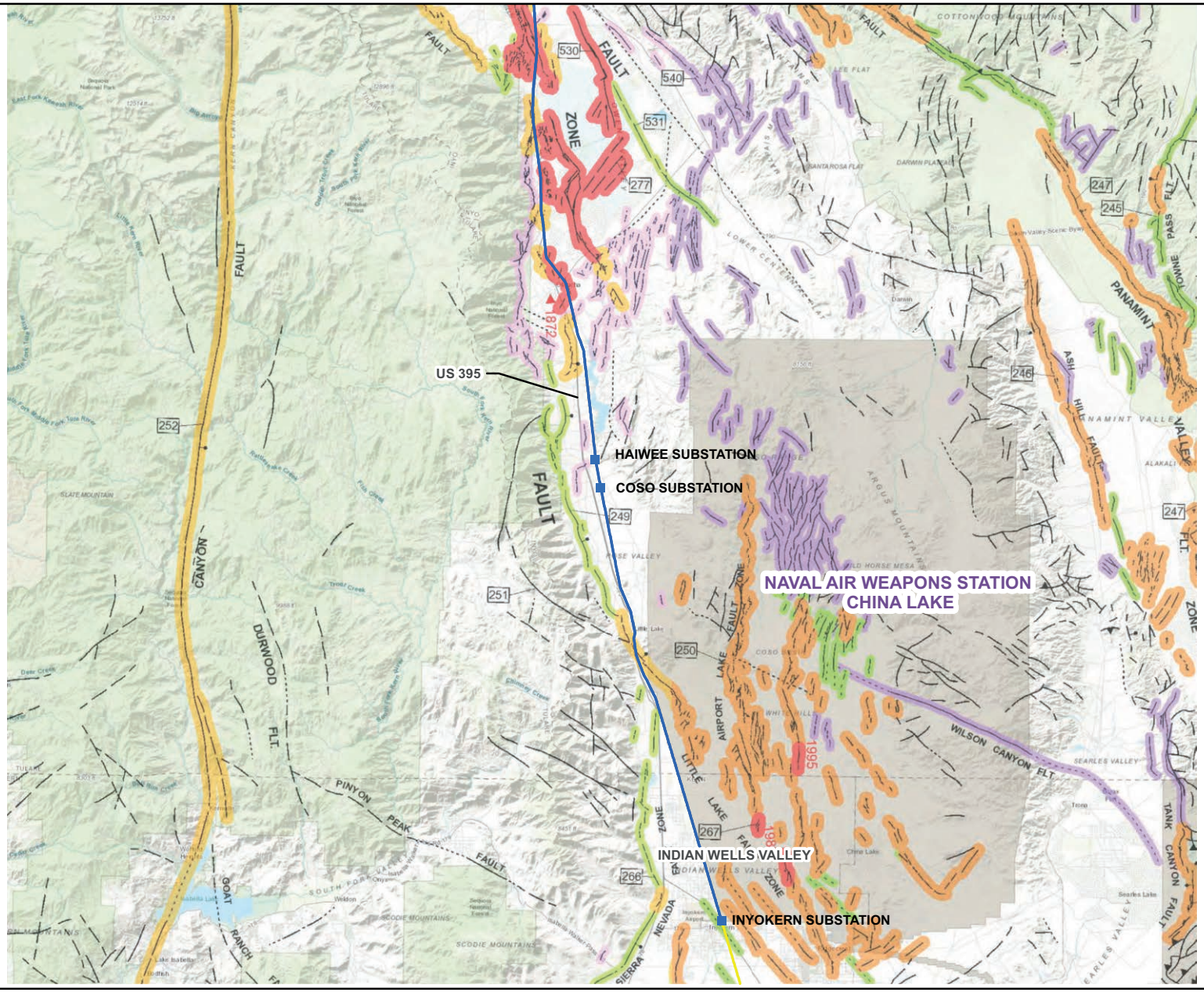
0 6 12
Miles

FAULT
HISTORICAL FAULT
HOLOCENE FAULT
LATE QUATERNARY FAULT
QUATERNARY FAULT
PRE-QUATERNARY FAULT

Legend
SUBSTATION
SEGMENT 1

Figure 3.9-1a

Fault Map
Segment 1 North



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N

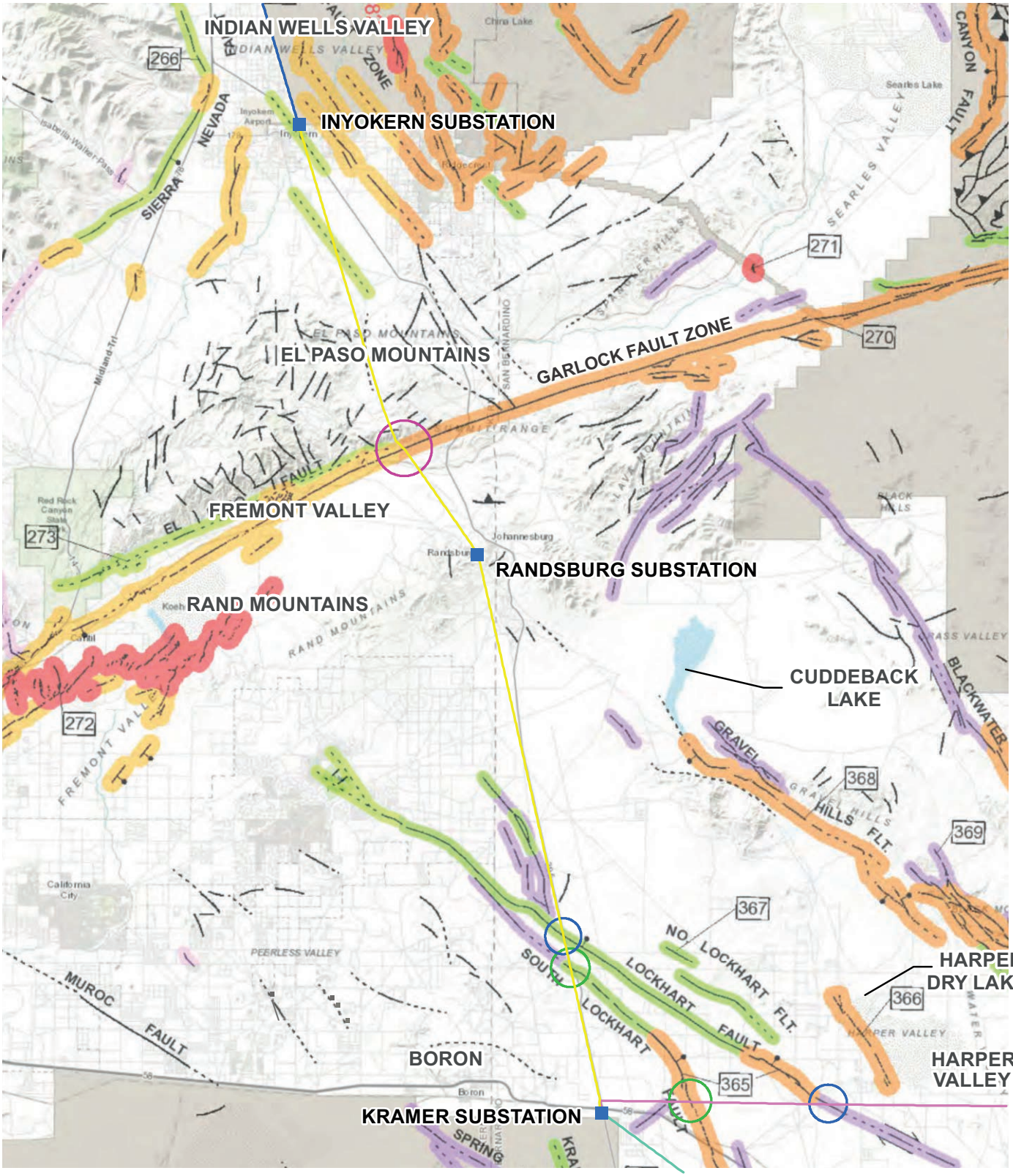
0 6 12
Miles

FAULT
HISTORICAL FAULT
HOLOCENE FAULT
LATE QUATERNARY FAULT
QUATERNARY FAULT
PRE-QUATERNARY FAULT

Legend
SUBSTATION
SEGMENT 1
SEGMENT 2

Figure 3.9-1b

Fault Map
Segment 1 South



Source: SCE, 2017.

Legend

SUBSTATION
SEGMENT 1
SEGMENT 2
SEGMENT 3N
SEGMENT 3S

FAULT
HISTORICAL FAULT
HOLOCENE FAULT
LATE QUATERNARY FAULT
QUATERNARY FAULT
PRE-QUATERNARY FAULT

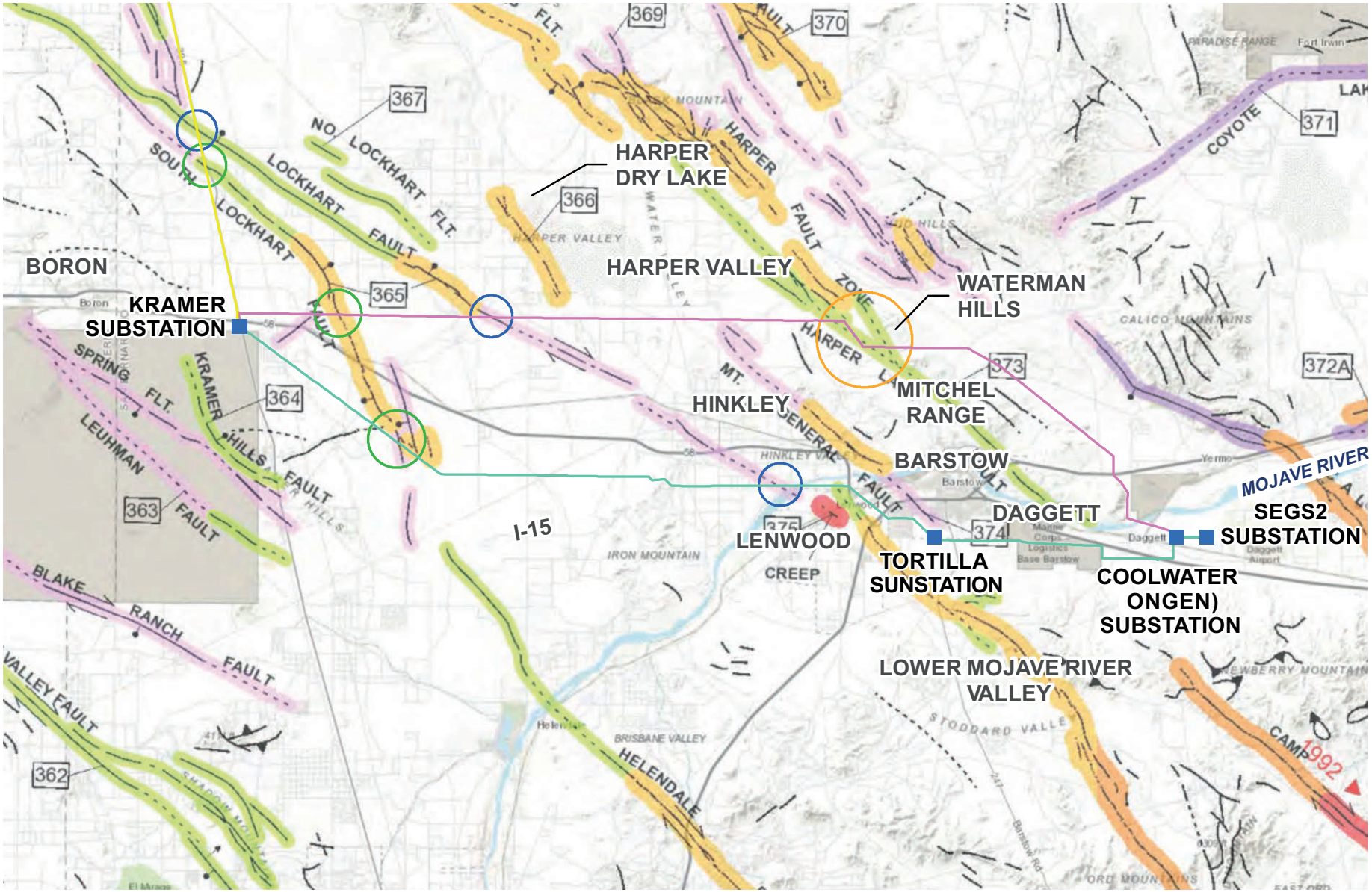
HOLOCENE FAULT ZONES
HARPER LAKE FAULT
SOUTH LOCKHART FAULT
LOCKHART FAULT
CARLOCK FAULT

N

0 3 6
Miles

Figure 3.9-1c

Fault Map Segment 2



Source: SCE, 2017.

Legend

- SUBSTATION
- SEGMENT 2
- SEGMENT 3N
- SEGMENT 3S

FAULT

- HISTORICAL FAULT
- HOLOCENE FAULT
- LATE QUATERNARY FAULT
- QUATERNARY FAULT
- PRE-QUATERNARY FAULT

HOLOCENE FAULT ZONES

- HARPER LAKE FAULT
- MANIX FAULT
- SOUTH LOCKHART FAULT
- LOCKHART FAULT

N

0 3 6
Miles

Figure 3.9-1d

Fault Map
Segments 3N and 3S

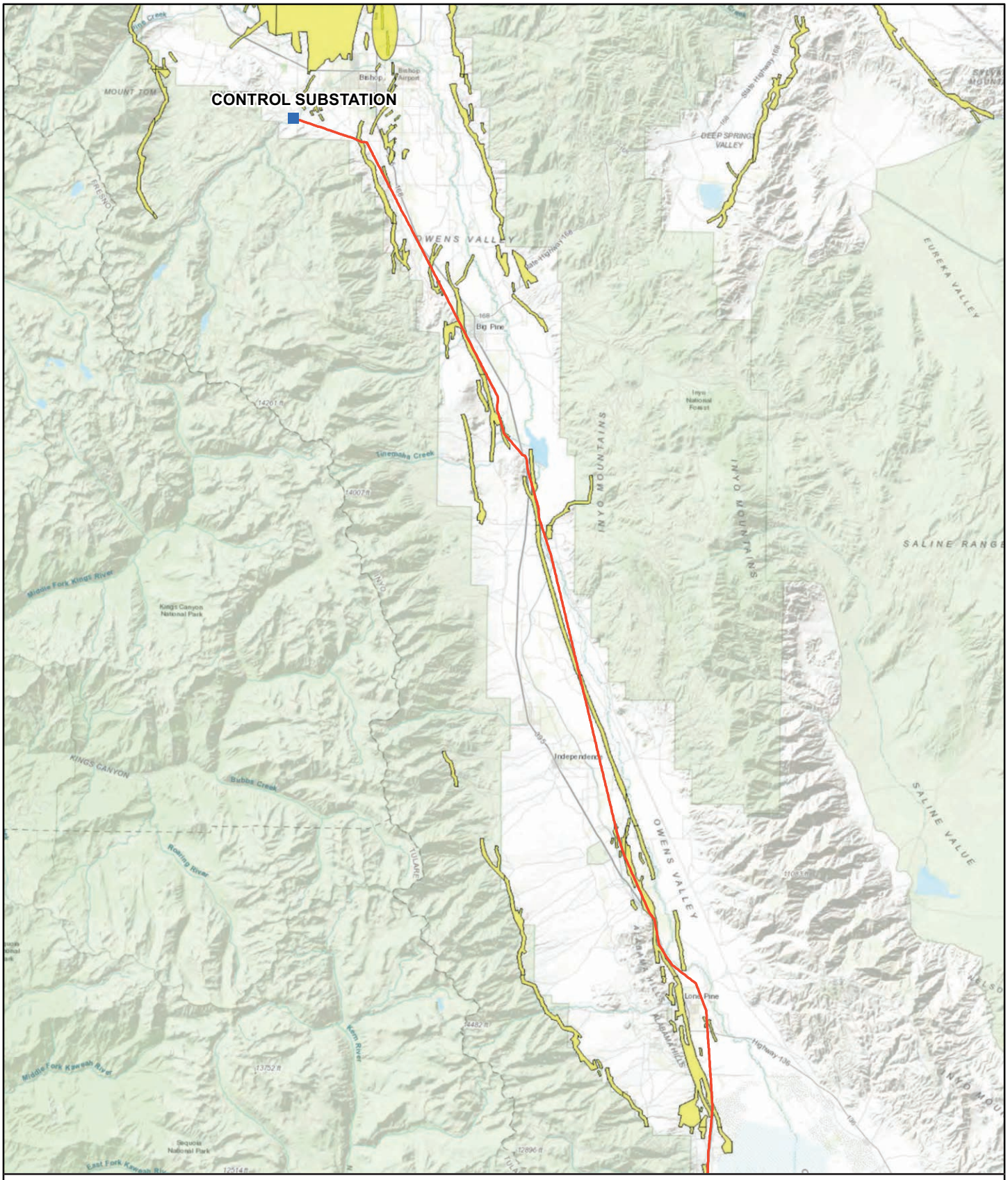


Figure 3.9-2a

Alquist-Priolo Fault Zone Map
Segment 1 North

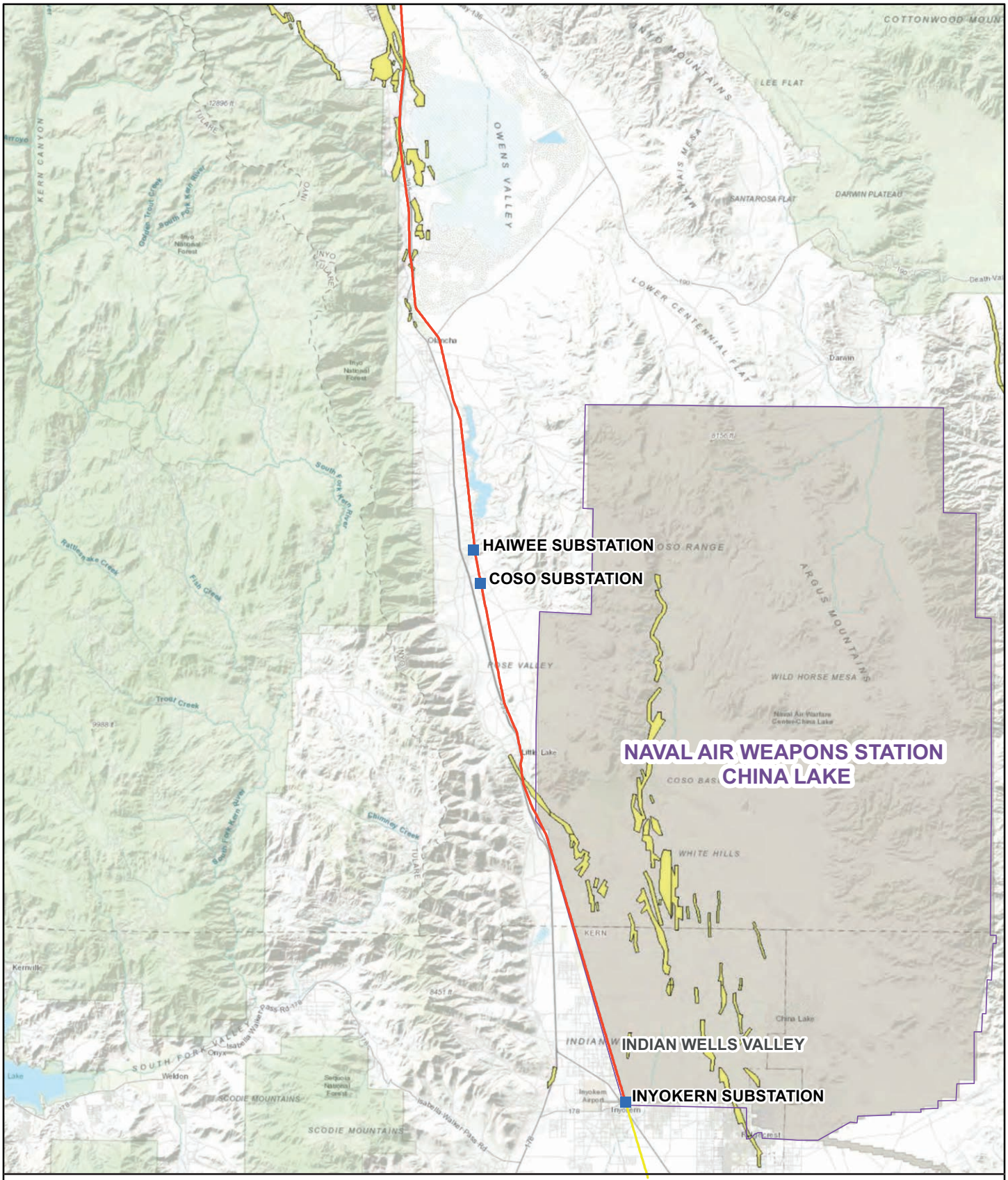


Figure 3.9-2b

Alquist-Priolo Fault Zone Map
Segment 1 South

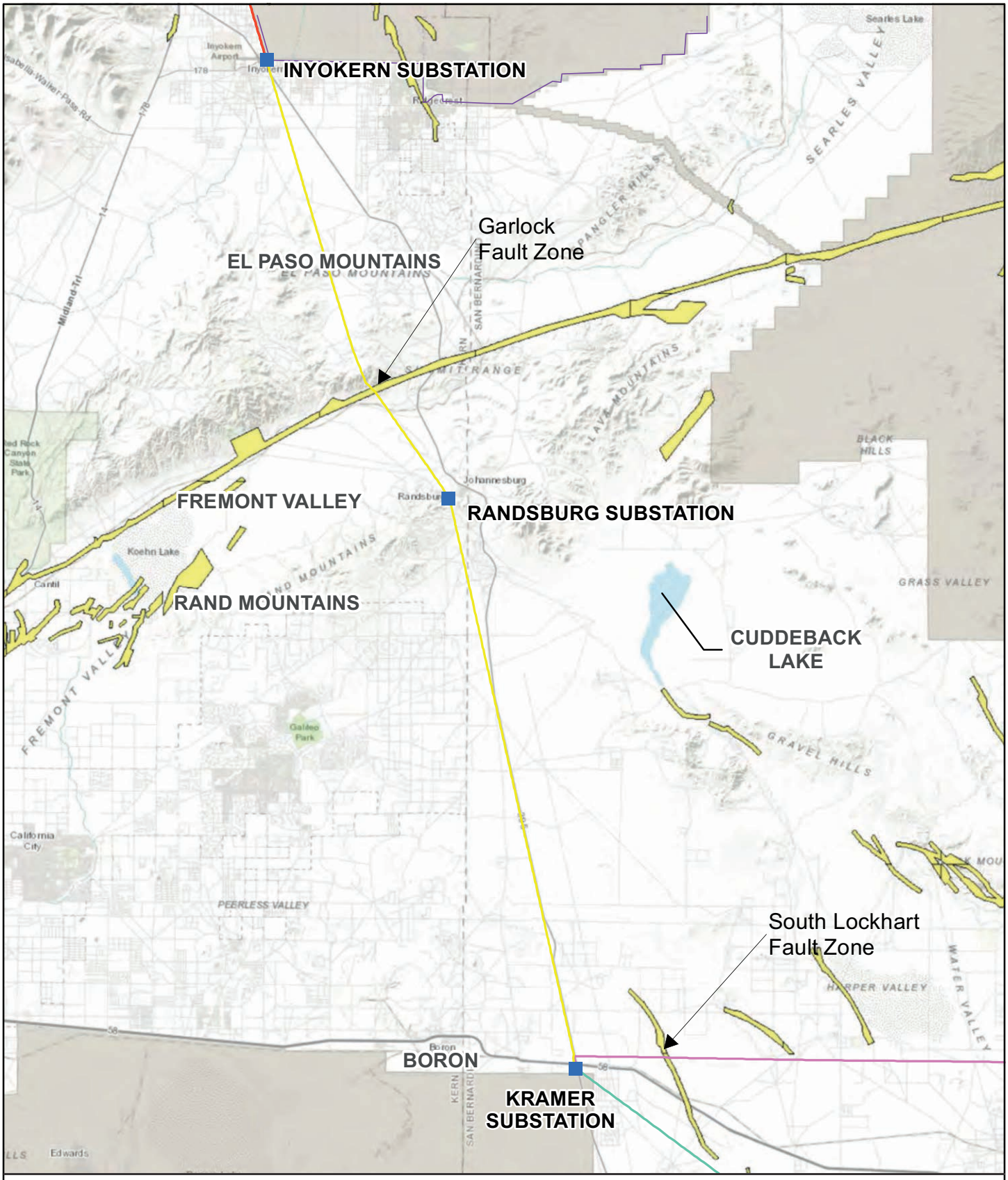


Figure 3.9-2c

Alquist-Priolo Fault Zone Map
Segment 2

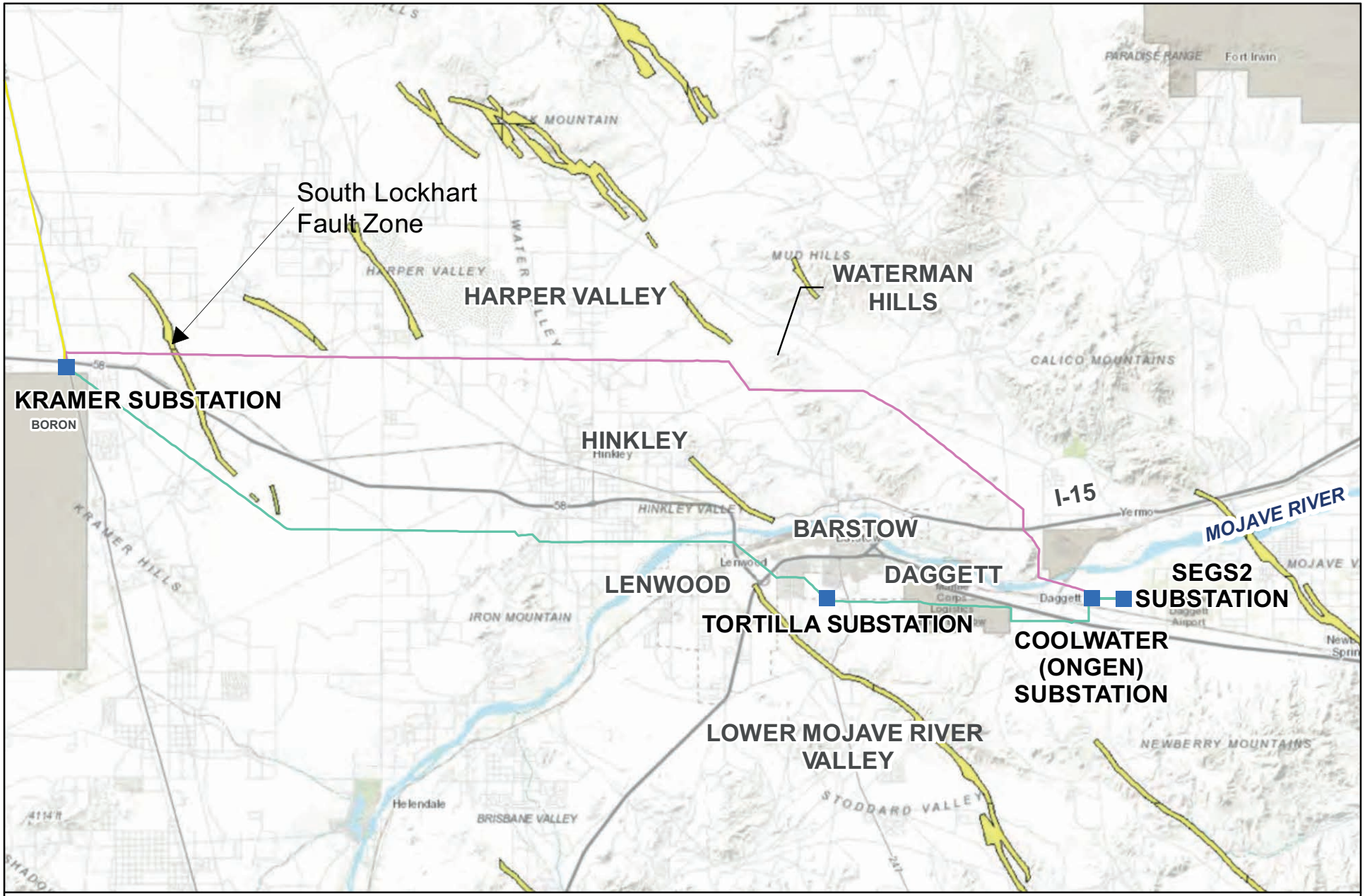


Figure 3.9-2d

Alquist-Priolo Fault Zone Map
Segments 3N and 3S

3.10. Greenhouse Gas Emissions

This section describes existing environmental conditions and anticipated impacts associated with the Proposed Project for greenhouse gas (GHG) emissions. Impacts evaluated in this section include whether the quantity of GHG emissions generated by the Project could have a significant impact on the environment and whether the Project conflicts with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing GHG emissions.

The environmental setting for greenhouse gas emissions is presented in Section 3.10.1 and relevant regulations and standards are summarized in Section 3.10.2. Section 3.10.3 describes the impacts on the environment associated with implementation of the Proposed Project. Section 3.10.4 presents the mitigation monitoring, compliance, and reporting information, and Section 3.10.5 lists references cited in this section. Chapter 4 describes the environmental impacts of the alternatives to the Proposed Project. Cumulative impacts for all disciplines are considered in Chapter 5.

There were no comments received during the scoping period concerning global climate change or the potential impacts of project GHG emissions.

3.10.1. Environmental Setting

3.10.1.1. Regional Setting

Physical Setting

The global climate depends on the presence of naturally occurring greenhouse gases (GHG) to provide what is commonly known as the "greenhouse effect" that allows heat radiated from the Earth's surface to warm the atmosphere. The greenhouse effect is driven mainly by water vapor, aerosols, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and other constituents. Globally, the presence of GHG affects temperatures, precipitation, sea levels, ocean currents, wind patterns, and storm activity.

Human activity directly contributes to emissions of six primary anthropogenic GHGs: CO_2, CH_4, N_2O, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). The standard definition of anthropogenic GHG includes these six substances under the 1997 Kyoto Protocol (UNFCCC, 1998). The most important and widely occurring anthropogenic GHG is CO_2, primarily from the use of fossil fuels as a source of energy.

Effects of GHG Emissions

Changing temperatures, precipitation, sea levels, ocean currents, wind patterns and storm activity provide indicators and evidence of the effects of climate change. From 1950 onward, relatively comprehensive data sets of observations are available. Research by California's Office of Environmental Health Hazard Assessment (OEHHA) documents climate change indicators by categorizing the effects as: changes in California's climate; impacts to physical systems including oceans, lakes, rivers, and snowpack; and impacts to biological systems including humans, vegetation and wildlife. The primary observed changes in California's climate include increased annual average air temperatures, more-frequent extremely hot days and nights, and increasing severity of drought. Impacts to physical systems affected by warming temperatures and changing precipitation patterns show decreasing snowmelt runoff, shrinking glaciers, and rising sea levels. Impacts to terrestrial, marine, and freshwater biological systems, with resulting changes in habitat, agriculture, and food supply are occurring in conjunction with the potential to impact human well-being (OEHHA, 2018).

California GHG Emissions Trends

California first formalized a strategy to achieve GHG reductions in 2008, when California produced approximately 479 million metric tons of CO2 equivalent (MMTCO2e) according to the official Air Resources

Board inventory (CARB, 2023). Since then, the total gross California GHG emissions have declined to 381.3 MMTCO2e in 2021 (CARB, 2023). The largest category of GHG emissions in California is transportation, followed by industrial activities and electricity generation in state and out of state. Globally, anthropogenic GHG emissions grew by roughly 80 percent, from around 27,000 to 49,000 MMTCO2e per year between 1970 and 2010 (IPCC, 2014). In this context, California emits less than 1 percent of the global anthropogenic GHG.

3.10.2. Applicable Regulations, Policies, and Standards

3.10.2.1. Federal Regulations, Policies and Standards

U.S. EPA GHG Mandatory Reporting Program (40 CFR Part 98)

This rule requires mandatory reporting of GHG emissions for industrial facilities and power plants that emit more than 25,000 MTCO2e per year. The reporting program (40 CFR Part 98.300, Subpart DD) applies to electric and transmission distribution equipment that use high GWP gases, including SF_6, for insulation. Currently, there are no federal regulations limiting GHG emissions from the types of sources that would occur with the Proposed Project. The circuit breakers and gas switches related to electric power transmission and distribution may be sources of GHG subject to reporting due to the leakage of SF_6.

3.10.2.2. State Regulations, Policies and Standards

California Global Warming Solutions Act of 2006 [Assembly Bill 32 (AB 32)]

The California Global Warming Solutions Act of 2006 (AB 32) required that California's GHG emissions be reduced to 1990 levels by 2020. The reduction is being accomplished through an enforceable statewide cap on global warming emissions beginning in 2012. AB 32 directs the CARB to develop regulations and a mandatory reporting system to track and monitor global warming emissions levels (AB 32, Chapter 488, Statutes of 2006). The CARB must update the AB 32 Scoping Plan at least every 5 years. Most recently, CARB approved the 2022 Scoping Plan Update in December 2022 (CARB, 2022), which outlines a roadmap to achieve carbon neutrality by 2045. In passing AB 32, the California Legislature found that:

> Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.

Other major Executive Orders, legislation, and regulations adopted for the purpose of reducing GHG emissions support the implementation of AB 32 and California's climate goals, as described below.

California Governor's Executive Orders on GHG Emissions

In September 2018, Executive Order B-55-18 established a new statewide goal to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter. The CARB was directed to develop the framework for implementing the goal of carbon neutrality. Executive Order B-30-15 (April 2015) established a California GHG reduction target of 40 percent below 1990 levels by 2030. One purpose of this interim target is to ensure California meets its target of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050 (Executive Order S-3-05, June 2005). This executive order also specifically addresses the need for climate adaptation and directs state agencies to update the California Climate Adaptation 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. Senate Bill 32 (SB 32) of 2016 codified this GHG emissions target to 40 percent below the 1990 level by 2030.

California Renewables Portfolio Standard (RPS) Program

Electric utilities in California must procure a minimum quantity of the sales from eligible renewable energy resources as specified by RPS requirements. The Clean Energy and Pollution Reduction Act of 2015 [Senate Bill 350 (SB 350)] established California's state policy objectives on long-term energy planning and procurement as signed into law on October 7, 2015. The 100 Percent Clean Energy Act of 2018 [Senate Bill 100 (SB 100)] revised the RPS targets to establish the policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all state agencies by December 31, 2045.

With SB 350 and SB 100, California's objectives include:

- To set the Renewable Portfolio Standard (RPS) for the procurement of California's electricity from renewable sources at 33 percent by 2020, 50 percent by 2026, and 60 percent by 2030;
- To plan for 100 percent of total retail sales of electricity in California to come from eligible renewable energy resources and zero-carbon resources by December 31, 2045; and
- To double the energy efficiency savings in electricity and natural gas end uses by retail customers by 2030.

The Clean Energy, Jobs, and Affordability Act of 2022 (SB 1020) added interim targets for renewable energy targets for electricity sales and procurement. The renewable energy and zero-carbon energy retail sales of electricity targets to California end-use customers were set at 90 percent by 2035 and 95 percent by 2040 (CARB, 2022).

California Climate Crisis Act of 2022 (AB 1279)

AB 1279 establishes the policy of the state to achieve carbon neutrality as soon as possible, but no later than 2045; to maintain net negative GHG emissions thereafter; and to ensure that by 2045 statewide anthropogenic GHG emissions are reduced by at least 85 percent below 1990 levels. The CARB 2022 Climate Change Scoping Plan outlines how carbon neutrality can be achieved by reducing anthropogenic GHG emissions while expanding actions to capture and store carbon through California's natural and working lands and using a variety of mechanical approaches (CARB, 2022).

Cap-and-Trade Program (17 CCR 95801 to 96022)

The California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms Regulation (Cap-and-Trade Program) was initially approved by CARB in 2011. The Cap-and-Trade Program applies to covered entities that fall within certain source categories, including petroleum refiners and suppliers of transportation fuels, and is triggered when facility emissions exceed 25,000 metric tons of CO2 equivalent (MTCO2e) in a year. The covered entities must hold compliance instruments sufficient to cover the actual GHG emissions, as evidenced through the CARB's Mandatory Reporting Regulation requirements. This means that transportation fuel suppliers bear the GHG compliance obligation in the Cap-and-Trade Program for the GHG emissions from motor vehicle and off-road equipment fuels used by construction workforces and crews.

Emission Reductions of SF_6 from Gas Insulated Equipment (17 CCR 95350 to 95359)

Electric power gas insulated equipment and switchgear used in transmission and distribution systems are subject to this regulation for reducing or phasing-out SF_6 emissions and leaks. The regulation, initially adopted by CARB in 2010 and amended in 2022, requires owners of such gas-insulated equipment or

switchgear to phase out use of SF_6, maintain records and inventories of their gas-insulated equipment and capacities, and report CO2e emissions to demonstrate compliance with annual limits set by the rule.

3.10.2.3. Local Regulations, Policies and Standards

Pursuant to General Order 131-E, the Project is not subject to local authority because the CPUC has exclusive jurisdiction over the siting, design and construction of electric power line projects, distribution lines, substations, and electric facilities constructed by public utilities subject to CPUC jurisdiction. Local ordinance policies and requirements are presented here only where these requirements are used as the basis for impact analysis. San Bernardino County Regional Greenhouse Gas Reduction Plan is the only GHG reduction plan or climate action plan currently along the Proposed Project alignment.

San Bernardino County, Regional Greenhouse Gas Reduction Plan

San Bernardino County adopted a Regional GHG Reduction Plan in September 2011, which identified statewide, San Bernardino County, and local community measures to reduce GHG from new development by 2020. The plan was updated in 2019 and again in June 2021. The June 2021 GHG Reduction Plan identifies measures to reach the 2030 target of 40 percent reduction below 2020 levels. These measures target all sectors but are primarily targeted at reducing GHG caused by solid waste landfills and from the building, energy and transportation sectors (San Bernardino County, 2021). The County's development review procedures include a review standard of 3,000 MTCO2e per year for identifying actions that require project-specific technical analysis for GHG.

San Bernardino County, General Plan, Renewable Energy and Conservation Element

The Renewable Energy and Conservation Element of the San Bernardino County General Plan (San Bernardino, 2019), identifies strategies to balance renewable energy development with environmental conservation by prioritizing local benefits from renewable energy projects. It emphasizes the use of existing infrastructure including transmission lines and corridors to minimize environmental and land-use impacts.

3.10.3. Environmental Impacts of the Proposed Project

3.10.3.1. Impact Analysis Approach

All construction- and operation-related emissions are quantified based on the best available forecast of activities. For each of the activities of the Project Description, the Applicant (SCE, PEA Appendix F, 2020) developed emissions estimates within a database that draws emissions factors from the California Emissions Estimator Model (CalEEMod; version 2022.1) software developed by the California Air Pollution Control Officers Association (CAPCOA).[1] The emission factors embedded in this version of the CalEEMod software draw upon mobile source emission factors from the California Air Resources Board (CARB) OFFROAD inventory and EMFAC2014 models. The activity assumptions, emission factors, and resulting quantities of emissions appear in PEA Appendix F: Air Quality Calculations. This EIR includes Appendix 3, Air Quality, to summarize the results of the emissions estimates.

SCE did not propose Applicant Proposed Measures (APMs) related to greenhouse gas emissions, no APMs relevant to other issue areas area dressed in this section.

[1] Use of the prior desktop version (2016.3.2) of CalEEMod is acceptable in this case based on the project application filing date in April 2020; an initial online version of the CalEEMod software was launched in December 2022 (2022.1.1.3).

3.10.3.2. Impact Significance Criteria

The quantities of direct and indirect GHG emissions may be compared against the CEQA thresholds of significance for GHG emissions recommended by local air districts. For example:

- The Eastern Kern Air Pollution Control District (EKAPCD) CEQA Guidelines established a significance threshold of 25,000 tons per year of project-specific GHG, applicable to stationary source projects (EKAPCD, 2012).
- The Mojave Desert Air Quality Management District (MDAQMD) recommends that lead agencies should determine the significance of GHG emissions by evaluating whether the direct and indirect GHG emissions generated by a project exceed 100,000 tons or 90,719 metric tons (MT) of CO2e per year (MDAQMD, 2016).

The most stringent local GHG threshold is EKAPCD's 25,000 tons/year, however, this threshold is based on outdated 2009 federal rules and 2012 CARB rules which have since been superseded. As such, this analysis uses a more stringent and commonly used threshold of significance for GHG emissions of 10,000 MTCO2e per year to evaluate whether the combined effects of Project construction and operation over the lifespan of the Project would cause (direct and indirect effects) GHG emissions that may have a significant impact on the environment.

Significance Criteria

Would the Proposed Project:

- **GHG-1:** Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
- **GHG-2:** Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

3.10.3.3. Impacts and Mitigation Measures

The Cal City Options defined in Section 2.1.1 and illustrated in Figure 2-2 would have impacts no different from those defined for Impacts GHG-1 and GHG-2, because the extent of ground disturbance and equipment required for the Proposed Project would be the same as that required for any of the Cal City Options.

Impact GHG-1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

Construction

LESS THAN SIGNIFICANT. The Proposed Project would rebuild components of SCE's existing 115 kV subtransmission system that extends over 262 miles between 12 existing SCE substations across portions of three counties. The activities associated with the Proposed Project include mobilizing construction equipment, crews, and materials, and would require use of motor vehicles and off-road equipment during all construction activities and clean-up. These activities would cause GHG emissions due to fuels used by the construction vehicles and off-road equipment. The different sources include diesel-powered off-road equipment, gasoline-powered construction vehicles and equipment including on-highway trucks and autos for moving crews, equipment, materials, and water and for fuel delivery, and helicopters. Equipment, motor vehicles, and helicopters would directly emit CO_2, CH_4, and N_2O due to fuel use and combustion. Motor vehicle fuel combustion emissions in terms of CO2e are approximately 95 percent CO_2, with CH_4 and N_2O emissions occurring at rates of less than 1 percent of the mass of combustion CO2 emissions.

The resulting one-time quantity of GHG caused by construction would be 18,287 metric tons of CO2e (EIR Appendix 3, Air Quality) emitted over approximately four years, based on SCE's use of CalEEMod, as detailed in PEA Appendix F: Air Quality Calculations.

To consider the overall effect of construction GHG emissions over the anticipated useful life of the facilities, the construction GHG quantity can be amortized by averaging over an estimated 30-year life for the Proposed Project. The resultant annualized quantity of construction GHG would be 610 MTCO2e per year.

These emissions would cease at the conclusion of construction. These project-level construction-phase emissions would not exceed the most-stringent CEQA threshold of significance level of 10,000 MT per year, as adopted by the local air districts in the project area. Because the overall construction-phase GHG emissions would not exceed the annual rate of emissions considered significant by local resource agencies, Proposed Project construction GHG emissions would not occur at a level that could have a significant impact on the environment.

Operations and Maintenance

LESS THAN SIGNIFICANT. Maintenance and normal operations, including inspections of the Proposed Project components, would require use of equipment and vehicles that would use fossil fuels and create GHG emissions along the subtransmission lines. In the baseline conditions, SCE conducts operations and maintenance as necessary for routine upkeep of the existing facilities, and as needed for occasional repairs. Ongoing operations and maintenance would cause minor amounts of tailpipe GHG emissions similar to those occurring in the current conditions.

The substation modifications included with the Proposed Project include disconnection and reconnection of conductors at existing positions and using existing circuit breakers. As a result, the Proposed Project would introduce no new gas insulated equipment and would cause no change in the potential for leakage of SF_6 from existing circuit breakers or other equipment.

The Proposed Project's GHG emissions created by operations and maintenance activities would not substantially change from baseline levels. The impact of GHG emissions during operations and maintenance would be less than significant.

Mitigation Measures for Impact GHG-1

No mitigation is required.

Impact GHG-2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing greenhouse gas emissions.

LESS THAN SIGNIFICANT. Implementation of the Proposed Project would remediate physical clearance discrepancies on SCE's existing 115 kV subtransmission lines located in Inyo, Kern, and San Bernardino Counties. One objective of the Proposed Project is for SCE to improve the existing conditions by remediating the discrepancies, for SCE to continue to provide safe and reliable electrical service. Implementation of the Proposed Project would upgrade the lines and would not disrupt California's ability to increase renewable energy use or achieve statewide renewable energy goals.

California's overall strategy for achieving GHG reductions and statewide carbon neutrality is set forth by the CARB Climate Change Scoping Plan. The CARB 2022 Climate Change Scoping Plan identifies dicarbonizing the electricity sector as a crucial pillar of achieving carbon neutrality (CARB, 2022).

The renewable energy targets in the RPS support California's overall approach to achieving GHG reduction goals. The California Global Warming Solutions Act of 2006 (AB 32) and Senate Bill 32 (SB 32) of 2016 codified the GHG emissions target to 40 percent below the 1990 level by 2030. Subsequently, California's Clean Energy and Pollution Reduction Act of 2015 [Senate Bill 350 (SB 350)], SB 350 set ambitious 2030

targets for energy efficiency and renewable electricity, among other actions aimed at reducing GHG emissions across the energy and transportation sectors. SB 350 also connects long-term planning for electricity needs with the state's climate targets, with CARB establishing 2030 GHG emissions targets for the electricity sector in general (CARB, 2022).

Additionally, the Proposed Project would be consistent with San Bernardino County General Plan policy direction on promoting renewable energy, namely through the established preferences to upgrade existing transmission lines and use existing corridors where feasible.

Project activities related to both construction and operations and maintenance would emit GHG mostly through the use of transportation fuels. The majority of emissions would be from mobile sources, the off-road equipment and on-road motor vehicles, which are not directly subject to GHG controls but would be users of transportation fuels from refiners and suppliers that are required to comply with CARB's Cap-and-Trade and Low Carbon Fuel Standard regulations to reduce GHG emissions. Helicopters would use aviation fuels that are exempt from the Low Carbon Fuel Standard. Stationary source emissions of SF_6 would be subject to and required to comply with the CARB regulation for GHG from gas insulated equipment (17 CCR 95350 to 95359). Through these programs, Proposed Project activities related to construction and operations and maintenance would either be exempt from or would be required to comply with CARB rules and regulations to reduce GHG emissions and would cause no other potential conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions.

Although GHG emissions would necessarily occur during construction and operations and maintenance, implementation of the Proposed Project would resolve discrepancies to maintain adequate electric service reliability. The Proposed Project would not conflict with any applicable GHG management plan, policy, or regulation. This impact would be less than significant, and no mitigation is required.

Mitigation Measures for Impact GHG-2

No mitigation is required.

3.10.4. Mitigation Monitoring, Compliance, and Reporting

No mitigation is required for impacts related to greenhouse gas emissions.

3.10.5. References

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3.11. Hazards and Hazardous Materials

This section describes existing environmental conditions and anticipated impacts associated with the Proposed Project for Hazards and Hazardous Materials. Impacts evaluated in this section include physical hazards and hazardous materials, including environmental contamination that would be caused by implementation of the Proposed Project. The following discussion addresses existing environmental conditions in the affected area, identifies and analyzes environmental impacts for the Proposed Project, and recommends measures to reduce or avoid significant impacts anticipated from Project construction, operations, and maintenance. In addition, existing laws and regulations relevant to hazards and hazardous materials are described. In some cases, compliance with these existing laws and regulations would serve to reduce or avoid certain impacts that might otherwise occur with the implementation of the Proposed Project.

The study area for hazards and hazardous materials is defined as the Proposed Project site. The study area for effects of existing contamination and is defined as the area within 0.5 mile of Proposed Project components. The existing hazards, hazardous material use, and level of contamination in the area and at the Project site were used as the baseline against which to compare potential hazards and hazardous materials-related impacts of the Proposed Project.

This section also describes certain effects that are unique to public safety in the vicinity of electrical transmission, including electrical interference and hazards. Please see EIR Section 2.7 for information on electric and magnetic fields (EMF).

Hazardous Materials Used and Generated during Proposed Project Construction and Operation

The Proposed Project would involve limited transport, storage, use, and disposal of hazardous materials during construction. Some examples of hazardous materials handling during construction would include the transport of fuels, lubricating fluids, and solvents associated with construction equipment, as well as the transport of potentially contaminated soils excavated from the Project site. All hazardous materials would be stored, handled, and used in accordance with applicable regulations. Safety Data Sheets would be made available at the construction site for all crew workers. Spills and leaks of hazardous materials during construction activities could result in soil or groundwater contamination.

Construction of the Proposed Project would result in generation of various waste materials, including material from existing infrastructure that would be removed as part of the Proposed Project (e.g., conductor, steel, concrete, wood, excess soil, and debris). This material would be temporarily stored in one or more staging yards as the material awaits salvage, recycling, and/or disposal; any material deemed hazardous waste would need to be properly disposed of per State or federal regulations. Sanitation waste (i.e., human generated waste) from portable toilets would be disposed of in accordance with applicable sanitation waste management practices.

The existing wood poles removed for the Proposed Project would be returned to a staging yard, and either reused, returned to the manufacturer, disposed of in a Class I hazardous waste landfill, and/or disposed of in the lined portion of a Regional Water Quality Control Board (RWQCB)-certified landfill. Drilling muds would be disposed of off-site at an appropriately licensed waste facility. Material excavated for the Proposed Project would either be used as fill, backfill for replacement TSPs or LWS poles or other excavations, and/or disposed of off-site at an appropriately licensed waste facility. If contaminated material is encountered during excavation, work would stop at that location, and the Project Spill Response Coordinator would be called to the site to make an assessment and notify the proper authorities.

Soil excavated from a site containing hazardous materials would be considered to be a hazardous waste if it exceeds specific CCR Title 22 criteria, or on federal lands, if it exceeded criteria defined in CERCLA or other relevant federal regulations. The Lahontan Regional Water Quality Control Board (RWQCB) regulates groundwater dewatering in the project area. Groundwater that exceeds current State or federal water quality standards would need to be treated before disposal or collected to be disposed of at an approved

facility. Groundwater and soil that exceed Title 22 or CERCLA criteria, and are classified as hazardous waste, would need to be disposed of at an appropriate treatment facility or disposal site. Even if soils or groundwater at a contaminated site do not have the characteristics required to be defined as hazardous wastes, remediation of the site may be required by regulatory agencies subject to jurisdictional authority. Cleanup requirements are determined on a case-by-case basis by the agency taking lead jurisdiction.

The environmental setting for Hazards and Hazardous Materials is presented in Section 3.11.1 and relevant regulations and standards are summarized in Section 3.11.2. Section 3.11.3 describes the impacts on the environment associated with implementation of the Proposed Project. These impact discussions introduce mitigation measures that would reduce or avoid significant adverse environmental impacts. Section 3.11.4 presents the mitigation monitoring, compliance, and reporting information, and Section 3.11.5 lists references cited in this section. Chapter 4 describes the environmental impacts of the alternatives to the Proposed Project; cumulative impacts are addressed in Chapter 5.

There were no comments received during the scoping period that addressed hazards and hazardous materials related impacts.

3.11.1. Environmental Setting

3.11.1.1. Regional Setting

This section addresses the environmental setting and approach to data collection related to the construction and operation of the Proposed Project in relation to the issues of environmental contamination and hazardous materials. Sites with known and potential contamination along or near the Proposed Project transmission line segments were researched to better define the areas where hazardous material storage and use may have occurred, or where potential environmental contamination may exist that might be impacted by construction activities. The primary reason to define potentially hazardous sites is to protect worker health and safety and to minimize public exposure to hazardous materials during construction and waste handling.

The southern portion of Segment 1 roughly parallels the southwest border of the Department of Defense (DoD) China Lake Naval Airforce Weapons Station (CLNAWS) for approximately 18 miles and crosses associated lands in multiple locations. Segments 2, 3N, and 3S converge at Kramer Substation located at the northeast corner of Edwards Air Force Base (AFB), and Segment 3S crosses a small portion of the AFB land southeast of the substation. East of Barstow, Segments 3N and 3S converge at Coolwater Substation located roughly 1 mile south of the Barstow Marine Core Logistics Base (MCLB) Yermo Annex and roughly 3 miles east of the Nebo Annex; Segment 3 crosses roughly 3 miles of the firing range associated with the Nebo Annex.

3.11.1.2. Land Use

Existing and past land use activities are potential indicators of hazardous material storage and use. For example, many current and historic industrial and defense sites have soil or groundwater contamination by hazardous substances. Other hazardous materials sources include leaking underground tanks in commercial and rural areas, contaminated surface runoff from polluted sites, and contaminated groundwater plumes that may exist along the transmission line route. Current and former agricultural properties also commonly have herbicide, pesticide, and/or fumigant soil contamination.

The proposed route traverses primarily through undeveloped open-space and rural lands, with scattered residential uses. Most of the land in the Proposed Project alignment is open space under federal jurisdiction, including lands under the jurisdiction of the Bureau of Land Management (BLM), Bureau of Indian Affairs (BIA), and DoD. Other lands traversed by the Project include State, County, LADWP, and private land. Military facilities are located adjacent to Segments 1, 2, and 3S and adjacent to Inyokern Substation and Coolwater Substations. Portions of the alignment are located on lands managed by the

BLM, BIA, DoD (China Lake Naval Air Weapons Station, Edwards Air Force Base, Marine Corps Logistics Base-Barstow), and California State Lands Commission. Past land uses along or adjacent to the Proposed Project alignment included primarily open space, with military uses, hardrock mining, mineral prospecting and processing, and agriculture.

Hazardous Materials Sites

Regulatory databases compiled by Environmental Data Resources, Inc. (EDR) were reviewed and documented in the PEA (SCE, 2020). The EDR database searched federal, State, and local environmental databases for sites that use, store, and/or dispose of hazardous materials and for sites with known environmental contamination in a corridor 0.5-mile either side of the Proposed Project alignment. One record was found that indicates that a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) site, the Rand Historic Mining Complex, is present within or adjacent to the Proposed Project route. Other than this site, there are no other known active hazardous waste sites on or within 1,000 feet of the Proposed Project areas. Online databases reviewed are as follows:

- California State Water Resources Control Board (SWRCB) Geotracker database (SWRCB, 2025)
- California Department of Toxic Substance Control (DTSC) Envirostor databases (DTSC, 2025)

Table 3.11-1 defines the hazardous material sites located within 0.5 miles of the Proposed Project and its construction area.

Table 3.11-1. Hazardous Material Sites within 0.5-Mile of the Proposed Project

Site	Cleanup Status	Description	Databases	Closest Distance to Proposed Project (Miles/ Direction)	Nearest Project Component
Jorgensen Reduction Plant	Inactive-DTSC Site	Downgradient. A tungsten ore processing mill was operated at the site from the 1940s to the 1950s. The site received ore from surrounding tungsten mines for processing. The foundation still exists and is owned by the LADWP. DoD documents state site is not a qualified FUDS site.	Envirostor	0 (adjacent to alignment)	Segment 1, Yard 1-3
Big Pine County Yard	Completed – Case Closed as of 7/28/1992 Leaking UST	Upgradient Leaking UST (diesel). Groundwater was monitored until July 1992, after which the case was closed.	Geotracker	0.4-mile NE	Segment 1
American Perlite	Completed-Case Closed as of 9/15/2009 Leaking UST	Upgradient Leaking UST (gasoline) in December 1990. Groundwater was monitored. No documentation for site closure.	Geotracker	0.4-mile NE	Segment 1
Caltrans Olancha Maintenance	Completed - Case Closed as of 10/5/1993 Leaking UST	Upgradient Leaking UST (diesel) No site history available	Geotracker	0.16-mile NW	Yard 1-9
Inyo County Motor Pool	Completed - Case Closed as of 4/28/2006 Leaking UST	Upgradient Leaking UST (gasoline) No site history available	Geotracker	0.30-mile NW	Yard 1-9
Lee's Frontier Deli and Gas	Completed - Case Closed as of 6/9/2014 Leaking UST	Upgradient Leaking UST *(petroleum products)* Soil and groundwater contamination	Geotracker	0.02-mile W	Segment 1
PPG Industries	Open Site Assessment as of 11/6/2019 Leaking UST	Downgradient Leaking UST *(petroleum products)* Site is the former Pittsburgh Plate Glass Industries Bartlett Plant. A Phase II Site Assessment completed in 2014 indicated reported levels of TPH-GRO, TPH-DRO, ethylbenzene, toluene,	Geotracker	0.2-mile E	Segment 1

Site	Cleanup Status	Description	Databases	Closest Distance to Proposed Project (Miles/ Direction)	Nearest Project Component
		total xylenes, and naphthalene above environmental screening levels in one boring.			
Lone Pine Class III Landfill	Open – Operating as of 1/1/1965 Land Disposal Site	Upgradient Site contains an active face, hazardous waste lockers, waste oil container, ash pit, borrow pit, and 5 actively used monitoring wells (April 2019*)*. Groundwater sampled semi-annually for water quality. Groundwater contains VOCs.	Geotracker	0.2-mile W	Segment 1
Sawmill Class III Landfill	Completed Case Closed as of 4/11/2001 Land Disposal Site	Stopped receiving waste in the late 1980s. The landfill is unlined and located on a 40-acre parcel. Landfill contains inert construction debris and wood waste. Groundwater is estimated to be greater than 200 feet below ground surface.	Geotracker	0.2-mile W	Segment 1
China Lake Naval Air Weapons Station – Site 60 – B2 Spotting Tower 3 Quonset Hut	Open – Site Assessment Military Cleanup Site	Downgradient Former control tower during flight tests on the B-2 Range. An area covering approximately 4,000 square feet, which includes the foundation of the spotting tower.	Geotracker	0.1-mile E	Segment 1
Rand Historic Mining Complex	Open	Soil contamination from mining tailings consisting of arsenic and heavy metals	Envirostor	0.05-mile	Segment 2
SEGS 3-7 Three Surface Impoundments	Continued vadose and groundwater monitoring	Double-lined ponds for wastewater	GeoTracker	0.04-mile W	Segment 2
SEGS 3-7 Bioremediation unit and land farm	Cold Layup, continued monitoring	Heat transfer fluid contaminated soil undergoing bioremediation	GeoTracker	0.5-mile W	Segment 2
Luz Solar Partners VI through VII	None (active facility)	Hazardous waste generating site	Enviromapper	0.1-mile W	Segment 2
Fort Irwin Land Treatment Facility	Closed	Contaminated soil disposal site (capped)	Geotracker	0.1-mile E	Segment 3N
Oriental Mill Site	Open	Former mill suspected contaminant site (heavy metals)	Envirostor	0.5-mile E	Segment 3N
Waterloo Mill Site	Open	Former mill suspected contaminant site (heavy metals)	Envirostor	0.5-mile E	Segment 3N
Coolwater Generating Station	No Further Action	Soil contamination by above ground storage tanks; remediation completed	Envirostor	0.1-mile N	Segment 3S

Formerly Used Defense Sites (FUDS). Formerly Used Defense Sites (FUDS) are located in the Owens Valley and Mojave Desert area and in the vicinity of all segments of the Proposed Project alignment. Military munitions and explosives, principally unexploded ordnance (UXO), are known or suspected at or in the vicinity of former military sites in the Mojave Desert. Many of these sites are former bombing range sites and are known or suspected to contain military munitions and explosives of concern (MEC) or unexploded ordnance (UXO) and therefore may present explosive hazards. These types of sites may also have heavy metal contamination due to the former use of munitions. Table 3.11-2 lists the FUDS Sites within the vicinity of the Proposed Project.

Table 3.11-2. FUDS Sites in the Vicinity of the Proposed Project

FUDS Site Name	FUDS Site Description	Proximity to Project (miles)	Nearest Project Segment
Camp Manzanar	Camp Manzanar was an internment camp for Japanese American citizens during World War II from 1942-1945. Camp Manzanar consists of Manzanar Historic Site (part of	0.5-mile W	Segment1: Control-Haiwee and I-10 Yard

FUDS Site Name	FUDS Site Description	Proximity to Project (miles)	Nearest Project Segment
	the National Park System), located in an undeveloped region of Inyo County.		
Mount Whitney Military Reservation	Mount Whitney Military Reservation is approximately 84,480 acres on eastern slopes of the Sierra Nevada. Most of the site is currently part of the Sequoia National Park and the Inyo National Forest. The area is devoted primarily to resource conservation and recreational use.	0.6-mile W	Segment 1
Inyokern Airfield	The U.S. Army Air Forces used the airfield from 1943 to 1952. The U.S. Navy terminated the lease with Kern County in 1952. Kern County deeded 44.75 acres to the U.S. Navy, who currently uses the property as a well field for China Lake Naval Weapons Center. The remainder of the property was deeded to the Indian Wells Valley Airport District and is currently used as an airport known as Inyokern Airport.	0.9-mile W	Segment 1
Naval Ordinance Test Station (at Inyokern Airfield)	The Naval Ordinance Test Station (NOTS) was created to assist in activities at the Inyokern Airfield. The U.S. Navy used 1,135.28 acres as a temporary airfield known as the Naval Ordnance Test Site (NOTS) from the 24 May 1943 to 15 October 1952. Improvements by the Navy included terminals, barracks, hangar, fueling facilities including 11 underground storage tanks, and ammunition bunkers (magazines). The U.S. Navy terminated the lease with Kern County for on 15 October 1952.	0.4-mile E	Segment 1
Kramer Potash Plant	Kramer Potash Plant is an inactive DTSC-listed and FUDS site. No information was available to confirm the existence of the former Kramer Potash Plant. The site is currently inactive with no evaluation reported as of July 2005.	0.3 miles E	Segment 2
Victorville PBR N-3	BLM site totaling 640 acres formerly used as practice bombing range	0.1-mile E	Segment 3N
Marine Corps Logistics Base Barstow	Marine Corps storage site for supplies and equipment needed for the Fleet Marine Forces in the Pacific theater during World War II.	0.5-mile N	Segment 3S

Environmental Contamination

Ground disturbing activities could encounter environmental contamination if the activity is near commercial or industrial sites or military facilities with known contamination, adjacent to sites that store and use large quantities of hazardous materials, or in agricultural areas that may have used herbicides, pesticides, or fumigants. Some ground disturbing activities for the proposed project include excavation, compaction, and grading for pole and access road construction activities.

Schools

No school buildings are located within 0.25 miles of the Proposed Project Alignment in Segments 1, 2, 3N, or 3S.

Airports and Airstrips

The Lone Pine and Inyokern Airports are located approximately 0.6 and 1.4 miles west of Segment 1 of the Proposed Project. One public airport (the Barstow-Daggett Airport) is located approximately 4 miles southeast of the Coolwater Substation. The SCE Ridgecrest Service Center Heliport approximately 6 miles east of Segment 2 within Material Yard ICKI SA 1-3 East Upjohn Ave.

In addition, two military aviation installations—the China Lake Naval Air Weapons Station (CLNAWS) and Edwards Air Force Base—are located adjacent to Segments 1 and 2, respectively. Each installation has

unique flying operations, and their primary missions are to test military aircraft and weapon systems (SCE, 2020). The Proposed Project alignment is approximately 5 miles from the nearest military facility runway at the China Lake Naval Air Weapons Station.

Emergency Response and Evacuation Plans

The California Emergency Management Agency (Cal/EMA) established a Standard Emergency Management System (SEMS) to harmonize incident command, mutual aid agreements, roles, responsibilities, and training. Kern County, Inyo County, San Bernardino County, and the City of Barstow each have developed and implemented emergency response plans (KCFD, 2008; Inyo County, 2016; SBCFD, 2013; City of Barstow, 2015). US 395 is the only designated evacuation route crossed by the Proposed Project alignment or identified in the area. Section 3.21, Wildfire, provides more detailed information related to emergency response and evacuation plans.

Historic Mining

The Proposed Project route crosses near the community of Randsburg in Kern County. This area has been mined extensively for gold and silver starting in the late 1800s and is now designated as a historical landmark (California Office of Historic Preservation, 1981). Numerous historic and semi-active mining sites are identified in USGS and DOC data sources, many of which are mines that are no longer active and undergoing reclamation, as required by state and federal laws. The Rand Historic Mining Complex, comprised of multiple mines, occupies the region comprised of the communities of Randsburg, Red Mountain, and Johannesburg where US 395 crosses the shared border of Kern and San Bernardino counties. The site encompasses an approximately 1,300-acre area and includes the state classified Mineral Resource Zones (MRZs; 2a and 2b) as identified in Table 3.14-2. Segment 2 of the Proposed Project crosses through the Rand Historic Mining Complex and between two substantial terraced mining pits, the closest of which is within approximately 300 feet from the existing subtransmission line and has a depth of approximately 350 feet.

The primary sources of contamination in the District include waste rock and tailings[1] piles resulting from the historic mining operations. Secondary sources of contamination include tailings that have migrated into the washes or have been transported out of the primary source areas by wind or water. Investigations have indicated presence of environmental contamination in the Complex, including levels of antimony, arsenic, chromium, cobalt, iron, manganese, and mercury exceeding both background concentrations and the EPA Regional Screening Levels (EPA, 2025).

As a result, therefore, the BLM is undertaking response actions under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA or Superfund). (BLM, 2025). The BLM is currently undergoing cleanup activities at the mine locations. In addition to the remedial activities, the BLM is fencing areas with hazardous mine features and tailings piles, monitoring air quality, providing signage to restrict off-highway vehicle uses, and notifying and educating the public. (BLM, 2007)

Valley Fever

Valley Fever (coccidioidomycosis or “cocci”) is an illness caused by the inhalation of soil-dwelling Coccidioides fungus spores. The Coccidioides fungus lives in the top 2 to 12 inches of soil and dirt in many parts of California; it is most prevalent in the Central Valley and in desert/dry areas (CDPH, 2013). When soil containing this fungus is disturbed by activities such as digging, vehicles, or by the wind, the fungal spores become airborne and can be inhaled. Valley Fever is not transmitted from person to person.

Valley Fever can be serious and even fatal. Many people exposed to the Coccidioides fungus spores exhibit no symptoms, while others may have cold or flu-like symptoms that usually go away on their own after

[1] Mining tailings are the waste materials left over after the extraction of minerals from ore, consisting primarily of finely ground rock, water, and processing chemicals.

several weeks to months. It is likely that numerous mild cases of Valley Fever go undiagnosed. It usually infects the lungs and can cause flu-like symptoms or pneumonia. Some people may require hospitalization. In rare cases, the infection can spread beyond the lungs to other parts of the body (this is called disseminated Valley fever) (CDPH, 2020b).

Valley Fever is considered endemic in California, with cases in the state increasing from less than 1000 cases in 2000 to more than 9000 cases in 2019 (CDPH, 2020a, 2020c). According to the California Department of Public Health (CDPH) the number of reported incidences of Valley Fever in California in 2019 is the highest since coccidioidomycosis became individually reportable in 1995. There were 9004 cases reported in 2019, with an incidence rate of 22.5 cases per 100,000 population. This is a 159 percent increase from 2013 (CDPH, 2020c). Valley Fever is highly endemic in counties where incidence rates are greater than 20 per 100,000 population. The number of incidences has significantly increased in Riverside County from 34 cases with an incidence rate of 1.5 per 100,000 in 2013 to 255 cases and an incidence rate of 10.4 per 100,000 in 2019 (CDPH, 2020c).

Recommendations to minimize potential exposure include improving worksite dust-control measures; using earth-moving equipment and trucks with high-efficiency particulate air (HEPA) filtered enclosed cabs to protect the operator; implementing and enforcing criteria for suspending work on the basis of wind and dust conditions; providing outdoor workers access to National Institute for Occupational Safety and Health–approved respiratory protection when conducting or in close proximity to soil-disturbing work, and for exposure to excessive wind-blown dust; providing clean coveralls daily to employees; encouraging workers to remove coveralls and work shoes before entering vehicles to leave the worksite; developing effective Valley Fever training for all employees that includes ways to reduce exposure, how to recognize symptoms, and where to seek care; and improving compliance by employers and their designated health care providers with reporting cases to local health jurisdictions, workers' compensation carriers, and Cal/OSHA.

Electrical Hazards and Interference

A discussion of the Proposed Project with respect to Electromagnetic fields (EMF) are addressed in detail in Section 2.7 (EMF and CPUC EMF Analysis and Mitigation Requirements). Corona, gap discharges, and audible noise from transmission lines consist of high frequency energy; however, they are transmitted at a lower power level than radio and television broadcasts. Therefore, these transmissions attenuate within a short distance from the transmission line. As such, the affected environment would be along the entire length of the transmission line, but only for a narrow width of several hundred feet on each side of the transmission line ROW. Audible noise from transmission lines is addressed in Section 3.15, Noise, and is not discussed further in this section.

Induced Currents and Shock Hazards

Power line fields can induce voltages and currents on conductive objects, such as metal roofs or buildings, metal fences, 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). 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.

Environmental Setting by Segment

The sections below provide general descriptions of the existing uses in the vicinity of the ROW as related to the potential for hazards and environmental contamination. Based on the online environmental database review described in Section 3.11.1.1, there are no known hazardous release sites located within the Proposed Project ROW in any of the four segments included in the Proposed Project ROW. However, unknown contamination could be present within the ROW due to past and current property uses in the vicinity. Electrical hazards and interference is not addressed by segment.

Segment 1: Control Substation to Inyokern Substation

Segment 1 of the Proposed Project is within unincorporated areas of Inyo County and Kern County, primarily in the Owens Valley. Most of the land in Segment 1 is open space under the jurisdiction of public agencies, including lands under the jurisdiction of the BLM and DoD, or owned by Los Angeles Department of Water and Power (LADWP). Segment 1 does not traverse commercial or industrial land use areas. Other lands traversed by the project alignment include California State Lands Commission (CSLC), California Department of Fish and Wildlife (CDFW), County and local governments, and private land.

DoD use along Segment 1 includes the China Lake Naval Air Weapons Station (CLNAWS), a military aviation installation located north of Ridgecrest and adjacent to Segment 1. Segment 1 runs from the existing Control Substation located adjacent to the City of Bishop, south to the existing Inyokern Substation near the City of Ridgecrest. Segment 1 generally follows US 395 and the alignment traverses predominantly undeveloped open space with widely scattered rural residences in the vicinity of the Proposed Project alignment. The CLNAWS is located north of Ridgecrest and adjacent to the southernmost part of Segment 1.

As shown in Table 3.11-1, four hazardous sites and two landfills were identified within 0.5 miles of Segment 1:

- An inactive tungsten ore processing facility, Jorgensen Reduction Plant (JRP), formerly operated in the 1950s was identified adjacent to the Proposed Project alignment on a parcel owned by LADWP. The foundation of the former structure currently exists, and no information is available regarding evaluation of the JRP site by DTSC as of 2005.
- Three former leaking underground storage tank (LUST) sites are noted within approximately 0.2 miles of the proposed alignment; two of the sites have been closed by the State lead agency and one remains open (former Pittsburgh Plate Glass Industries Bartlett Plant).
- The closed Sawmill Landfill (Class III non-hazardous municipal waste) and the operating Lone Pine Landfill (also a Class III municipal waste) are located within approximately 0.2 miles of the proposed alignment.
- The foundation and debris from a “Quonset hut” formerly used as a Spotting Tower for the CLNAWS is located within approximately 1,000 feet of the alignment. A site assessment has not been conducted at the former Spotting Tower site (CLNAWS, Site 60, B2 Spotting Tower) and the site is currently listed in “Open” status by the SWRCB.

Formerly Used Defense Sites

Four Formerly Used Defense Sites (FUDS) are located in the vicinity of Segment 1 of the proposed route, as summarized in Table 3.11-2: FUDS Sites in the Vicinity of Segment 1 of the Proposed Project. These sites consist of a World War II internment Camp (Camp Manzanar), an unused military reserve (Mount Whitney Military Reserve), and two parcels related to the Inyokern Airfield (Inyokern Airfield and Naval Ordnance Test Station). None of these sites are former bombing range sites and are not known or suspected to contain munitions and explosives of concern (e.g., UXO), and therefore likely do not have an explosive hazard. These types of sites may also have heavy metal contamination due to the former use of munitions or improperly treated hazardous materials.

Segment 2: Inyokern Substation to Kramer Substation

Segment 2 runs from the existing Inyokern Substation near the City of Ridgecrest to the existing Kramer Substation located adjacent to the intersection of US 395 and SR-58/Barstow-Bakersfield Highway. The Segment 2 alignment runs through BLM and private land and traverses predominantly undeveloped open space with widely scattered rural residences in the vicinity of the Proposed Project alignment.

The existing Inyokern Substation defines the northern/western terminus of Segment 2; Inyokern Substation is located approximately 6 miles west-northwest of the City of Ridgecrest at the intersection of US 395 and SR-178 in unincorporated Kern County. From Inyokern Substation, the Proposed Project alignment runs south-southeast through unincorporated Kern County to the existing Randsburg Substation (east of the unincorporated community of Randsburg) and then through unincorporated San Bernardino County to the existing Kramer Substation located adjacent to the intersection of US 395 and SR-58/Barstow-Bakersfield Highway in unincorporated San Bernardino County. The existing Kramer Substation defines the southern terminus of Segment 2. One CERCLA-listed historic mining district, one hazardous waste generating facility, and two open land disposal sites were identified within 0.5 miles of the proposed alignment, which are described below.

As previously described, the Rand Historic Mining District in Randsburg, Red Mountain and Johannesburg, where US 395 crosses the shared border of Kern and San Bernardino counties, is located in Segment 2 about 27 miles north of Kramer Substation and about 22 miles south of the Inyokern Substation. The closest mining pit is within approximately 300 feet from the existing subtransmission line and has a depth of approximately 350 feet. As mentioned, the District is undergoing response actions under CERCLA as a result of elevated concentrations of antimony, arsenic, chromium, cobalt, iron, manganese, and mercury exceeding both background concentrations and the EPA Regional Screening Levels (EPA, 2025).

A solar thermal electric generating facility (SEGS) operated by Luz Solar Partners, LLC is located adjacent to Segment 2. Three double-lined wastewater ponds (surface impoundments), and a former bioremediation unit and land farm owned and operated by SEGS are located within 0.5 miles of the alignment. The SEGS bioremediation unit and land farm stopped operation in 2018 and is currently in cold layup status. The three SEGS surface impoundments is currently being monitored. No soil or groundwater contamination has been identified in the vicinity of the Proposed Project ROW in this portion of Segment 2. Segment 2 does not traverse any other commercial or industrial land use areas. There were no other hazardous waste sites noted within 0.5 miles of the proposed alignment in Segment 2. Table 3.11-1 lists the hazardous material sites within 0.5 miles of the Proposed Project.

Formerly Used Defense Sites

One Formerly Used Defense Site (FUDS) is in the vicinity of Segment 2 of the proposed route. The Kramer Potash Plant is a FUDS and DTSC site located approximately 0.3-mile east of Segment 2. On a map circa 1941-1945 showing potential military sites, sites of potential military use, and sites of potential military importance during World War II, the Kramer Potash Plant is shown to be located near the northeast corner of the Kramer Junction. No information was available to confirm the existence of the Kramer Potash Plant. Table 3.11-2 lists the FUDS in the vicinity of the Proposed Project.

Segment 3N: Kramer Substation to Coolwater Substation

The Segment 3N alignment runs through mostly BLM and private land and traverses predominantly undeveloped open space with widely scattered rural residences in the vicinity of the Proposed Project alignment. Segment 3N runs east from the existing Kramer Substation where Segments 3N and 3S split into two west-east alignments. The northern alignment (Segment 3N) runs east through unincorporated San Bernardino County to the existing Coolwater Substation located approximately 1.5 miles east of the unincorporated community of Daggett. Segment 3N runs adjacent to several parcels owned by the DoD.

A parcel owned by the Fort Irwin Road Land Treatment Facility (LTF) is located on the Segment 3N alignment. The Fort Irwin LTF has been capped and closed per the SWRCB database. Two former mill sites, the Oriental Mill Site, and the Waterloo Mill Site, are located within approximately 0.5 miles of the proposed Segment 3N alignment. There were no active hazardous waste sites noted within 0.5 miles of the proposed alignment in Segment 3N. Table 3.11-1 lists the hazardous material sites within 0.5 miles of the Proposed Project.

Formerly Used Defense Sites

A portion of Segment 3N is located adjacent to the Victorville Precision Bombing Range (PBR) N-1. This FUD is categorized by the FUD Program as a Military Munitions Response Program site. The Defense Environmental Restoration Program for Formerly Used Defense Sites' Archives Search Report Findings document that addresses Victorville PBR N-1 states: "We found only evidence of sand-filled practice bombs. ... We found no evidence of HE bombs (i.e., fragments) or of unexploded spotting charges" (SCE, 2020). Table 3.11-2 lists the FUDS in the vicinity of Proposed Project.

Segment 3S: Kramer Substation to Tortilla Substation to Coolwater Substation

Segment 3S runs through BLM land, private land, and lands within the City of Barstow, and traverses open space with rural and suburban residences in the vicinity of the Proposed Project alignment. Segment 3S runs from the existing Kramer Substation where Segments 3N and 3S split into two west-east alignments. Segment 3S runs east through unincorporated San Bernardino County to the existing Tortilla Substation, located in the southcentral portion of the City of Barstow, and then east to the existing Coolwater Substation. The proposed alignment passes through approximately 0.5 miles of the Edwards Air Force Base and approximately 3 miles of the Barstow Marine Corps Logistics Base.

There is one Hazardous Waste Management Unit (HWMU) owned by Reliant Energy Coolwater, LLC that is "closed" status per the DTSC Envirostor database (SCE, 2020). This HWMU is located adjacent to the Coolwater Generating Station. Table 3.11-1 lists the hazardous material sites within 0.5 miles of the Proposed Project.

Formerly Used Defense Sites

A portion of Segment 3S is routed through the FUDS Marine Corps Logistics Base Barstow. The DENIX MRS inventory indicates that there is "unlimited public access" to the site and that there are no land use controls (SCE, 2020). Table 3.11-2 lists the FUDS in the vicinity of Proposed Project.

3.11.2. Applicable Regulations, Plans, and Standards

Hazardous substances are defined by federal and State regulations to protect public human health and the environment. Hazardous materials have certain chemical, physical, or infectious properties that cause them to be considered hazardous. Hazardous substances are defined in CERCLA Section 101(14), and in the California Code of Regulations (CCR), Title 22, Chapter 11, Article 2, Section 66261, which provides the following definition:

> A hazardous material is a substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of, or otherwise managed.

For this analysis, soil that would be excavated from a site containing hazardous materials would be considered a hazardous waste if it exceeds specific CCR Title 22 criteria, or on federal lands, if it exceeded criteria defined in CERCLA or other relevant federal regulations. Remediation (cleanup and safe removal/ disposal) of hazardous wastes found at a site is required if excavation of these materials would be performed; it may also be required if certain other activities are proposed. Even if soils or groundwater at a contaminated site do not have the characteristics required to be defined as hazardous wastes, remediation of the site may be required by regulatory agencies subject to jurisdictional authority. Cleanup requirements are determined on a case-by-case basis by the agency taking lead jurisdiction.

Federal

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, was enacted by Congress on December 11, 1980. This law provided broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA established requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for releases of hazardous waste at these sites, and established a trust fund to provide for cleanup when no responsible party could be identified. CERCLA also enabled the revision of the National Contingency Plan (NCP). The NCP provided the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, and/or contaminants. The NCP also established the National Priorities List (NPL). CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) on October 17, 1986.

Clean Water Act (CWA)

The Federal Clean Water Act (CWA) is the principal Federal statute protecting navigable waters and adjoining shorelines from pollution. The law was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. Since its enactment, the CWA has formed the foundation for regulations detailing specific requirements for pollution prevention and response measures. The United States Environmental Protection Agency (EPA) implements provisions of the CWA through a variety of regulations, including the National Contingency Plan (NCP) and the Oil Pollution and Prevention Regulations. Implementation of the CWA is the responsibility of each state.

Toxic Substances Control Act (TSCA) and the Resource Conservation and Recovery Act (RCRA)

The Federal Toxic Substances Control Act (1976) and the Resource Conservation and Recovery Act of 1976 (RCRA) established a program administered by the U.S. Environmental Protection Agency (EPA) for the regulation of the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the Hazardous and Solid Waste Act (HSWA), which affirmed and extended the "cradle to grave" system of regulating hazardous wastes. The use of certain techniques for the disposal of some hazardous wastes was specifically prohibited by HSWA.

The Toxic Substances Control Act of 1976 (15 U.S.C. § 2601 et seq.) was enacted by Congress to give the EPA the ability to track the 75,000 industrial chemicals currently produced or imported into the United States. The EPA repeatedly screens these chemicals and can require reporting or testing of those that may pose an environmental human-health hazard. It can ban the manufacture and import of those chemicals that pose an unreasonable risk.

RCRA (40 CFR Parts 239–282), which amended the Solid Waste Disposal Act (42 U.S.C. Section 6901 et seq.), establishes a framework for the proper management of hazardous and nonhazardous solid waste. This act, along with the Toxic Substances Control Act of 1976, enacted a program administered by the EPA for the regulation of the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the Hazardous and Solid Waste Act (HSWA), which affirmed and extended the "cradle to grave" system of regulating hazardous wastes from their creation to disposal. The use of certain techniques for the disposal of some hazardous wastes was specifically prohibited by the HSWA. RCRA focuses on active and future facilities; it does not address abandoned or historical sites, which are managed under CERCLA.

In 1992 the EPA authorized the Department of Toxic Substances Control (DTSC) to implement the RCRA program in California.

Oil Pollution and Prevention Regulation

The goal of the oil pollution prevention regulation in 40 CFR Part 112 is to prevent oil discharges from reaching navigable waters of the U.S. or adjoining shorelines. The rule was also written to ensure effective responses to oil discharges. The rule further specifies that proactive, and not passive, measures be used to respond to oil discharges. The oil pollution regulation contains two major types of requirements: prevention requirements (Spill Prevention Countermeasures, and Control Rule [SPCC Rule]) and Facility Response Plan (FRP) requirements. The SPCC rule requires facilities that could reasonably be expected to discharge oil in quantities that may be harmful into navigable waters to develop and implement SPCC plans. The EPA amended the SPCC Rule in 2006 to extend the SPCC compliance dates in Sections 112.3(a), (b), and (c) for all facilities until October 31, 2007. SPCC plans must be prepared, certified (by a pro-fessional engineer), and implemented by facilities that store, process, transfer, distribute, use, drill, produce, or refine oil or oil production.

Hazard Management and Resource Restoration Program

The Hazard Management and Resource Restoration (HMRR) program is administered by the BLM. Its mission is to protect lives, resources, and property, and to improve the health of landscapes and watersheds by minimizing the environmental contamination on public lands; reducing and eliminating risk associated with physical and environmental hazards; restoring resources affected by oil discharges and hazardous release; and administering CERCLA assessments.

Electrical Hazards and Interference

Radio/TV/Communications/Electronic Equipment Interference

There are no federal regulations with specific numerical limits on high frequency emissions from electric power facilities. Federal Communication Commission (FCC) regulations require that transmission lines be operated so that no harmful communication systems interference is produced (FCC regulations).

Induced Currents and Shock Hazards

The National Electrical Safety Code (NESC) specifies that transmission lines be designed to limit the power line field strength at ground level such that the short circuit current from vehicles or large objects near the line will be no more than 5 milliampere (mA). This requirement serves to limit the magnitude of electrical shock that the public could encounter from induced currents on large ungrounded metal objects in the vicinity of transmission lines. Although the NESC is titled as a “National” code it is intended as a guide standard and does not constitute a regulation unless it is adopted and codified by state or municipal governments. In the case of California, the CPUC has issued General Order No. 95 (G.O. 95), Rules for Overhead Electric Line Construction, as the relevant standard for transmission lines.

State

California Public Utility Commission Guidelines

Induced Currents and Shock Hazards. Overhead transmission lines must meet the requirements of the CPUC, General Order No. 95, Rules for Overhead Electric Line Construction. This design code addresses shock hazards to the public by providing guidelines on minimum clearances to be maintained for practical safeguarding of persons during the installation, operation, or maintenance of overhead trans-mission lines and their associated equipment.

California Environmental Protection Agency (Cal-EPA)

The Cal-EPA was created in 1991. It centralized California’s environmental authority, consolidating Air Resources Board (ARB), State Water Resources Control Board (SWRCB), Integrated Waste Management Board (IWMB), Department of Toxic Substance Control (DTSC), Office of Environmental Health Hazard

Assessment (OEHHA), and Department of Pesticide Regulation (DPR) under one agency. These agencies were placed within the Cal-EPA "umbrella" to create a cabinet-level advocate for the protection of human health and the environment and to ensure the coordinated deployment of State resources. Its mission is to restore, protect and enhance the environment, and to ensure public health, environmental quality, and economic vitality. The DPR, DTSC, IWMB, and SWRCB regulate hazardous materials and hazardous waste that have the potential to cause soil, water, and groundwater contamination, and their missions are summarized below.

- **Department of Pesticide Regulation.** The Department of Pesticide Regulation has the primary responsibility for regulating all aspects of pesticide sales and use in order to protect the public health and the environment. The Department's mission is to evaluate and mitigate impacts of pesticide use, maintain the safety of the pesticide workplace, ensure product effectiveness, and encourage the development and use of reduced risk pest control practices while recognizing the need for pest management in a healthy economy.
- **Department of Toxic Substances Control.** The DTSC mission is to restore, protect, and enhance the environment, and to ensure public health, environmental quality and economic vitality by regulating hazardous waste, conducting and overseeing cleanups, and developing and promoting pollution prevention.
- **Integrated Waste Management Board.** The mission of the IWMB is to protect the public health and safety and the environment through waste prevention, waste diversion, and safe waste processing and disposal.
- **State Water Resources Control Board.** The SWRCB mission is to preserve and enhance the quality of California's water resources, and to ensure their proper allocation and efficient use for the benefit of present and future generations.

Department of Toxic Substances Control (DTSC)

The Department of Toxic Substances Control (DTSC) is a department of Cal-EPA and is the primary agency in California that regulates hazardous waste, cleans up existing contamination, and looks for ways to reduce the hazardous waste produced in California. DTSC regulates hazardous waste in California primarily under the authority of the federal Resource Conservation and Recovery Act of 1976 (RCRA) and, the California Health and Safety Code, primarily Division 20, Chapters 6.5 through 10.6, and Title 22 (Social Security), Division 4.5. Other laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

Government Code §65962.5 (commonly referred to as the Cortese List) includes DTSC-listed hazardous waste facilities and sites, California Department of Public Health (CDPH) lists of contaminated drinking water wells, sites listed by the SWRCB as having UST leaks and which have had a discharge of hazardous wastes or materials into the water or groundwater and lists form local regulatory agencies of sites that have had a known migration of hazardous waste/material.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (California Water Code § 13000 et seq.) is a State law that provides a comprehensive water quality management system for the protection of California waters. This law designated the State Water Resources Control Board (SWRCB) as the ultimate authority over State water rights and water quality policy and established nine Regional Water Quality Control Boards (RWQCBs) to oversee water quality on a day-to-day basis at the local/regional level. The RWQCBs have the responsibility of granting National Pollutant Discharge Elimination System (NPDES) permits for stormwater runoff from construction sites.

California Office of Emergency Services (OES)

In order to protect the public health and safety and the environment, the OES is in charge of establishing and managing statewide standards for business and area plans relating to the handling and release or threatened release of hazardous materials. Basic information on the location, type, quantity, and the health risks of hazardous materials handled, used, stored, or disposed of in the state, which could be accidentally released into the environment, needs to be available to firefighters, health officials, planners, public safety officers, health care providers, regulatory agencies, and other interested parties. The information provided by business and area plans is necessary in order to prevent or mitigate the damage to the health and safety of persons and the environment from the release or threatened release of hazardous materials into the workplace and environment. These regulations are covered under Chapter 6.95 of the California Health and Safety Code Article 1 – Hazardous Materials Release Response and Inventory Program (Sections 25500 25520) and Article 2 – Hazardous Materials Management (Sections 25531 25543.3).

CCR Title 19, Public Safety, Division 2, Office of Emergency Services, Chapter 4 – Hazardous Material Release Reporting, Inventory, And Response Plans, Article 4 (Minimum Standards for Business Plans) establishes minimum statewide standards for Hazardous Materials Business Plans (HMBPs). These plans shall include the following: (1) a hazardous material inventory in accordance with Sections 2729.2–2729.7; (2) emergency response plans and procedures in accordance with Section 2731; and (3) training program information in accordance with Section 2732. Business plans contain basic information on the location, type, quantity, and health risks of hazardous materials stored, used, or disposed of in the state. Each business shall prepare a HMBP if that business uses, handles, or stores a hazardous material or an extremely hazardous material in quantities greater than or equal to the following:

- 500 pounds of a solid substance
- 55 gallons of a liquid
- 200 cubic feet of compressed gas
- hazardous compressed gas in any amount
- hazardous waste in any quantity

California Occupational Safety and Health Administration (Cal-OSHA)

The California Occupational Safety and Health Administration (Cal-OSHA) is the primary agency responsible for worker safety in the handling and use of chemicals in the workplace. Cal-OSHA standards are generally more stringent than federal regulations. The employer is required to monitor worker exposure to listed hazardous substances and notify workers of exposure (Title 8, Code of California Regulations [CCR], Sections 337 340). The regulations specify requirements for employee training, availability of safety equipment, accident-prevention programs, and hazardous substance exposure warnings.

Title 8 CCR, Chapter 4, Subchapter 7, Group 14 and 15, and Group 16, Articles 107, 109, and 110 sets forth the Permissible exposure limit (PEL), the exposure, inhalation or dermal permissible exposure limit for numerous chemicals. Included are chemicals, mixture of chemicals, or pathogens for which there is statistically significant evidence, based on at least one study conducted in accordance with established scientific principles, that acute or chronic health effects may occur in exposed employees.

It is the responsibility of the Cal-OSHA to ensure compliance with the provisions of the Hazard Communication Standard. California Labor Code Sections 6360 through 6399.7 and Title 8 California Code of Regulations Sections 5191 and 5194 are intended to ensure that both employers and employees understand how to identify potentially hazardous substances in the workplace, understand the health hazards associated with these chemicals, and follow safe work practices. This is accomplished by preparation of a Hazard Communication Plan.

Office of Environmental Health Hazard Assessment (OEHHA)

Proposition 65, the Safe Drinking Water and Toxic Enforcement Act of 1986, was enacted as a ballot initiative in November 1986. The Proposition was intended by its authors to protect California citizens and the State's drinking water sources from chemicals known to cause cancer, birth defects, or other reproductive harm, and to inform citizens about exposures to such chemicals. Proposition 65 requires the Governor to publish, at least annually, a list of chemicals known to the State to cause cancer or reproductive toxicity. OEHHA has established safe harbor levels (levels of exposure that trigger the warning requirement) for some, but not all, listed chemicals. Businesses that cause exposures greater than the safe harbor level must provide Proposition 65 warnings.

These safe harbor levels are defined on the OEHHA website (OEHHA, 2024). If there is no safe harbor level for a chemical, businesses that knowingly expose individuals to that chemical would generally be required to provide a Proposition 65 warning, unless the business could show that risks of cancer or reproductive harm resulting from the exposure would be below levels specified in Proposition 65 and its accompanying regulations.

Local Regulations, Plans, and Standards

Certified Unified Program Agencies

The Certified Unified Program Agency (CUPA) is the agency certified by the DTSC to conduct the Unified Program at the local level. 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 CUPAs included in the Proposed Project for each County are discussed below.

Inyo County. The Inyo County Environmental Health Department, Hazardous Materials Program, is the CUPA responsible for administering the hazardous materials program within Inyo County. The Inyo County and City of Bishop Multi-Jurisdictional Hazard Mitigation Plan establishes a strategy for Inyo County to reduce hazard impacts.

San Bernardino County. The San Bernardino County Fire Department, Hazardous Materials Division, is the CUPA responsible for administering the hazardous materials program within San Bernardino County. As a CUPA, the San Bernardino Fire Department manages six hazardous materials and hazardous waste programs. The CUPA is charged with the responsibility of conducting compliance inspections for over 7,000 regulated facilities in San Bernardino County (SBCFD, 2013).

Kern County. The Kern County Environmental Health Services (EHS) Department, Hazardous and Solid Waste Division is the CUPA responsible for administering the hazardous materials program within the Kern County. The EHS Department, oversees businesses generating, storing, and transporting hazardous waste to protect the public health and the environment.

3.11.3. Environmental Impacts of the Proposed Project

This section presents discussion of impacts and mitigation measures for Proposed Project related to hazardous material handling and storage, accidental spills, and encountering known and unknown pre-existing soil contamination. Construction impacts and operational impacts are addressed.

3.11.3.1. Approach to Impact Assessment

The principal environmental impact involving hazards and hazardous materials associated with the Proposed Project would relate to the potential mobilization of contaminants resulting in exposure of workers and the public (e.g., excavation and handling of contaminated soil). Hazardous materials in the construction area may require special handling as toxic substances and hazardous waste can create an exposure risk to workers and the public due to spills or upset or from excavation and transport.

Toxic substances may cause short-term or long-lasting health effects. For example, toxic substances can cause eye or skin irritation, disorientation, headache, nausea, allergic reactions, acute poisoning, chronic illness, or other adverse health effects if human exposure exceeds certain levels (the level depends on the substance involved). Carcinogens (substances known to cause cancer) are a special class of toxic substances. Examples of toxic substances include most heavy metals, pesticides, and benzene (a carcinogenic component of gasoline). Ignitable substances are hazardous because of their flammable properties. Gasoline, hexane, and natural gas are examples of ignitable substances. Corrosive substances are chemically active and can damage other materials or cause severe burns upon contact. Examples include strong acids and bases such as sulfuric (battery) acid or lye. Reactive substances may cause explosions or generate gases or fumes. Explosives, pressurized canisters, and pure sodium metal (which reacts violently with water) are examples of reactive materials.

Soil that is excavated from a site would be a hazardous waste if it exceeds specific legal criteria. Remediation (cleanup and safe removal/disposal) of hazardous wastes found at a site is required if excavation of these materials is performed. Contaminated soil exceeding regulatory limits for construction backfill would require onsite treatment or transport to offsite facilities for processing or disposal. Contaminated soil removed from the construction area must be transported according to State and federal regulations and be replaced by imported soil approved for backfill. Similar issues pertain to contaminated groundwater. Even if soil or groundwater at a contaminated site does not have the characteristics required to be defined as hazardous wastes, remediation of the site may be required by regulatory agencies with jurisdictional authority. Cleanup requirements would be determined on a case-by-case basis by the agency taking lead jurisdiction.

Although no known contaminated sites with potential to impact the Project were identified in this review, it is possible that previously unknown contaminated sites could be discovered during construction of the Project. Soil contamination may exist in the agricultural, commercial, light industrial, mining, and military land use areas within the Proposed Project area due to offsite migration of pollutants, unauthorized dumping, and historic or unreported hazardous materials spills or releases.

The impact assessment for electrical interference and hazards was conducted through a review of the change in power line field strength in the environment that would occur due to the construction and operation of the Project. Within the ROW, the proposed transmission line would be the predominant source of electrical interference and hazards. Further, the area within the transmission line ROW is within the control of SCE with regard to development land use restrictions and public access. In areas outside of the ROW, and as the distance from the transmission line increases, there may be other sources of electrical interference and hazards not associated with the Project that affect the level of electrical interference. Therefore, the edge of the transmission line ROW was adopted as the point of reference for assessing.

Project impacts with respect to electrical interference, cardiac pacemakers, and induced currents are also addressed in this section. Impacts related to wildfire are addressed in Section 3.21.

Applicant Proposed Measures

The Applicant proposed to implement two Applicant Proposed Measures (APMs) pertaining to hazards and hazardous materials to ensure the Proposed Project would be constructed and operated with minimal environmental impacts in a manner consistent with applicable rules and regulations. Implementation of these APMs is considered part of the Proposed Project for purposes of the evaluation of environmental impacts. The APMs related to hazards and hazardous materials are presented in Table 3.11-3. SCE proposed no APMs related to electrical interference and hazards.

Table 3.11-3. Applicant Proposed Measures – Hazards and Hazardous Materials

APM	Description
Hazards and Hazardous Materials	
APM HAZ-1	**Prepare a Hazardous Materials Management Plan.** SCE will prepare and implement a Hazardous Materials Management Plan (HMMP)/Hazardous Materials Business Plan (HMBP) during project construction. The plan 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, PPE training, and release reporting requirements. It will also include fueling and maintenance procedures for helicopters and construction equipment. If on site refueling is necessary, BMPs shall be implemented in accordance with the project SWPPP. Refueling stations and fuel tanks will be located, maintained, and operated during construction in accordance with applicable laws and regulations pertaining to hazardous materials. If more than 1,320 gallons of petroleum products in containers greater than 55-gallons, a SPCC plan must be created prior to products being brought on-site. All construction personnel, including environmental monitors, will be made aware of state and federal emergency response reporting guidelines for accidental spills.
APM HAZ-2	**Prepare a Soil Management Plan.** 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. The Soil Management Plan will direct that during grading or excavation work, the construction contractor shall observe the exposed soil for visual evidence of contamination. If visual contamination indicators are observed during construction, potentially contaminated soil will be segregated, sampled, and tested to determine appropriate treatment and disposal options. Work in the area of the potentially contaminated soil will be stopped until appropriate measures are determined based on the testing results and are taken to protect human health and the environment. If the soil is classified as hazardous, it will be properly managed on location and transported in accordance with the 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. If potentially-contaminated groundwater is encountered, then groundwater samples will be collected and tested to determine appropriate treatment and disposal. Hazardous materials will be transported, used, and disposed of in accordance with applicable rules, regulations, and SCE standard protocols designed to protect the environment, workers, and the public.
APM HAZ-3	**Prepare and Implement a Fire Prevention and Emergency Response Plan.** A Fire Prevention and Emergency Response Plan will be developed to ensure the health and safety of construction workers, SCE personnel, and the public during Project construction. The Plan shall cover: ■ The purpose and applicability of the plan ■ Responsibilities and duties ■ Project areas where the plan applies ■ Procedures for incorporating Red Flag Warnings, Fire Potential Index (FPI), Project Activity Level (PAL), and equivalent indicators in determining fire weather related work restrictions ■ Procedures for fire reporting, response, prevention, and evacuation routes ■ Coordination procedures with federal and local fire officials ■ Crew training, including fire safety practices and restrictions ■ Fire suppression and communication equipment required to be on hand during construction ■ Method for verification that Plan protocols and requirements are being followed ■ Post-construction fire prevention and response measures The Project-specific Fire Prevention and Emergency Response Plan for construction of the project will be prepared by SCE and submitted to CPUC, BLM, CALFIRE, Inyo, Kern and San Bernardino counties, and local municipal fire agencies for review at least 30 days prior to initiation of construction. SCE will address all comments received from reviewing agencies and provide the final Fire Prevention and Emergency Response Plan to reviewing agencies for approval prior to initiating construction activities.

3.11.3.2. Impact Significance Criteria

Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.) provides guidance on assessing whether a project would have significant impacts on the environment. Following is the Appendix G list of potential impacts. Those evaluated in this EIR show the EIR impact number in brackets. The Proposed Project would have significant hazards and hazardous materials impacts if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials [**Impact HH-1**].
- Create a significant risk to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials [**Impact HH-2**].
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school [Does not occur].
- 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 HH-3**]
- For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area [**Impact HH-5**].
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan [See EIR Section 3.17, Public Services].
- Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires [see EIR Section 3.21, Wildfire].

Item (c) would not apply to this analysis because there are no schools within one-quarter mile of the Proposed Project. Item (g) related to wildfire is addressed in Section 3.21. The other Appendix G significance criteria and associated impacts and mitigation measures are addressed below as applicable to the Proposed Project.

This EIR also evaluates whether there is the potential for Proposed Project construction or operation to:

- Create a hazard to the public or the environment through mobilization of contaminants or hazards, including pesticides, herbicides, and Valley Fever spores [**Impact HH-4**].
- Create a hazard to the public or workers due to discovery of military munitions and unexploded ordnance [**Impact HH-6**].

The Environmental Checklist Form in Appendix G of the State CEQA Guidelines does not provide any significance criteria related to electrical hazards and interference. CEQA significance determinations for electrical interference and safety are made based on reasonably assumed potential impacts, as described below. For purposes of the CEQA analysis for this Project, an impact would be considered significant and require additional mitigation if Project construction or if maintenance of Project facilities during Project operations would:

- Expose workers or the public to excessive induced currents or shock hazards [**Impact HH-7**].

3.11.3.3. Impacts and Mitigation Measures: Hazards and Hazardous Materials

This section presents discussion of impacts and mitigation measures for all four Project segments together, not divided by segment. The Cal City Options defined in Section 2.1.1 and illustrated in Figure 2-2 would have impacts no different from those defined for Impacts HH-1 through HH-7, because the extent of ground disturbance required for the Proposed Project would be the same as that required for any of the Cal City Options. No hazards have been identified in this portion of Segment 2.

Impact HH-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

Construction and Operations and Maintenance

LESS THAN SIGNIFICANT. Construction and operations and maintenance activities associated with the Proposed Project would use hazardous materials such as gasoline, diesel fuel, oil, and lubricants associated with construction equipment and vehicles and would use and store hazardous materials such as mineral oil, cleaning solvents, paints, adhesives, vehicle fuels, oil, hydraulic fluid, and other vehicle and equipment maintenance fluids in the construction staging yards. Routine maintenance and refueling of construction equipment would be conducted at the staging yards. Refueling of helicopters would likely occur at the airports out of which they are based; however, refueling may also occur at staging and material yard sites. Fueling and maintenance trucks may also be based in the helicopter staging yards.

The PEA states that a Hazardous Materials Management Plan (HMMP) would be prepared, as described in APM HAZ-1 (see Table 3.11-3) (SCE, 2020). As defined in this APM, the HMMP will include all hazardous material use, storage, transport, disposal and fueling and maintenance procedures. Safety Data Sheets for all applicable hazardous materials present on-site would be made available to on-site personnel.

The PEA states that waste materials would be managed, stored, transported, and disposed as part of the Proposed Project, including existing wood poles, and temporarily stored in one or more staging yards as the material awaits salvage, recycling, and/or disposal; any material deemed hazardous waste would be properly disposed of per State or federal regulations. Existing wood poles would either be reused, disposed of in a Class I hazardous waste landfill, and/or disposed of in an RWQCB-certified municipal (Class III) landfill, or equivalent facility. Wires and other recyclable materials removed as part of the Project would also be stored and recycled.

PEA Section 4.9.4.1.1 also defines that all hazardous materials would be transported, used, and disposed of in accordance with applicable rules, regulations, and SCE standard protocols designed to protect the environment, workers, and the public. The implementation of APM HAZ-1 would ensure that impacts to the public or the environment through the transport, use, or disposal of hazardous materials would be less than significant.

Impact HH-2: Create a significant risk to human health or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials.

Construction and Operations and Maintenance

LESS THAN SIGNIFICANT. Construction and operations and maintenance activities for the Proposed Project have the potential to result in leaks and accidental spills of hazardous materials at staging yards and construction sites. Construction activities associated with the Proposed Project would use hazardous materials such as gasoline, diesel fuel, oil, and lubricants associated with construction equipment and vehicles and would use and store hazardous materials such as mineral oil, cleaning solvents, paints, adhesives, vehicle fuels, oil, hydraulic fluid, and other vehicle and equipment maintenance fluids in the construction staging yards.

An HMMP will be prepared in accordance with APM HAZ-1 to ensure that hazardous materials and waste are appropriately handled. Any impacts to people or the environment from leaks or spills of hazardous materials that would result from storage, transport, use, or disposal of hazardous materials or hazardous waste would be addressed through compliance with these plans and all applicable federal and State laws and regulations, and SCE guidelines, thus reducing potential impacts to less than significant with mitigation. Worker training would be conducted in accordance with the SWPPP and HMMP requirements to ensure that any impact from accidental releases of hazardous materials into the environment would be less than significant by ensuring that workers would be trained on site-specific spill prevention, emergency

response, and safe handling of hazardous materials. Per APM HAZ-1, spill control procedures would also be developed for fueling operations to prevent accidental releases.

Per APM HAZ-1, SCE may be required to prepare and submit a project-specific Spill Prevention, Control, and Countermeasures Plan (SPCC Plan) to the San Bernardino, Kern, and Inyo County Fire Departments Hazardous Materials Divisions. If required per APM HAZ-1, the approved SWPPP and SPCC Plans would be prepared submitted to CPUC prior to the start of construction in accordance with and federal and State regulations.

The implementation of APM HAZ-1 would result in less than significant impacts with respect to reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Impact HH-3: Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.

Construction and Operations and Maintenance

LESS THAN SIGNIFICANT. A review of hazardous material databases identified 18 hazardous material sites located within 0.5 mile of the Proposed Project as presented in Table 3.11-1. Three of the 18 hazardous material sites are currently identified on a list compiled pursuant to Government Code Section 65962.5[2] are located on or adjacent to the Proposed Project:

- Rand Historic Mining Complex: This site consists of multiple inactive mines near the community of Randsburg, Kern County, where US 395 crosses the shared border of Kern and San Bernardino counties in the near vicinity of the mid-portion of Segment 2. The closest mining area is approximately 300 feet from the existing subtransmission line and has a depth of approximately 350 feet. While not on the National Priorities List (NPL)[3], the BLM is in the process of implementing cleanup programs at each of the mine locations under CERCLA.
- Coolwater Generating Station: This site is located adjacent to Segment 3S and was the site of a release to soil that was remediated in 2014. DTSC deemed no further action was needed at this location and the site was approved for unrestricted land use (SCE, 2020).
- The former Jorgensen Reduction Plant: An approximately 0.25-mile long portion of Segment 1 traverses, or is immediately adjacent to, the former Jorgensen Reduction Plant, a tungsten ore processing plant which operated from the early 1940s to the mid-1950s. DTSC records indicate evaluation is needed associated with the historical operation of this facility. Components of the Proposed Project may be constructed within the affected area of the former Jorgensen facility.

As described in Section 2.4, of the Project Description, construction of the Proposed Project, which involves ground disturbance during such activities as vegetation clearance, removal of existing old poles, and excavations for new pole foundations. In event that the listed hazardous materials sites previously released hazardous materials that have affected the soils in the Project area, then Project construction earth-disturbance activities may have the potential to disturb contaminated soils. In accordance with APM HAZ-2, SCE will develop and implement a Soil Management Plan to ensure the appropriate identification, sampling, management, and disposal of potentially contaminated soils. If the soil is classified as hazardous, the soil would be properly profiled, manifested, and transported to a Class I landfill or other appropriate soil treatment or recycling facility. With implementation of APM HAZ-2, impacts of construction and operations and maintenance of the Proposed Project would be less than significant.

[2] Section 65962.5(a) requires that DTSC maintain a list of all hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code.

[3] The National Priorities List (NPL) is a list of sites of national priority among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories. The NPL is intended primarily to guide the EPA in determining which sites warrant further investigation. (EPA, 2025)

Impact HH-4: Create a hazard to the public or the environment through mobilization of contaminants or hazards, including mining-related contaminated soils, pesticides, herbicides, and Valley Fever spores.

Construction and Operations and Maintenance

Pesticides or Herbicides

LESS THAN SIGNIFICANT WITH MITIGATION. If encountered during construction activities, residual pesticide and herbicide contamination of the soil in the agricultural areas of the Proposed Project could expose construction workers and the public to contaminated soil. Active agriculture occurs adjacent to the ROW along Segments 1 and 3S, and historic and recent agricultural areas are in proximity to all segments. Grading of access and spur roads and excavation for subtransmission structure foundations could encounter soil contaminated with pesticides and herbicides, creating a potential health hazard, which would be a significant impact. Implementation of Mitigation Measure HH-4a (Identify Soil Contamination; full text below) would reduce impacts to less than significant.

Mining-Related Contaminated Soils

LESS THAN SIGNIFICANT WITH MITIGATION. As described in Section 3.11.1.2, a portion of Segment 2 crosses the community of Randsburg, which includes the Rand Historic Mining Complex Superfund site. Mining tailings resulting from the previous mining operations have been found to migrate into the washes or have been transported by wind and water, and have contaminated soils with antimony, arsenic, chromium, cobalt, iron, manganese, and mercury exceeding both background concentrations and the EPA Regional Screening Levels (EPA, 2025). As mentioned, the closest mining area is approximately 300 feet from the existing subtransmission line and has a depth of approximately 350 feet. Due to the close proximity of the known contamination to the proposed route, the Proposed Project's construction earth-disturbance activities have the potential to encounter soils contaminated with mining-related hazardous materials. If encountered, the contaminated soils may expose workers and the public to hazardous materials, thus resulting in a potentially significant impact. Construction activities for the Project would be subject to dust control requirements to reduce the potential for workers and the public to contract Valley Fever. However, implementation of APM HAZ-2 (Prepare a Soil Management Plan), Mitigation Measure HH-4a (Identify Soil Contamination; full text below) and Mitigation Measure AQ-2b (Control Fugitive Dust Emissions; full text in Section 3.4, Air Quality) would reduce impacts to less than significant.

Valley Fever

LESS THAN SIGNIFICANT WITH MITIGATION. As described in Section 3.11.1.2, Valley Fever (coccidioidomycosis) is considered endemic in California and Coccidioides fungus are present in the arid desert regions of California, including Kern and Riverside Counties. There is a potential that construction activities (e.g., grading, excavation, and construction vehicle traffic) could result in fungus spore-containing soils traveling with dust, exposing workers and the public to contracting Valley Fever, which would be a significant impact. Construction activities for the Project would be subject to dust control requirements to reduce the potential for workers and the public to contract Valley Fever. See Section 3.4, Air Quality for discussion of dust control and Mitigation Measure AQ-2b (Control Fugitive Dust Emissions). This mitigation would ensure appropriate dust control; as a result, the impact would be less than significant.

Mitigation Measures for Impact HH-4

HH-4a **Identify Soil Contamination (Supplements APM HAZ-2).** Prior to construction, SCE shall collect soil samples in construction areas that where the land has historically or is currently being used for agriculture or are in close proximity to the previous mines in Randsburg and would be subject to ground disturbance by the Project. SCE shall identify the possible presence of and delineate the extent of pesticide, herbicide, or mining-

related contamination and provide results to the CPUC. If excavated project materials are found to contain elevated levels of pesticides/, herbicides, or arsenic or heavy metals (associated within mining tailings) they will require special handling and disposal procedures consistent with the requirements of APM HAZ-2 (Prepare a Soils Management Plan) and the CPUC shall be informed. As appropriate, SCE shall contact State, Inyo County, Kern County and San Bernardino County regulatory agencies to provide oversight regarding the handling, treatment, and/or disposal options. In the event pesticide/ herbicide or mining-related contamination is found, CPUC shall be notified and shall be kept apprised of the steps taken to address the problem.

AQ-2b **Control Fugitive Dust Emissions.** (See Section 3.4, Air Quality for full text)

Impact HH-5: Result in a safety hazard or excessive noise where the Project is located within an airport land use plan area or within 2 miles of a public use airport.

Construction

LESS THAN SIGNIFICANT. Construction would not create safety hazards related to the Project's proximity to airports, because the existing subtransmission structures are already compliant with airport safety requirements. In PEA Section 4.9.4.5.1, SCE committed to will coordinate with local airports regarding helicopter operations and flight plans during project construction (SCE, 2020).

Noise impacts during helicopter use during construction are addressed in Section 3.15.

Operations and Maintenance

LESS THAN SIGNIFICANT. After construction, three areas of the Proposed Project would be located within an airport land use plan area or within 2 miles of an airport:

- Segment 1 traverses areas addressed in the Inyo County Airport Hazard Overlay District.
- Segment 1 traverses the Kern County Airport Land Use Compatibility Plan (Kern County, 2012).
- In Segment 2, the Proposed Project alignment is within 2 miles of and crosses the plane of imaginary surfaces or airport land use plan buffer at Inyokern Airport.

While the IC Project would be constructed within these public airport zones, the existing subtransmission infrastructure already exists at nearly the same locations as the replacement structures. The runways of these airports and airstrips are not oriented relative to the Proposed Project to result in aviation hazards due to takeoff or landing.

As shown in EIR Section 2.2.1 (Table 2-2), existing structures range in height from 43 to 132 feet. New and replacement structures for the Proposed Project would range in height from 65 to 140 feet with an average new height from 90 to 93 feet tall. Some replacement structures are nearly twice as tall as existing structures, depending on span length and topography.

Section 2.4.2 (Federal Aviation Administration [FAA] Requirements) defines the process for evaluation of potential airport hazards. As required by the Federal Aviation Regulation (Title 14 CFR, Part 77), SCE would file FAA notifications for changes in height of Proposed Project structures. The FAA would conduct its own analysis related to Proposed Project structures in the vicinity of airports and may recommend no changes to the design of the proposed structures; or may request redesigning any proposed structures near an airport to reduce the height of such structures or mark the structures, including the addition of aviation lighting or placement of marker balls on wire spans.

Because the subtransmission structures already exist and changes in structure height would be approved by the FAA, the impact would be less than significant.

Impact HH-6: Create a hazard to the public or workers due to discovery of military munitions and unexploded ordnance.

Construction

LESS THAN SIGNIFICANT WITH MITIGATION. Multiple FUDS are in the vicinity of the Proposed Project area as summarized in Table 3.11-2. These sites were used as munitions storage, bombing practice ranges, and desert training grounds during WWII, and there is potential for encountering unexploded ordnance (UXO) during construction. As noted in Table 3.11-2, two FUDS occur adjacent to Segments 3N and 3S: one former World War II–era practice bombing range (PBR) (Victorville Precision Bombing Range N-1) and the Marine Corps Logistics Base, Barstow.

While the existing subtransmission lines and associated infrastructure have been operating for many years within the boundaries of these two FUDS, there remains the possibility that construction or operations and maintenance activities may occur in areas that have not been disturbed for decades. As a result, construction activities could encounter dangerous FUDS, which would be a significant impact. Therefore, Mitigation Measure HH-6a (UXO Identification, Training, and Reporting Plan; full text below) is required to ensure impacts with respect to UXO are less than significant.

Operations and Maintenance

LESS THAN SIGNIFICANT WITH MITIGATION. In general, operations and maintenance activities require less ground disturbance than initial construction, so they are less likely to encounter buried FUDS. However, the risk still exists and, if it occurred, would result in a significant impact. Mitigation Measure HH-6a (UXO Identification, Training, and Reporting Plan) would ensure that the risk to the public or workers due to discovery of military munitions and unexploded ordnance is less than significant.

Mitigation Measure for Impact HH-6

HH-6a **Unexploded Ordnance (UXO) Identification, Training, and Reporting Plan.** SCE shall prepare and implement a project-specific UXO Identification, Training, and Reporting Plan to properly train all site workers in the recognition, avoidance, and reporting of military waste, munitions debris, and ordnance, and provide guidelines for identification and removal of UXO by trained experts. The Plan shall contain, at a minimum, the following:

- Identification of areas of ground disturbance where UXO or munitions debris may be encountered that may require additional ordnance surveys prior to construction. Identification of these areas and additional surveys shall be conducted by a UXO expert or another specialist approved by the CPUC.
- A description of the training program and materials, and the qualifications of the training program preparer and training personnel
- Notification and avoidance requirements when potential UXO or munitions debris are noted by site workers
- Identification of available trained experts that will respond to notification of discovery of any UXO or munitions debris (unexploded or not)
- Work plan to recover and remove discovered UXO, ordnance or munitions debris, and complete additional field screening. Field screening may include geophysical surveys to investigate adjacent areas for surface, near surface, or buried ordnance in all proposed land disturbance areas

The UXO Identification, Training, and Reporting Plan shall be submitted to the CPUC 60 days prior to the start of construction for review, comment, and approval.

Impacts and Mitigation Measures: Electrical Hazards and Interference

The Proposed Project would cause changes in power line field strength as the locations of energized conductors would change during construction and in the final configuration of the transmission lines after construction is complete. These changes in field strength at the edge of the ROW could cause the following types of electrical interference and hazards.

Impact HH-7: Expose workers or the public to excessive shock hazards.

Operations and Maintenance

LESS THAN SIGNIFICANT WITH MITIGATION. After the Proposed Project is energized, induced currents and voltages on conducting objects like pipelines and metal fences located near the proposed transmission lines represent a potential adverse impact because they can shock people coming into contact with these conducting objects. While induced current concerns may have been resolved with the existing subtransmission lines, the Proposed Project structures will be located in slightly different locations and will use different conductors, so the potential for induced currents may be different from the existing situation, which would be a significant impact.

These impacts do not pose a threat in the environment if the conducting objects are properly grounded. Mitigation Measure HH-7a (Implement grounding measures to avoid shocks) would provide a conductive path to ground thereby avoiding a buildup of electrical potential that could discharge as an electrical shock.

Mitigation Measures for Impact HH-7

HH-7a **Implement grounding measures to avoid shocks.** As part of the siting and construction process, SCE shall identify objects (such as metal fences, metal buildings, and metal pipelines) within and near the right-of-way that have the potential for induced voltages. SCE shall implement electrical grounding of metallic objects in accordance with SCE's standards. The identification of objects shall document the threshold electric field strength and metallic object size at which grounding becomes necessary. This applies also where the project alignment is located in close proximity to agricultural irrigation infrastructure.

For all areas with potential increased or new shock hazards, SCE shall have a qualified engineer analyze the risk of induced current, corrosion, and shock hazards from the rebuilt subtransmission line on existing agricultural irrigation systems. A memorandum presenting the findings of this analysis shall be provided to the CPUC at least 30 days prior to construction activities in the vicinity of any active agricultural operations or other areas where shock hazard may exist. The report shall clearly identify the facility or infrastructure in close proximity to the Project; the results of the analysis for induced current, corrosion, and shock hazards; and proposed methods for avoiding or addressing any impacts, such as through cathodic grounding or other design changes.

3.11.4. Mitigation Monitoring, Compliance, and Reporting

Table 3.11-4 presents the mitigation monitoring, compliance, and reporting information for hazards and hazardous materials. The full text of the mitigation measures are presented in Section 3.11.3.3.

Table 3.11-4. Mitigation Monitoring Program – Hazards and Hazardous Materials

Mitigation Component	Text or Description
Mitigation Measure HH-4a	**Identify Soil Contamination**
Location	Construction areas that where the land has historically or is currently being used for mining or agriculture and would be subject to ground disturbance by the Project

Mitigation Component	Text or Description
Monitoring / Reporting Action	CPUC to track contamination findings and appropriate disposal
Effectiveness Criteria	Soils Management Plan is implemented as approved
Responsible Agency	CPUC
Timing	Prior to and during construction
Mitigation Measure HH-6a	**Unexploded Ordinance (UXO) Identification, Training, and Reporting Plan**
Location	Areas of ground disturbance where UXO or munitions debris may be encountered
Monitoring / Reporting Action	CPUC ensure that UXO Identification, Training, and Reporting Plan is adequate and enforced
Effectiveness Criteria	UXO Identification, Training, and Reporting Plan is implemented as approved
Responsible Agency	CPUC
Timing	60 days prior to the start of construction and during construction
Mitigation Measure HH-7a	**Implement Grounding Measures to Avoid Shock**
Location	Objects within and near project ROW that have the potential to induce voltages
Monitoring / Reporting Action	Memorandum to be submitted to CPUC
Effectiveness Criteria	Grounding measures are implemented as approved
Responsible Agency	CPUC
Timing	30 days prior to construction

3.11.5. References

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DTSC (Department of Toxic Substances Control). 2025. EnviroStor. Available: https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=desert+center. Accessed January 2025.

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Kern County. 2012. Airport Land Use Compatibility Plan. https://psbweb.kerncounty.com/planning/pdfs/ALUCP2012.pdf.

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3.12. Hydrology and Water Quality

This section describes existing environmental conditions and anticipated impacts associated with the Proposed Project for Hydrology and Water Quality. Impacts evaluated in this section include potential impacts on surface water and groundwater quality.

The environmental setting for Hydrology and Water Quality is presented in Section 3.12.1 and relevant regulations and standards are summarized in Section 3.12.2. Section 3.12.3 describes the impacts on the environment associated with implementation of the Proposed Project. These impact discussions introduce mitigation measures that would reduce or avoid significant adverse environmental impacts. Section 3.12.4 presents the mitigation monitoring, compliance, and reporting information. Section 3.12.5 lists references cited in this section. Chapter 4 describes the environmental impacts of the alternatives to the Proposed Project. Cumulative impacts for all disciplines are considered in Chapter 5.

Comments related to hydrology and water quality received during scoping are listed below and addressed in Section 3.12.3:

- Discuss potential impacts related to flood zones as depicted in the most recent Federal Emergency Management Agency's Flood Insurance Rate Map.
- Discuss permits required from the Flood Control Districts for encroachment on facilities or right-of-way.
- Identify, discuss, and mitigate construction-related impacts to water quality.

3.12.1. Environmental Setting

This section describes the affected environment for hydrology and water quality, including surface water and groundwater.

3.12.1.1. Regional Setting

The information presented in this section was gathered from the Proponent's Environmental Assessment (SCE, 2020). The data includes consideration of the preliminary design for the Proposed Project, including topographic maps, and water resources data available from the California Department of Water Resources, United States Geological Survey, Federal Emergency Management Agency, Western Regional Climate Center, California State Water Resources Control Board, Regional Boards, and local jurisdictions. Specific data sources are cited in the text and listed in Section 3.12.5.

Topography and Climate

Segment 1 of the Project is located in Inyo County in the Great Basin Desert. Segments 2, 3N, and 3S are within the Mojave Desert of southeastern California in Kern and San Bernardino counties. Elevations in the Project area range from approximately 2,000 feet above mean sea level (amsl) to 5,500 feet. Surface water on large alluvial fans which occur adjacent to the mountain fronts form ephemeral streams which drain and deposit alluvial materials into valleys and dry lakes or the Mojave River. Soils within the project area vary from extremely-gravelly to sandy loam. The remaining portion of the Project is within the Owens Valley. Elevation in the Owens Valley ranges from approximately 3,500 feet amsl to 4,000 feet near Bishop in Inyo County. Surface water on large alluvial fans and in mountain streams of the eastern Sierra and White Mountains drain into Owens Valley and eventually the Owens River and Owens Lake.

The Mojave Desert is characterized by low rainfall, hot summers, cool to cold winters, and sparse vegetation adapted to arid conditions. Average annual rainfall along the project route ranges from a little over four to five inches throughout most of the route (five inches per year in the northern end of the Owens Valley of Inyo County to slightly over four inches at Barstow and Baker in San Bernardino County), rising to a little over eight inches per year in the Mountain Pass area at the eastern end of the route. Precipitation is seasonal with April to October being the driest months in the western portion of the project route and

April to June or July being the driest months in the eastern portion of the project route. There may be some winter snowfall along all portions of the route, with the least potential for snow in the Barstow area (WRCC, 2019).

Due to the dry climate the majority of the natural streams in the vicinity of the Project are ephemeral. Ephemeral streams carry water infrequently and only in response to rainfall. Along the project route exceptions occur, primarily in the Owens Valley.

Floodplains

Floodplains are areas in and adjacent to stream channels or watercourses that can be subject to flooding by flows in or overflowing the main channel. Floodplains are usually represented by a flood return period such as 100-year or 500-year, meaning the flood discharge recurs on average once every 100 or 500 years. Longer return periods represent larger floods. The 100-year flood is used for flood insurance, regulatory, and floodplain management purposes.

The Federal Emergency Management Agency (FEMA) has mapped 100-year floodplains[1] for some of the watercourses crossed by the proposed route (FEMA, 2023). Figure 3.12-1a through Figure 3.12-1c (Watersheds and Floodplains, Segment 1), Figure 3.12-2 (Watershed and Floodplains, Segment 2), and Figure 3.12-3 (Watershed and Floodplains, Segments 3N and 3S) show the location of mapped FEMA regulatory floodplains along the project route.

Surface Water Quality

Water quality along the route is not defined as impaired along most of the Project ROW. There are several perennial streams crossed by the Project that are listed as impaired for bacteria in the California State Water Resources Control Board (SWRCB) Final 2020-2022 Integrated Report (SWRCB, 2022). This is primarily due to animal and livestock grazing is these areas. The larger water bodies designated as water-quality impaired by the SWRCB are the Haiwee Reservoir (listed as impaired for copper), the Owens River (listed as impaired for bacteria and sodium), and the Mojave River (listed as impaired for numerous constituents; SWRCB, 2022).

Surface Water Beneficial Uses

The SWRCB designates beneficial uses of surface waters in order to protect these uses against water quality degradation. Beneficial uses for the watercourses crossed by the Project are described in the Lahontan Regional Water Quality Control Plan (Basin Plan) developed by the Lahontan Regional Water Quality Control Board (LRWQCB) (LRWQCB, 1995).

Beneficial uses for the majority of the surface waters along the project route consist of municipal supply, agricultural supply, groundwater replenishment, recreation (contact and non-contact), commercial and sport fishing, warm freshwater habitat, and wildlife habitat.

Waters in the vicinity of Segments 1 and 2 also include the beneficial uses industrial service supply, fresh-water replenishment, hydropower generation, cold freshwater habitat, inland saline water habitat, preservation of biological habitats of special significance, rare, threatened or endangered species, migration of aquatic organisms, spawning, reproduction and development, water quality enhancement, and flood peak attenuation (SCE, 2020).

[1] A 100-year floodplain is an area that has a 1% chance of flooding in any given year.

Groundwater

The project route crosses 10 separate groundwater basins; these are discussed in Section 3.12.1.2 by segment. Most of the Project crosses desert valleys which are underlain by three or more designated groundwater basins.

Groundwater in the region is used for agricultural and urban supply. Groundwater basins range from large extensive alluvial valleys with thick multilayered aquifers to small inland valleys. Depth to groundwater in the vicinity of the project segments is variable with perched groundwater zones[2] measured between September and November 2023 ranging from 3 to 25 feet below ground surface (bgs) along the Owens River area south to Inyokern (Segments 1 and 2), from approximately 6 to 100 feet bgs in the Mojave River area (Segments 3N and 3S) (California's Groundwater Live, 2023). Generally, wells located further from the Owens and Mojave Rivers showed depths to groundwater ranging from approximately 100 to 200 feet or greater bgs (California's Groundwater Live, 2023).

Groundwater quality is generally of good enough quality to be used for public and domestic water supply and irrigation. Inorganic constituents including calcium and bicarbonate ions occur naturally or as a result of irrigation recharge in varying concentrations. The range of dissolved constituents is generally considered small (SCE, 2020).

3.12.1.2. Environmental Setting by Segment

The following sections describe the environmental setting along the Proposed Project route for hydrology and water quality including surface water and groundwater for each of the four project segments.

Segment 1: Bishop to Inyokern

Surface Water Resources

Segment 1 extends from the Control Substation near Bishop in the north end of the Owens Valley to the Inyokern Substation near Ridgecrest at the southern end of the Owens Valley. Surface water resources in the Owens Valley consist primarily of the Owens River, numerous streams originating in the mountains on the west and east side of the mountains and draining to or toward the Owens River, water distribution canals (Rawson Canal and Big Pine Canal), the Los Angeles Aqueduct, and Owens Lake, which is now dry most of the time due to withdrawals of river water into the aqueduct system, and several smaller lakes some of which form part of the aqueduct system.

The Owens River is perennial through most of the length of the valley (north of Owens Lake). Many of the tributary streams are also perennial, particularly closer to their mountain source. These include Bishop Creek, Rawson Creek, Baker Creek, Big Pine Creek, Lone Pine Creek, and Birch Creek, all of which would be crossed by the Project. The remaining streams and tributaries that are crossed by the project route are ephemeral and remain dry during most of the year.

Reservoirs and lakes that are located within 1 mile of the Proposed Project route (where water quality would have the greatest potential to be affected by erosion or runoff) include Tinemaha Reservoir, Haiwee Reservoir (North and South), Little Lake, and Diaz Lake.

Groundwater

Nearly all of Segment 1 is above three groundwater basins: the Owens Valley, Rose Valley and Indian Wells Valley groundwater basins. The Owens Valley basin has a total area of 1,030 square miles and has a storage capacity of 35,000,000 acre-feet. The Rose Valley basin has a total area of 66 square miles and

[2] Perched groundwater is a body of groundwater that is separated from the main body of groundwater by an unsaturated zone. This usually occurs when a layer of low-permeability material separates the two zones.

storage of 820,000 acre-feet. The Indian Wells Valley Groundwater basin has a total area of 597 square miles and storage of 5,120,000 acre-feet (SCE, 2020).

Floodplains

With the exception of those portions of Segment 1 that cross or are adjacent to the Owens River most of Segment 1 is located outside of designated floodplains. As shown in Figure 3.12-1a through Figure 3.12-1c (Watersheds and Floodplains, Segment 1), small portions of Segment 1 are routed through 100-year floodplains.

Segment 2: Inyokern to Kramer Junction

Surface Water Resources

Segment 2 extends from the Inyokern Substation near Ridgecrest to the Kramer Substation near Kramer Junction. Surface water resources along this segment consist entirely of ephemeral desert washes[3] draining to interior dry lakes. The dry lakes, which include Cuddeback Lake, Koehn Lake, Harper Lake, Rodgers Lake and China Lake, are wide-shallow topographic depressions that collect water after sufficient rainfall but can be dry for long periods. There are no perennial streams along Segment 2.

Groundwater

Most of Segment 2 is above the Fremont Valley, Cuddeback Valley, Harper Valley and Indian Wells Valley groundwater basins. The Fremont Valley basin has a total area of 523 square miles and has a storage capacity of 4,800,000 acre-feet. The Cuddeback Valley basin has a total area of 148 square miles and storage of 1,380,000 acre-feet. The Harper Valley basin has a total area of 640 square miles and storage of 6,975,000 acre-feet. The Indian Wells Valley Groundwater basin has a total area of 597 square miles and storage of 5,120,000 acre-feet (SCE, 2020).

Floodplains

A short reach of Segment 2 near the Inyokern Substation is located within the 100-year floodplain. The remainder of Segment 2 is located outside of 100-year or 500-year designated floodplains. Figure 3.12-2 (Watersheds and Floodplains, Segment 2) shows specific floodplain locations.

Segments 3N and 3S: Kramer Junction to Daggett

Surface Water Resources

Segments 3N and 3S extend from the Kramer Substation to the Coolwater Substation east of Barstow. The most prominent surface water feature is the Mojave River. The majority of the river has subsurface flow with surface flow occurring downstream past Barstow at the lower narrows as the river flows through Afton Canyon. Other surface water resources along this segment consist entirely of ephemeral desert washes draining to interior dry lakes. The dry lakes, which include Cuddeback Lake region and valley, and mountain slope areas are wide-shallow topographic depressions that collect water after sufficient rainfall but can be dry for long periods.

Groundwater

Segments 3N and 3S are above the Harper Valley and Lower Mojave Valley groundwater basins. The Harper Valley basin has a total area of 640 square miles and storage of 6,975,000 acre-feet. The Lower Mojave Valley groundwater basin has a total area of 447 square miles and storage of 9,010,000 acre-feet (SCE, 2020).

[3] Ephemeral desert washes are watercourses that are generally dry but flow for a short time after rain.

Groundwater quality is generally of marginal to inferior quality to be used for public and domestic water supply and irrigation. Inorganic constituents including calcium and sodium ions occur naturally or as a result of irrigation recharge in varying concentrations. The range of dissolved constituents is generally considered moderate to high (SCE, 2020).

Floodplains

All of Segments 3N and 3S are located outside of designated floodplains. No portions of Segments 3N or 3S are located within or cross a 100-year or 500-year floodplain. The smaller ephemeral and intermittent drainages crossed by the Proposed Project in Segments 3N and 3S would not be expected to result in potential flood risk due to their limited flow volumes. Figure 3.12-3 (Watersheds and Floodplains, Segments 3N and 3S) is a floodplain map for Segments 3N and 3S.

3.12.2. Applicable Regulations, Policies, and Standards

3.12.2.1. Federal Regulations, Policies and Standards

Portions of the proposed route cross federal land under the jurisdiction of the Bureau of Land Management, Bureau of Indian Affairs, and Department of Defense. The project would therefore require approval from these agencies in addition to the Federal regulations described below.

Clean Water Act

Clean Water Act (CWA) (33 USC Section 1251 et seq.). Formerly the Federal Water Pollution Control Act of 1972, the CWA was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA, enforced by the United States Environmental Protection Agency (EPA), requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and certain non-point source discharges to surface water.

Section 303(d) of the Clean Water Act requires states to assess surface water quality and prepare a list of waters (known as the Section 303(d) list of water quality limited segments) considered to be impaired by not meeting water quality standards and not supporting their beneficial uses. Impairment may result from point-source pollutants or non-point source pollutants.

Section 401 of the CWA requires that any activity that may result in a discharge into waters of the U.S. be certified by the Regional Water Quality Control Board (RWQCB, in this case the LRWQCB). This certification ensures that the proposed activity follow State and/or federal water quality standards.

Section 402 of the CWA requires that direct and indirect discharges and stormwater discharges into waters of the United States be pursuant to a National Pollutant Discharge Elimination System (NPDES) permit for industrial or construction activities. NPDES permits contain industry-specific, technology-based limits and may include additional water quality-based limits, and pollutant-monitoring requirements. An NPDES permit may include discharge limits based on Federal or State water quality criteria or standards. NPDES permitting authority is delegated to, and administered by, the California State Water Resources Control Board (SWRCB) and the RWQCBs.

The SWRCB Storm Water Program Construction General Permit (General Construction Storm Water Permit) required by the federal Clean Water Act, regulates storm water runoff from construction sites of one acre or more in size. The Construction General Permit is a statewide, standing permit. Qualifying construction activities, which would include the Proposed Project, must obtain coverage under the permit by filing a Notice of Intent with the RWQCB, and development of and compliance with a Storm Water Pollution Prevention Plan (SWPPP) describing Best Management Practices (BMPs) to protect storm water runoff. The SWPPP must contain a visual monitoring program, a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs, and a sediment monitoring plan if the site discharges directly to a water body listed on the Section 303(d) list for sediment.

The General Permit prohibits the discharge of pollutants other than storm water and non-storm water discharges authorized by the General Permit or another NPDES permit and prohibits all discharges which contain a hazardous substance in excess of reportable quantities established in 40 C.F.R. §§ 117.3 and 302.4 (pursuant to Section 311 of the Clean Water Act), unless a separate NPDES Permit has been issued to regulate those discharges. In addition, the General Permit incorporates discharge prohibitions contained in water quality control plans, as implemented by the RWQCBs. Authorized non-storm water discharges must be infeasible to eliminate; comply with BMPs as described in the SWPPP; filtered or treated using appropriate technology; meet the established numeric action levels for pH and turbidity; and, not cause or contribute to a violation of water quality standards. Discharges to storm water that cause or threaten to cause pollution, contamination, or nuisance are prohibited. Pollutant controls must utilize best available technology economically achievable (BAT) for toxic pollutants and non-conventional pollutants and best conventional pollutant control technology (BCT) for conventional pollutants.

The CWA provides definitions for the types of controls that can be used to satisfy BAT and BCT requirements. Specific BAT and BCT pollution controls and Best Management Practices may include runoff control, soil stabilization, sediment control, proper stream crossing techniques, waste management, spill prevention and control, and a wide variety of other measures depending on the site and situation.

National Flood Insurance Act/Flood Disaster Protection Act

The National Flood Insurance Act of 1968 made flood insurance available for the first time. The Flood Disaster Protection Act of 1973 made the purchase of flood insurance mandatory for the protection of property located in Special Flood Hazard Areas[4]. These laws led to mapping of regulatory floodplains and to local management of floodplain areas according to federal guidelines which include prohibiting or restricting development in flood hazard zones.

3.12.2.2. State Regulations, Policies and Standards

California Streambed Alteration Agreement

Sections 1600–1616 of the California Fish and Game Code requires that any public utility (or other entity) that proposes an activity that would substantially divert or obstruct the natural flow of any river, stream or lake; substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake; or, deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake, must notify the California Department of Fish and Wildlife (CDFW). If the CDFW determines the alteration may adversely affect fish and wildlife resources, a Lake or Streambed Alteration Agreement (LSAA) would be prepared. The Agreement includes conditions necessary to protect those resources. The Agreement applies to any stream including ephemeral streams and desert washes.

The project would cause transmission structures and roads to be constructed in watercourses determined by the State of California to be habitat for fish and wildlife, and notification under Section 1600 would be required.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1967, California Water Code Section 13000 et seq., requires the SWRCB to adopt water quality criteria to protect State waters. The LRWQCB has developed a Water Quality Control Plan (Basin Plan) specifying water quality objectives, beneficial uses, numerical standards of pollution concentrations, and implementation procedures for Waters of the State. Waters of the State is defined by the Porter Cologne Water Quality Control Act as “any surface water or ground-

[4] Special Flood Hazard Areas are defined by FEMA as an area that will be inundated by a flood with a 1 percent chance of being equaled or exceeded in any given year (also called the “100-year” flood area).

water, including saline waters, within the boundaries of the State." General objectives of the Basin Plans state that all waters (of the State) shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in, human, plant, animal, or aquatic life. The water quality control plans are intended to protect designated beneficial uses of waters, avoid altering the sediment discharge rate of surface waters, and avoid introducing toxic pollutants to the water resource. The Porter Cologne Water Quality Control Act requires that anyone proposing to discharge waste that could affect the quality of the waters of the State to report the waste discharge to the appropriate RWQCB.

SWRCB Construction General Permit

The Construction General Permit, issued pursuant to the federal CWA, regulates stormwater runoff from construction sites of one acre or more in size. The permit is a statewide, general order issued by the SWRCB and implemented and enforced by the RWQCBs. For all new qualifying projects, applicants must electronically file permit registration documents using the Stormwater Multiple Application and Report Tracking System (SMARTS) and must include a Notice of Intent (NOI), risk assessment, site map, and Storm Water Pollution Prevention Plan (SWPPP) to be covered by the Construction General Permit prior to beginning construction. The risk assessment and SWPPP must be prepared by a State-qualified SWPPP Developer.

The Construction General Permit requires the preparation and implementation of a SWPPP, which must be prepared before construction begins. At a minimum, a SWPPP includes the following:

- A description of construction materials, practices, and equipment storage
- A list of pollutants likely to contact stormwater and site-specific erosion and sedimentation control practices
- A list of provisions to eliminate or reduce discharge of materials to stormwater
- BMPs for fuel and equipment storage
- Non-stormwater management measures such as installing specific discharge controls during activities such as paving operations and vehicle and equipment washing and fueling
- A commitment that equipment, materials, and workers would be available for rapid response to spills and/or emergencies. All corrective maintenance or BMPs would be performed as soon as possible, depending upon worker safety.

The SWPPP provides specific construction related BMPs to prevent soil erosion and loss of topsoil. BMPs implemented at a typical construction site could include but would not be limited to physical barriers to prevent erosion and sedimentation, construction of sedimentation basins, limitations on work periods during storm events, use of swales, protection of stockpiled materials, and a variety of other measures that would substantially reduce or prevent erosion from occurring during construction. Post-construction requirements require that construction sites match pre-Project hydrology to ensure that the physical and biological integrity of aquatic ecosystems are sustained in their existing condition.

The Construction General Permit prohibits the discharge of pollutants other than stormwater and authorized non-stormwater discharges and prohibits all discharges which contain a hazardous substance in excess of reportable quantities established in 40 CFR §§ 117.3 and 302.4 (pursuant to CWA Section 311). In addition, the Construction General Permit incorporates discharge prohibitions contained in water quality control plans. Discharges to Areas of Special Biological Significance are prohibited unless covered by an exception that the SWRCB has approved. Authorized non-stormwater discharges must be infeasible to eliminate; comply with BMPs as described in the SWPPP; filtered or treated using appropriate technology; meet the established numeric action levels for pH and turbidity; and not cause or contribute to a violation of water quality standards. Discharges to stormwater that cause or threaten to cause pollution, contamination, or nuisance are prohibited. Pollutant controls must utilize best available technology

economically achievable (BAT) for toxic pollutants and non-conventional pollutants and best conventional pollutant control technology (BCT) for conventional pollutants.

The CWA provides definitions for the types of controls that can be used to satisfy BAT and BCT requirements. Specific BAT and BCT pollution controls and BMPs may include runoff control, soil stabilization, sediment control, proper stream crossing techniques, waste management, spill prevention and control, and a wide variety of other measures depending on the site and situation.

Lahontan Regional Water Quality Control Board Water Quality Control Basin Plan

The majority of the Project is located within the jurisdictional boundaries of the LRWQCB. The LRWQCB is responsible for protecting the beneficial uses of surface water and groundwater resources from the Oregon border to the northern Mojave Desert, including all of those in the California east of the Sierra Nevada crest. The Lahontan RWQCB adopted the Basin Plan in 1995 with amendments through 2016. The Basin Plan designates beneficial uses for surface water and groundwater, sets standards and numeric objectives that must be attained or maintained to protect the designated beneficial uses and conform to the State's antidegradation policy, and describes implementation programs to protect all waters in the Lahontan region. NPDES permits, Water Discharge Requirements (WDRs), and waivers are mechanisms used by the RWQCB to control discharges and protect water quality. The Basin Plan is regularly reviewed and updated with amendments, as necessary.

Sustainable Groundwater Management Act (SGMA)

The passage of SGMA in 2014 set forth a statewide framework to help protect groundwater resources over the long-term. The SGMA requires local agencies to form groundwater sustainability agencies (GSAs) for the high and medium priority basins (DWR, 2025a, 2025b, 2025c). GSAs develop and implement groundwater sustainability plans (GSPs) to avoid undesirable results and mitigate overdraft within 20 years. Compliance with the SGMA is overseen by the California Department of Water Resources, which serves two roles:

- Regulatory oversight through evaluation and assessment of GSPs
- Ongoing assistance to local agencies through development of BMPs and guidance, planning assistance, technical assistance, and financial assistance.

The Proposed Project site traverses the following groundwater planning areas managed by the associated GSPs:

- Owens Valley Groundwater Basin Groundwater Sustainability Plan (December 2021): The Owens Valley Groundwater Authority prepared the Owens Valley Groundwater Basin GSP, which covers approximately 1,037 square miles in Mono County, Inyo County, and the City of Bishop, of which the majority are federal and state-administered lands. Additionally, the City of Los Angeles is the largest landowner in the Owens Valley Basin (approximately 38 percent of the land) and also owns the majority of groundwater and surface water rights. The Owens Valley Groundwater Basin has been assigned a low priority status by the California Department of Water Resources (DWR), which indicates that as a whole, groundwater within the basin is managed sustainably with respect to SGMA.
- Indian Wells Valley Groundwater Basin Groundwater Sustainability Plan (January 2020): The Indian Wells Valley Groundwater Authority (IWVGA) prepared the Indian Wells Valley Groundwater Basin (IWVGB) GSP (January 2020). The IWVGB is located in the northwestern part of the Mojave Desert and underlies approximately 600 square miles of land in portions of the counties of Kern, Inyo, and San Bernardino. Ridgecrest is the only incorporated community in the Indian Wells Valley with a population of approximately 27,000 people. It has been well documented that the IWVGB has been in overdraft since at least the 1960s and that current Basin outflows exceed Basin inflows by approximately four times. As a result, the IWVGB GSP identifies projects and management actions required to be implemented

to avoid and reduce continued overdraft conditions such that operation of the IWVGB will be within its future sustainable yield. Urban Water Management Planning Act (UWMP).

In 1983, the California Legislature created the Urban Water Management Planning Act (UWMPA). The UWMPA requires urban water suppliers serving over 3,000 customers or supplying at least 3,000 acre-feet of water annually to prepare and adopt an urban water management plan every five years, and demonstrate water supply reliability in a normal year, single dry year, and droughts lasting at least five years over a twenty-year planning horizon. Urban Water Management Plans (UWMPs) are required to be consistent with GSPs and therefore must address groundwater sustainability where applicable. The Proposed Project traverses lands within the following UWMP service areas:

- AVEK Urban Water Management Plan (2021): The Antelope Valley East Kern (AVEK) prepared the AVEK UWMP (2021) to guide the long-term management of AVEK's service area, which encompasses nearly 2,400 square miles in northern Los Angeles and eastern Kern counties and a small portion of Ventura County. AVEK delivers treated water from the State Water Project (SWP) and groundwater, and "banks" SWP water using the groundwater basins. The primary groundwater basin in AVEK's service area is the Antelope Valley Groundwater Basin, which is approximately 90 percent adjudicated. (AVEK, 2021)
- Mojave Water Agency Urban Water Management Plan (2020): The Mojave Water Agency (MWA) prepared the 2020 Urban Water Management Plan (UWMP) to provide the legal and technical water management foundation for MWA's approximately 4,600 square-mile service area in eastern San Bernardino County. MWA's service area includes the Mojave groundwater basin and its subareas, which is adjudicated. MWA serves as the watermaster for the Mojave Basin, and wholesale supplier to numerous retail water suppliers.

3.12.2.3. Local Regulations, Policies and Standards

Pursuant to General Order 131-D, the Project is not subject to local authority because the CPUC has exclusive jurisdiction over the siting, design and construction of electric power line projects, distribution lines, substations, and electric facilities constructed by public utilities subject to CPUC jurisdiction.

Most counties and cities have floodplain and drainage regulations that regulate floodplain development. These regulations generally prohibit floodplain development that would result in flooding of the development itself and prohibit floodplain development that would result in adverse flooding impacts on other property. For instance, floodplain encroachments that raise water levels on other property are generally prohibited, as are diversions and concentrations of flow. The Proposed Project would cross designated floodplains that are under the jurisdiction of Inyo, Kern, and San Bernardino Counties, and the City of Barstow and would be required to follow all applicable federal, state and local regulations for construction activities that could encroach on or impact floodplains.

3.12.3. Environmental Impacts of the Proposed Project

3.12.3.1. Impact Analysis Approach

The impact analysis is based on an assessment of baseline conditions relevant to the site climate, topography, watersheds and surface waters, groundwater, floodplains, and surface water use, described in Section 3.12.1. These baseline conditions were evaluated based on their potential to be affected by construction activities as well as operations and maintenance activities related to the Proposed Project and alternatives. Potential impacts were then identified based on the predicted interaction between construction, operations, and maintenance activities with the affected environment. While the baseline conditions are formally defined as of the time of the 2020 Notice of Preparation, these conditions have not changed substantially since that time.

Impacts are described in terms of location, context and intensity, and identified as being either short- or long-term, or direct and indirect in nature. Beneficial as well as adverse impacts are identified, with a

discussion of the effect and risk to water quality and public health and safety, and potential violation of environmental laws. Mitigation measures are recommended to avoid or minimize impacts.

There are no Applicant Proposed Measures (APMs) dedicated specifically to hydrology and water quality. Table 3.12-1 lists the two Biological Resources APMs and two Hazards and Hazardous Materials APMs that that would reduce the Project's impacts with respect to hydrology and water quality. Implementation of these APMs is considered part of the Proposed Project for purposes of the evaluation of environmental impacts.

Table 3.12-1. Applicant Proposed Measures – Hydrology and Water Quality

APM	Description
Biological Resources	
APM BIO-RES-1	**Habitat Restoration and Revegetation Plan.** Restore or revegetate temporary disturbance areas. SCE shall prepare and implement a Habitat Restoration and Revegetation Plan (HRRP), to restore or revegetate all temporary disturbance areas. The Draft HRRP shall be submitted to CPUC and BLM review and approval prior to the beginning of ground-disturbing activities. SCE shall incorporate all requested revisions in coordination with the CPUC and BLM and finalize the HRRP within 12 months from the start of construction. For all revegetation or restoration sites, the HRRP shall include: ■ Revegetation or restoration goals and objectives, based on vegetation type and jurisdictional status of each site. ■ Quantitative success criteria. ■ Implementation details as applicable for each site, including but not limited to 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. ■ Maintenance details, including but not limited to irrigation or hand-watering schedule and equipment, erosion control, and weed control measures. ■ 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. ■ Adaptive management procedures such as reseeding, re-planting, drainage repairs, adjustments to irrigation or weeding schedule, and extension of maintenance beyond the original schedule, to repair or remediate sites not on track to meet success criteria, or not meeting the criteria at the close of the originally scheduled monitoring period. For temporary disturbance in common vegetation or habitat (e.g., creosote bush scrub) or in disturbed areas such as roads or agricultural lands, the overall goals of the HRRP will be revegetation to minimize weed invasion, dust generation, and soil erosion. For these sites the goals, objectives, and success criteria specified in the HRRP will be compatible with requirements of the Storm Water Pollution Prevention Plan (SWPPP), the Integrated Weed Management Plan (IWMP, APM BIO-RES-2) and any additional mitigation requirements related to soils, water, air quality, or visual resources. No additional goals, objectives, and success criteria regarding habitat condition are required. For sensitive habitat types including but not limited to wetlands and riparian habitats, the overall goals of the HRRP will be restoration to replace significant habitat values. For these sites the goals, objectives, and success criteria specified in the HRRP will also include (i.e., in addition to those identified above) native species cover, density, and species richness compatible with the specific vegetation and habitat type. For all revegetation or restoration areas, if a fire, flood, or other disturbance beyond the control of SCE, CPUC, and BLM damages the area within the monitoring period, SCE will restore to conditions similar to adjacent impacted areas. If a second event occurs, no replacement is required. For all revegetation (per SWPPP requirements) or restoration (per the HRRP) areas, seed and/or potted nursery stock of locally native species will be used. The list of plants observed during

APM	Description
	botanical surveys of the project area will be used as a guide to site-specific plant selection, additional appropriate species may be included. Monitoring of the revegetation sites will be conducted according to requirements of the SWPPP, the IWMP (APM BIO-RES-2), and any additional mitigation requirements related to soils, water, air quality, or visual resources. Monitoring of the restoration sites will continue annually for up to five (5) years or less than five years if the defined success criteria are achieved. SCE will be responsible for implementing adaptive management as needed. Following adaptive management, each site will continue to be subject to the success criteria required for the initial restoration. Reporting. Reporting of revegetation will be according to requirements of the SWPPP, the IWMP (APM BIO-RES- 2), and any additional mitigation requirements related to soils, water, air quality, or visual resources. For all restoration areas, SCE will provide annual reports to the CPUC and BLM verifying the total vegetation acreage subject to temporary and permanent disturbance, identifying which items of the HRRP have been completed, and which items are still outstanding. The annual reports will also include a summary of the restoration activities for the year, a discussion of whether success criteria were met, any adaptive management conducted and recommendations for remedial action, if warranted, that are planned for the upcoming year. Each annual report will be submitted within 90 days after completion of each year of restoration work.
APM WET-1	**Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats.** The project shall avoid and/or minimize impacts to all state and federally jurisdictional waters, wetlands, and riparian habitat that occur within the Project area to the maximum extent 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 to the maximum extent feasible. The implementation of appropriate Best Management Practices (BMPs) (e.g., silt fencing, straw wattles, secondary containment, avoiding fueling in close proximity to waters, etc.) shall be utilized to ensure that indirect impacts to jurisdictional waters, wetlands and riparian areas are avoided or minimized to the maximum extent feasible. BMPs are also necessary to reduce the risk of an unintended release of sediments or other materials into jurisdictional waters. New and upgraded roadways will use at-grade type stream crossings where possible. Stockpiled and bermed sediment will be redistributed or removed from the site so as not to cause water impoundment or induce hydromodification. New poles will be sited outside stream channels to the extent possible. If permanent impacts to waters, wetlands, and riparian habitats are unavoidable, they shall be mitigated for at a minimum of a 1:1 ratio, or at a ratio determined by the applicable Resource or Land-Use 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, Bureau of Land Management, etc.).
Hazards and Hazardous Materials	
APM HAZ-1	**Prepare a Hazardous Materials Management Plan.** SCE will prepare and implement a Hazardous Materials Management Plan (HMMP)/Hazardous Materials Business Plan (HMBP) during project construction. The plan 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, PPE training, and release reporting requirements. It will also include fueling and maintenance procedures for helicopters and construction equipment.

APM	Description
	If on site refueling is necessary, BMPs shall be implemented in accordance with the project SWPPP. Refueling stations and fuel tanks will be located, maintained, and operated during construction in accordance with applicable laws and regulations pertaining to hazardous materials. If more than 1,320 gallons of petroleum products in containers greater than 55-gallons, a SPCC plan must be created prior to products being brought on-site. All construction personnel, including environmental monitors, will be made aware of state and federal emergency response reporting guidelines for accidental spills.
APM HAZ-2	**Prepare a Soil Management Plan.** 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. The Soil Management Plan will direct that during grading or excavation work, the construction contractor shall observe the exposed soil for visual evidence of contamination. If visual contamination indicators are observed during construction, potentially contaminated soil will be segregated, sampled, and tested to determine appropriate treatment and disposal options. Work in the area of the potentially contaminated soil will be stopped until appropriate measures are determined based on the testing results and are taken to protect human health and the environment. If the soil is classified as hazardous, it will be properly managed on location and transported in accordance with the 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. If potentially-contaminated groundwater is encountered, then groundwater samples will be collected and tested to determine appropriate treatment and disposal. Hazardous materials will be transported, used, and disposed of in accordance with applicable rules, regulations, and SCE standard protocols designed to protect the environment, workers, and the public.

3.12.3.2. Impact Significance Criteria

Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.) provides guidance on assessing whether a project would have significant impacts on the environment. Consistent with Appendix G, the Proposed Project would have significant hydrology and water quality impacts if it would:

- **Impact HW-1:** Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality
- **Impact HW-2:** Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin
- **Impact HW-3:** 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, increase surface runoff, exceed stormwater drainage capacity, or redirect flood flows.
- **Impact HW-4:** In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.
- **Impact HW-5:** Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

3.12.3.3. Impacts and Mitigation Measures

The discussion of the construction and operations impacts in this section are considered common to all segments of the Proposed Project unless otherwise noted.

Impact HW-1: Violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.

Construction

LESS THAN SIGNIFICANT WITH MITIGATION. Construction of the Project would involve grading and soil disturbance including vegetation trimming or removal for access roads, staging areas, pull and tension sites, trenching sites and tower foundations. There are no known wet crossings located along the Proposed Project route, and the need for wet crossings is not anticipated at this time (SCE, 2020). Horizontal Directional Drill (HDD) and Jack-and-Bore techniques may be used as described in Section 2.4.4 for surface water crossings, if required.

Ground-disturbing activities could expose soils to erosion and subsequent transport downstream either via overland flow or within surface waters. Disturbed sediment could enter surface waters resulting in increased turbidity and alteration of channel characteristics that could reduce beneficial uses. HDD operations could result in frac-out that would have the potential for contamination of surface waters with drilling mud.

Construction would involve the use of hazardous materials such as vehicle fuel, hydraulic fluid, oil, grease, solvents, paint and concrete that if spilled or otherwise discharged to the ground surface could contaminate surface water or groundwater. Human wastes and trash from construction could be left in watercourses to the detriment of surface water quality. Dewatering trenches and tower foundations could encounter contaminated subsurface water that if discharged to the surface could contaminate surface waters.

Because the Proposed Project would disturb more than 1 acre, SCE is required to apply for coverage under a General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order 2009-0009-DWQ as amended by Order 2010-0014-DWQ. This general permit requires the preparation of a SWPPP and implementation of BMPs to address material management, non-stormwater discharge, sediment discharge, and erosion control to meet water quality standards. Site-specific BMPs would be developed including, but not limited to erosion and sediment control, sediment stabilization, and good housekeeping.

The Proposed Project crosses the Owens River and the Mojave River and is near the Haiwee Reservoir. With implementation of the project specific SWPPP and compliance with the terms and conditions of federal and state permits, the Proposed Project activities would not result in water quality impacts or violate the total maximum daily loads (TMDLs) for the Mojave River, Owens River, or Haiwee Reservoir. Project-specific stormwater BMPs would be included in the SWPPP and would not result in exceedances for total dissolved solids in these surface waters by retaining construction-related stormwater runoff onsite. Therefore, construction of the Proposed Project would not contribute to the degradation of water quality within a 303(d) listed (impaired) waterbody.

Materials used during construction (e.g., diesel fuel, hydraulic fluid, oils, grease, and concrete) have the potential to be transported by storm water runoff and threaten aquatic life. These materials could violate water quality standards if they come in contact with storm water and/or are transported to surface water or groundwater through infiltration. The handling, storage, and disposal of potentially hazardous materials would be detailed in the Hazardous Materials Management Plan (HMMP) (see APM HAZ-1), and specific measures to manage hazardous materials would also be addressed in the SWPPP.

Development and implementation of the required SWPPP would ensure no degradation of water quality resulting from disturbance of ground surfaces by construction activities. Construction-related spills of hazardous materials and deposition of other wastes would also be addressed by the SWPPP as well as by the HMMP and the use of portable toilets. Any groundwater encountered during trenching or excavation for tower foundations, which is unlikely due to the depth of groundwater throughout the project area, would be disposed of according to RWQCB requirements in compliance with the SWPPP. Implementation

of the SWPPP would include BMPs for all project construction components which would include any use of HDD or jack and bore techniques. Drilling muds would be disposed of according to regulations to avoid contamination of surface waters. No wastewater would be discharged from the site.

Construction or earth moving activities including vegetation removal, rehabilitation of existing access roads, and construction of new spur roads have the potential to create stormwater runoff during rain events and violate water quality standards. With the implementation of BMPs from the SWPPPs required under the state construction stormwater permit program, and compliance with terms and conditions of other required permits (including ministerial grading permits), the Proposed Project would not violate water quality standards or applicable waste discharge requirements associated with construction activities. With implementation of the project-specific BMPs provided in the SWPPP and with proper disposal of any groundwater encountered during construction activities, the Proposed Project would not violate any water quality standards or waste discharge requirements; therefore, impacts would be less than significant.

As shown in Table 3.12-1, four APMs are included in the Project by SCE to prevent the degradation of surface or ground water quality. Each of these APMs was developed to address specific issues of concern with respect to potential impacts to water quality:

- APM BIO-RES-1 (Habitat Restoration and Revegetation Plan) would ensure revegetation or restoration of disturbed areas to minimize erosion.
- APM WET-1 (Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats) would avoid disturbance within jurisdictional waters and riparian areas, minimizing erosion and habitat loss.
- APM HAZ-1 (Prepare a Hazardous Materials Management Plan) would ensure proper handling of hazardous materials and reduce likelihood of spills into waters or waterways.
- APM HAZ-2 (Prepare a Soil Management Plan) would require proper handling of impacted soil to reduce likelihood of water contamination.

However, even with implementation of the four APMs and the SWPPP, construction of the I-C Project may still result in significant impacts to water quality depending on the extent and scale of earth disturbance from construction grading and excavation work. For this reason, Mitigation Measure HW-1a (Drainage, Erosion, and Sedimentation Control Plan) has been identified to require further detailed review and delineation of the construction process by a professional engineer or Qualified SWPPP Developer and require additional protective measures that are not defined in the APMs and exceed SWPPP requirements. This measure is recommended to ensure that potential impacts to water quality standards or degradation of surface water quality due to erosion impacts or disturbance of drainage patterns are less than significant. With implementation of this measure and the APMs, construction impacts would be less than significant.

Mitigation Measure for Impact HW-1

HW-1a **Drainage, Erosion, and Sedimentation Control Plan (DESCP).** At least 60 days prior to site mobilization, the Applicant shall submit to the Regional Water Quality Control Board, the BLM, and Inyo, Kern, and San Bernardino Counties for review and approval a DESCP for managing stormwater during Project construction and operations. The DESCP can be included in the Stormwater Pollution Prevention Plan (SWPPP) and must ensure proper protection of water quality and soil resources, address disturbed soil stabilization treatments in the Project area for both road and non-road surfaces, and identify all methods used for temporary and final stabilization of inactive areas. The plan must also cover all linear Project features and any other Project components subject to disturbance. The DESCP shall contain, at a minimum, the elements presented below that outline site management activities and erosion and sediment-control Best Management Practices

(BMPs) to be implemented during site mobilization, excavation, construction, and post-construction (operating) activities.

- *Site Delineation*. All areas subject to soil disturbance (including new and/or improved access and spur roads, excavation, or any other soil disturbing activity) for the Project shall be delineated showing boundary lines of all construction areas and the location of all existing and proposed structures and drainage facilities that would be directly affected by soil-disturbing activities (such as stream crossings or public storm drains by the right-of-way and access roads).
- *Clearing and Grading Plans*. The DESCP shall provide a delineation of all areas to be cleared of vegetation. The plan shall provide elevations, slopes, locations, and extent of all proposed grading as shown by contours, cross sections, or other means. The locations of any equipment and staging or laydown areas, fill areas, or other special features shall also be shown. Existing and proposed topography shall be illustrated by tying in proposed contours with existing topography.
- *Erosion Control*. The plan shall address treatments to be used on exposed soil during construction and operation including specifically identifying all chemical-based dust palliatives, soil bonding, and weighting agents appropriate for use that would not cause adverse effects to vegetation. BMPs shall include measures designed to provide temporary stabilization of inactive disturbed areas and will be applied as soon as possible consistent with the Mojave Desert Air Quality Management District and SWRCB Construction General Permit requirements. The timing of suppressant or binder application will occur as soon as possible and consistent with dust and stormwater permit requirements. Any soil stabilizers proposed shall be approved for use by the Project's Restoration Specialist to ensure that the products shall not impede restoration goals.
- *Best Management Practices*. The DESCP shall identify on the topographic site map(s) the location of the site-specific BMPs to be employed to protect drainage structures, such as public storm drains, downstream of soil disturbance activities. BMPs shall include measures designed to control dust, stabilize construction access roads and entrances, and control stormwater runoff and sediment transport.
- *Best Management Practices Narrative*. The DESCP shall show the location, timing, and maintenance schedule of all erosion- and sediment-control BMPs to be used prior to initial grading, during excavations and construction, final grading/stabilization, and operation. The maintenance schedule shall include post-construction maintenance of structural-control BMPs.
- The DESCP shall be prepared, stamped, and sealed by a professional engineer or Qualified SWPPP Developer. The DESCP shall include copies of recommendations, conditions, and provisions from the Regional Board and/or BLM.
- The DESCP may be part of the SWPPP and shall be kept onsite, kept updated, and readily available on request. The DESCP and SWPPP must demonstrate compliance with other water quality permits which may have restrictions on types of erosion or sedimentation control materials used. SWPPP inspection reporting will be consistent with the requirements of the SWRCB Construction General Permit.

Operations and Maintenance

LESS THAN SIGNIFICANT. Areas disturbed during construction would be revegetated where possible according to APM BIO-RES-1 (Habitat Restoration and Revegetation Plan) to avoid ongoing disturbance of sediment by rainfall and runoff during operations and maintenance activities. This action will minimize erosion during the operational timeframe.

Operations activities would be similar to those ongoing for the existing line. Activities would consist of repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, replacing poles and towers, tree trimming, brush and weed control, and access road maintenance. Operations and maintenance impacts would create minimal exposure of surface or ground water to contaminants, and impacts would be less than significant, and no mitigation is required.

Impact HW-2: Substantially decrease groundwater supplies or interfere with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

Construction

LESS THAN SIGNIFICANT. Water used to support Proposed Project construction would be primarily required for dust control and revegetation. As described in Section 2.4.1.9 (Water Uses and Sources), SCE conservatively estimates a maximum of 3,100 acre-feet of water would be used over the construction period and amounts to approximately 1,000 acre-feet during each calendar year of construction.

As analyzed in further detail in Section 3.20, Utilities and Service Systems, this water would be obtained from numerous local water districts), which use a combination of surface water and groundwater for water supplies, and the water demands during construction would not cause a substantial decrease in groundwater supplies. All of Segment 1, and the northern portion of Segment 2 in Kern County (where the majority of the Proposed Project construction would take place) are located within the Inyo-Mono Integrated Regional Water Management Program (IRWMP) region. The remainder of the Project is located within the region covered by the Mojave Water Agency (MWA).

Owens Valley Groundwater Basin. The majority of Segment 1 is located over the Owens Valley Groundwater Basin, which covers approximately 1,037 square miles. The Owens Valley Groundwater Authority (OVGA) prepared the Owens Valley Basin GSP, which identifies that while the basin area is highly dependent on groundwater for water supplies, the Basin has not been identified with overdraft conditions. The Owens Valley Basin is characterized as a low-priority basin, which indicates that as a whole, groundwater in the basin is managed sustainably with respect to SGMA. Given the overall sustainable conditions in the Basin, the GSP does not propose to immediately change the water demands or operations of existing wells within the Basin. During the construction of the Proposed Project, it is expected that SCE would purchase water from local community services districts and/or municipal or mutual water company water providers. As a result of the current sustainable conditions of the Owens Valley Basin, SCE's construction water needs would not significantly affect the sustainable groundwater management of the Owens Valley Groundwater Basin.

Indian Wells Valley Groundwater Basin. The southern portion of Segment 1 and the northern portion of Segment 2 are located over the Indian Wells Valley Groundwater Basin, which underlies approximately 600 square miles of land in portions of Kern, Inyo, and San Bernardino counties. IWVGB serves as the sole supply of potable water in this region, and as described in Section 3.12.2.2, the groundwater basin has been in overdraft conditions since at least the 1960s (IWVGA, 2020). However, IWVGA recognizes the need to balance groundwater management with serving municipal, domestic, agricultural and other commercial uses. As a result, the IWVGB GSP has identified actions to be implemented to avoid and reduce continued overdraft conditions such that operation of the IWVGB will be within its future sustainable yield. The primary initial management action is Management Action No. 1, Implement Annual Pumping Allocation Plan, Transient Pool and Fallowing Program. Under this program, pumping fees, or Augmentation Fees would be assessed on pumped water, where the fees would provide funding for the development of supplemental water supplies and other projects and management actions to achieve sustainability (IWVGA, 2020). Groundwater pumpers in the region include Indian Wells Valley Water District, Inyokern Community Services District, Searles Domestic Water Company, and mutual water companies. In the event that SCE would purchase water during construction in this region, the costs of the water would include Augmentation Fees that would provide funding for the IWVGA groundwater projects and management

actions to support sustainable use of the groundwater basin. As a result, the Proposed Project would support the sustainable groundwater management of the IWVGB.

Antelope Valley-East Kern Water Agency. The Antelope Valley-East Kern Water Agency (AVEK) manages approximately 2,400 square miles in several counties including eastern Kern County, which includes a short portion of Segment 2. AVEK's water supplies are comprised of groundwater production and imported SWP water, which AVEK will bank to meet demands during drought periods. Based on the AVEK UWMP (AVEK, 2021) under worst-case five-consecutive year drought conditions, AVEK estimates a water demand of 50,990 acre-feet with a supply estimated at 50,990 acre-feet in 2030, with no surplus. It should be noted that AVEK takes part in water exchanges and water transfers with other State Water contractors, including suppliers within the greater Antelope Valley, such as Kern County Water Agency, Littlerock Creek Irrigation District, Palmdale Water District, and Santa Clarita Valley Water Authority, to help meet demands within the region during periods of drought (AVEK, 2021). AVEK's retailers include California Water Service Company, City of California City, Los Angeles County Waterworks District, Quartz Hill Water District, and Rosamond Community Services District. As a result of the AVEK's management of the Antelope Valley Groundwater Basin for water banking and available options to procure more water in the event of worst-case scenario drought conditions, should SCE require purchasing water from AVEK or its retailers during construction, the Proposed Project would not result in significant impacts to impede the sustainable management of the Antelope Valley Groundwater Basin.

Mojave Water Agency. The Mojave Water Agency (MWA) manages a service area of approximately 4,900 square miles of eastern San Bernardino County, which includes the southern portion of Segment 2 and all of Segments 3N and 3S. The MWA also services as the watermaster for the Mojave Basin, and wholesale supplier to numerous retail water suppliers. Almost all of the water use within the Region is supplied by pumped groundwater (MWA, 2020). The MWA forecasts water demands in its service area based on predicted increases in land uses and population growth. Based on the MWA UWMP, under worst-case five-consecutive year drought conditions, MWA estimates a water demand of 135,300 acre-feet with a supply estimated at 141,492 acre-feet in 2030, resulting in a surplus of 6,192 acre-feet (MWA, 2020). This surplus represents available waters that are not committed to land, development and population projections, or other uses. The Proposed Project's conservative estimate of approximately 1,000 acre-feet of annual water consumption represents approximately 16.1 percent[5] of the 2025 estimated MWA surplus water supply. As a result of the sufficient groundwater supplies in the region, and the Proposed Project's construction water demand would not substantially impede sustainable groundwater management of the basin.

Water would be required for dust control and to stabilize unvegetated areas during construction and earth-disturbing activities and would be obtained from existing surface water and groundwater-fed supplies sourced from one or more local water districts located within the IRWM and MWA as described above. As discussed in Section 2.4.1.9, it is estimated that up to 3,100 acre-feet of water may be used over the estimated 3-year construction period; this is a highly conservative estimate, and actual water consumption may be less due to refinements in construction scheduling during final engineering (SCE, 2020).

Shallow groundwater may be encountered during installation of TSPs and LWS poles and underground facilities. In these instances, excavations would be dewatered and either discharged on-site to the surface or stored in Baker tanks[6] or similar equipment prior to disposal off-site; this water may also be used for dust control. Groundwater dewatered from excavations and discharged to land or used for dust control would infiltrate into the existing groundwater system; during this process some groundwater would be

[5] 141,492 acre-feet (estimated supply, 2030) – 135,300 acre-feet (estimated demand, 2030) = 6,192 acre-feet (surplus). Based on a conservatively estimated construction water use of 1,000 acre-feet per year, the Proposed Project's construction water consumption would represent 16.1 percent (or 1,000 acre-feet/6,192 acre-feet) of the MWA's annual surplus water production.

[6] A Baker tank is a portable, temporary storage tank that can hold large volumes of liquids.

lost to evapotranspiration, but this loss would be minor and would not substantially deplete groundwater supplies. Dewatering operations would be localized, of short duration, and of a small volume, and would not substantially decrease groundwater supplies. Construction activities required for the installation of pole foundations and related activities would not significantly alter groundwater recharge in the region.

In summary, as analyzed above for major groundwater basin management regions along the Proposed Project's route, the Proposed Project would not substantially impede sustainable groundwater management of the basins. In areas where the groundwater basin is adjudicated and in overdraft conditions, existing programs are available for SCE to purchase water for temporary construction use while still supporting sustainability efforts. Further, as construction water would be sprayed onto the ground, a portion of the water may infiltrate to the groundwater table. In conclusion, the Proposed Project would result in less than significant impacts to impede sustainable groundwater management of groundwater basin, and no mitigation is required.

Operations and Maintenance

LESS THAN SIGNIFICANT. Operations activities would be similar to those for the existing line. No increase in water use is expected. Operations impacts would therefore be less than significant, and no mitigation is required.

Impact HW-3: 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, increase surface runoff, exceed stormwater drainage capacity, or redirect flood flows.

Substantial Erosion or Siltation On- or Off-Site

Construction

LESS THAN SIGNIFICANT WITH MITIGATION. The Proposed Project route crosses several ephemeral and intermittent drainages as well as the Owens River and Mojave River. The Proposed Project involves construction earthwork activities that have the potential to result in erosion and siltation. The Project earth disturbance activities consist of vegetation removal and grading associated with the rehabilitation of existing access and spur roads and the establishment of structure installation and removal sites, pull sites, and other construction work areas; the installation of replacement subtransmission poles; the construction of new spur roads; and the establishment and use of staging areas. Many of the existing access and spur roads cross ephemeral or intermittent drainages or are located in areas that are prone to erosion and sedimentation. Rehabilitation of these existing access and spur roads and the construction of new spur roads may result in localized changes to the existing drainage patterns. Construction of new and replacement pole foundations would result in a small increase (totaling less than 1 acre) in above-ground impervious surfaces, but this would not result in significant changes to existing drainage patterns that could result in erosion and sedimentation on or off-site.

Removal, replacement, or installation of new subtransmission structures may cause minor changes in existing drainage patterns that would be temporary and localized in nature, such that the overall drainage patterns would remain unchanged. The Proposed Project would not alter the course of a stream or river. Final grading and contouring would return the work areas to pre-project conditions to the extent feasible. A site-specific SWPPP would be prepared as required by the SWRCB that would identify BMPs to reduce runoff rates which would minimize the potential for erosion and sedimentation that could alter drainage patterns.

Work within streams or drainages would be avoided to the extent feasible. However, where work within drainages is required, SCE would implement measures contained in APM WET-1 (Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats), including the implementation of appropriate BMPs (e.g., silt fencing and straw wattles) to reduce the risk of an unintended release of sediments

or other materials into waters, wetlands, and habitat. Potential streambank erosion and alteration of drainage areas would be minimized by restoring disturbed areas to the natural grade where possible, and through adherence to the proposed erosion and sediment control measures per implementation of APM WET-1. Where required, permits per CWA Sections 404 and 401 and CDFW 1602 LSAA would be obtained and all conditions of compliance would be implemented including, but not limited to, returning all drainage features temporarily impacted during construction to pre-project conditions (refer to Section 3.5, Biological Resources, for more details).

However, given the size and nature of the project, APM WET-1 and the SWPPP requirement do not provide adequately detailed and specific requirements to ensure that the erosion controls for all Proposed Project activities would not substantially alter the existing drainage pattern of the site or area in a manner that would result in a substantial erosion or siltation on- or off-site. Therefore, the impact would be significant without mitigation. Mitigation Measure HW-1a (Drainage, Erosion, and Sedimentation Control Plan) would ensure that construction impacts are less than significant by requiring specific actions to be defined in a Drainage, Erosion, and Sedimentation Control Plan (DESCP) that would be reviewed by the CPUC to ensure its completeness.

Mitigation Measure for Impact HW-3

HW-1a **Drainage, Erosion, and Sedimentation Control Plan (DESCP)** (see full text under Impact HW-1)

Operations and Maintenance

LESS THAN SIGNIFICANT. The Proposed Project involves replacement of a subtransmission line in a generally topographically flat area with existing linear infrastructure development, and the Project would not require changes to the existing topography that would substantially alter the existing drainage pattern of the area. Areas disturbed during construction would be revegetated where possible according to APM BIO-RES-1 (Habitat Restoration and Revegetation Plan) to avoid ongoing disturbance of sediment by rainfall and runoff during operations and maintenance activities. Operations and maintenance activities would be similar to those for the existing line and impacts would be less than significant and no mitigation is required.

Substantially Increase the Rate or Amount of Surface Runoff in a Manner That Would Result in Flooding On- or Off-site

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* As stated previously, the Proposed Project would result in a minor increase in impervious surface (total estimated less than 1 acre of new impervious surfaces) compared with existing conditions, and vegetation removal and grading would result in minor changes to drainage patterns. However, the overall drainage patterns would remain unchanged, and the Proposed Project would not alter the course of a stream or river. Construction of the Proposed Project would require a SWPPP and include measures to control stormwater runoff which would minimize the potential for significant alteration of drainage patterns that could result in flooding on-site or off-site. Improvements to existing access roads and spur roads and construction of new spur roads would include design considerations to maintain or improve drainage patterns.

A minimum number of new subtransmission structures are expected to be installed within known flood-plains based on the preliminary design of the Proposed Project. The new structures could cause local flow turbulence, but damaging flow diversions due to the presence of the new structures are unlikely because of the small tower footprint relative to the width of the floodplain, and the placement of most tower structures outside the active channel where the potential for damaging diversions is greatest. Those structures located in braided alluvial fans would be in areas where flow paths are naturally subject to variation and are of much greater extent than the footprint of the towers.

SCE would be required to implement, and has committed to the implementation of, the project SWPPP and its requirements to minimize erosion and control runoff and APM WET-1 (Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats). However, the implementation of the SWPPP and APM would not reduce the potential impacts for localized flooding to less than significant levels due the nature and extent of construction activities along the 262-mile ROW of the Proposed Project. The extent of this Project requires development of a more specific plan for erosion and runoff control. Therefore, the impact would be significant without mitigation. Mitigation Measure HW-1a (Drainage, Erosion, and Sedimentation Control Plan) requires preparation of a detailed plan, to be reviewed for completeness by the CPUC. Implementation of this plan would ensure that the Proposed Project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or a substantial increase in the rate or amount of surface runoff in a manner which would result in flooding on- or off-site. Therefore, Impact HW-3b would be less than significant with mitigation.

Mitigation Measure for Impact HW-3

HW-1a **Drainage, Erosion, and Sedimentation Control Plan (DESCP)** (see full text under Impact HW-1)

Operations and Maintenance

LESS THAN SIGNIFICANT. The project would not substantially alter the drainage pattern. Access roads would be constructed at-grade where possible, and temporarily disturbed areas would be restored to the existing condition. Towers may be repaired or occasionally replaced. This localized construction would not create a significant impact affecting drainage patterns. This impact would be less than significant, and no mitigation is required for operations and maintenance.

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

Construction

LESS THAN SIGNIFICANT WITH MITIGATION. During construction, earth disturbance activities have the potential to contribute runoff water. Grading of construction work areas, rehabilitation of access roads and spur roads, construction of new spur roads, and construction of subtransmission structure foundations could contribute to minor increases of polluted runoff during construction activities. These activities would be temporary, and impacts would be reduced by the implementation of BMPs identified in the project SWPPP and APM HAZ-1 (Hazardous Materials Management Plan). In addition, APM BIO-RES-1 (Habitat Restoration and Revegetation Plan) would require revegetation of the site to support the minimization of stormwater drainage.

In addition to implementation of the project SWPPP, APM BIO-RES-1 and APM HAZ-1 would be implemented for the Proposed Project to reduce the rate and amount of surface runoff to limit sources of polluted runoff. However, these requirements do not include the detail and specificity required in the DESCP that would be prepared in Mitigation Measure HW-1a (Drainage, Erosion, and Sedimentation Control Plan). With implementation of this measure, impacts would be less than significant.

Mitigation Measure for Impact HW-3

HW-1a **Drainage, Erosion, and Sedimentation Control Plan (DESCP)** (full text presented under Impact HW-1)

Operations and Maintenance

LESS THAN SIGNIFICANT. As described in Chapter 2, Project Description, the Proposed Project would not substantially increase the area of impervious surfaces that could result in a substantial increase in runoff. SCE

is currently performing operations and maintenance activities, including inspections, along the subtransmission lines that would be rebuilt and reconductored under the Proposed Project. No significant changes in current operations and maintenance activities are anticipated with implementation of the Proposed Project, and no significant impacts would be realized under this criterion during operations and maintenance activities. This impact is therefore less than significant, and no mitigation is required.

Alteration of the Course of a Stream or River or Through the Addition of Impervious Surfaces, in a Manner Which Would Impede or Redirect Flood Flows

Construction

LESS THAN SIGNIFICANT. As stated previously, the Proposed Project would result in a minor increase in impervious surface (total estimated less than 1 acre of new impervious surfaces) compared with existing conditions, and vegetation removal and grading would result in minor changes to drainage patterns. However, the overall drainage patterns would remain unchanged; the Proposed Project would not alter the course of a stream or river or impeded or redirect flood flows. The replacement subtransmission structures to be installed under the Proposed Project would not alter drainage patterns and would not have a large cross section that would significantly impede flood flows. Construction of the Proposed Project would require a SWPPP and include measures to control stormwater runoff which would minimize the potential for significant alteration of drainage patterns that could result in the impedance or redirection of flood flows. Improvements to existing access roads and spur roads and construction of new spur roads would include design considerations to maintain or improve drainage patterns.

A minimum number of new subtransmission structures, are expected to be installed within known floodplains based on the final design of the Proposed Project. The new structures could cause local flow turbulence, but damaging flow diversions due to the presence of the new structures are unlikely because of the small tower footprint relative to the width of the floodplain, and the placement of most tower structures outside the active channel where the potential for damaging diversions is greatest. Those structures located in braided alluvial fans would be in areas where flow paths are naturally subject to variation and are of much greater extent than the footprint of the towers.

Through the implementation of the project SWPPP and associated requirements to minimize erosion and control runoff and APM WET-1 (Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats), the Proposed Project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or a substantial increase in the rate or amount of surface runoff in a manner which would impede or redirect flood flows, and thus impacts would be less than significant and no mitigation is required.

Operations and Maintenance

LESS THAN SIGNIFICANT. The project would not substantially alter the drainage pattern that would impede or impact flood flows. Access roads would be constructed at-grade where possible and temporarily disturbed areas would be restored to the existing condition. Towers would be mostly replacement towers and would therefore be negligible in area in terms of overall increased flood risk. This impact is therefore less than significant with respect to operations and maintenance, and no mitigation is required.

Impact HW-4: Risk release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones.

Construction

LESS THAN SIGNIFICANT. The project is not adjacent to the coast nor to any large lakes and is therefore not subject to tsunamis nor seiche. While the majority of the Proposed Project is not be located within high flood hazard areas, portions of the project route cross or in the near vicinity of mapped 100-year

floodplains, as shown on Figure 3.12-1 through 3.12-3. In the event of a flood inundation event during construction, the project work areas have the potential to release pollutants such as sediments from areas where the earth has been disturbed and hazardous materials commonly associated with construction activities and construction equipment and vehicle use, such as petroleum products, cleaning fluids, etc. However, this impact would be minimized with SCE's implementation of the SWPPP BMPs, APM WET-1 (Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats), APM HAZ-1 (Hazardous Materials Management Plan), and compliance with the Clean Water Act and California regulations. As a result, this impact would be less than significant, and no mitigation is required.

Operations and Maintenance

LESS THAN SIGNIFICANT. The project would create no new feature that would be subject to releasing pollutants during floods. The operations impact is the same as for the existing transmission line operations. This impact is therefore less than significant, and no mitigation is required.

Impact HW-5: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Construction

LESS THAN SIGNIFICANT. The Proposed Project is located within the South Lahontan Basin area of the Lahontan Regional Water Quality Control Plan (Basin Plan). As discussed under Impact HW-1, SCE would be required to obtain a NPDES permit and implement the associated SWPPP, which would help achieve water quality objectives in the Basin Plan. Additionally, as described in Impact HW-2, the Proposed Project traverses areas within the Owens Valley Basin GSP, IWVGB GSP, AVEK UWMP, and MWA UWMP. As analyzed, the Proposed Project would not conflict with the water quality and groundwater sustainability programs in these plans. In summary, the Proposed Project would result in less than significant impacts and no mitigation is required.

Operations and Maintenance

LESS THAN SIGNIFICANT. Operations impacts are less than significant for the same reasons as for construction. The operations impact is the same as for the existing transmission line operations. This impact is less than significant, and no mitigation is required.

3.12.4. Mitigation Monitoring, Compliance, and Reporting

Table 3.12-2 presents the mitigation monitoring, compliance, and reporting information for hydrology and water quality. The full text of the mitigation measure is presented in Section 3.12.3.3.

Table 3.12-2. Mitigation Monitoring Program – Hydrology and Water Quality

Mitigation Component	Text or Description
Mitigation Measure HW-1a	**Drainage, Erosion, and Sediment Control Plan (DESCP)**
Location	All linear Project features and any other Project components subject to disturbance
Monitoring / Reporting Action	DESCP submitted to be submitted to Regional Water Quality Control Board, the BLM, and Inyo, Kern, and San Bernardino Counties
Effectiveness Criteria	DESCP is implemented as approved
Responsible Agency	Regional Water Control Board, BLM, and Inyo, Kern, and San Bernardino Counties
Timing	60 days prior to site mobilization

3.12.5. References

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WRCC (Western Regional Climate Center). 2019. WRCC Weather Data Plots. Available: https://wrcc.dri.edu/weather/. Accessed January 2025.

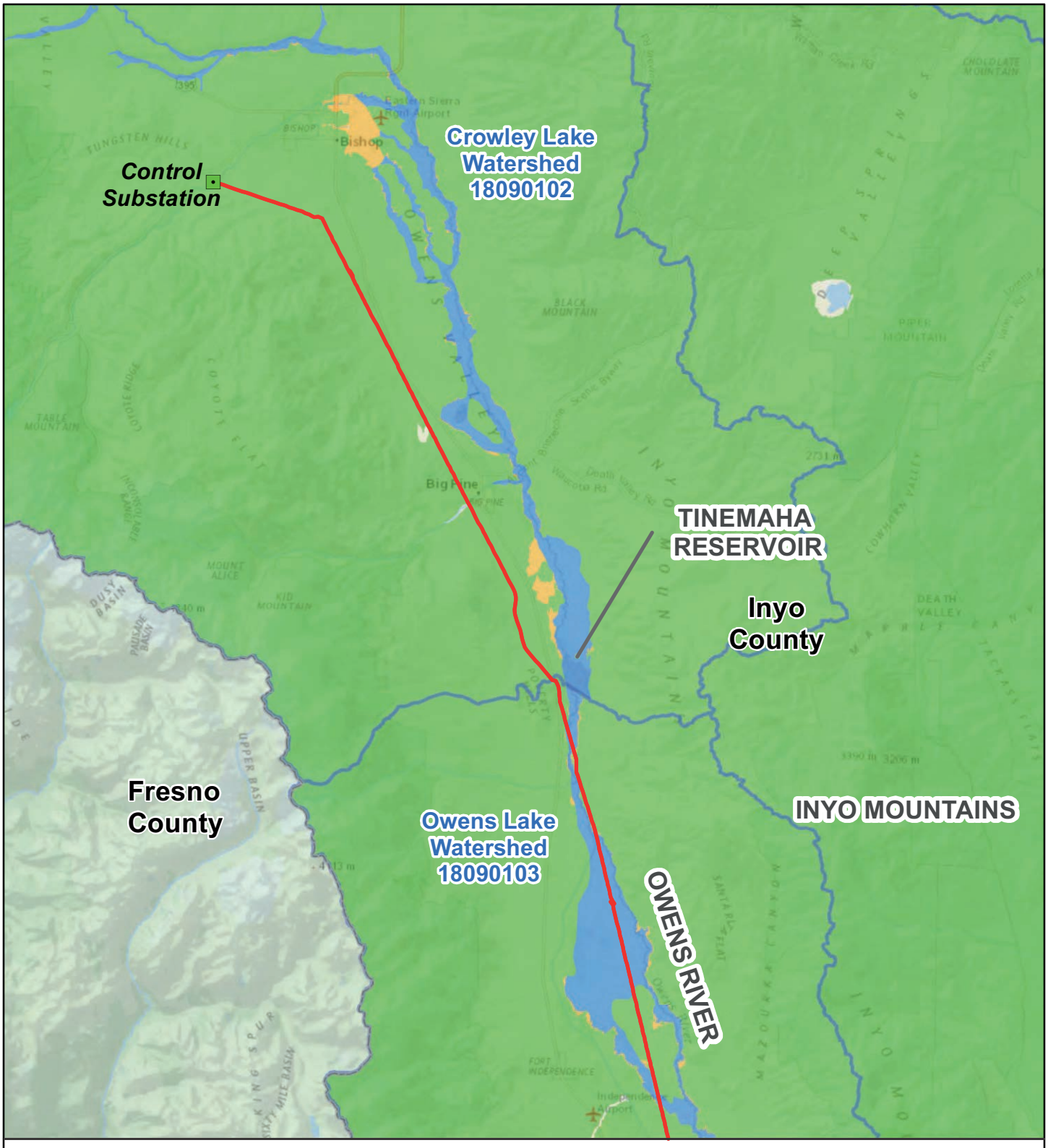

Figure 3.12-1a

Watersheds and Floodplains Segment 1 North

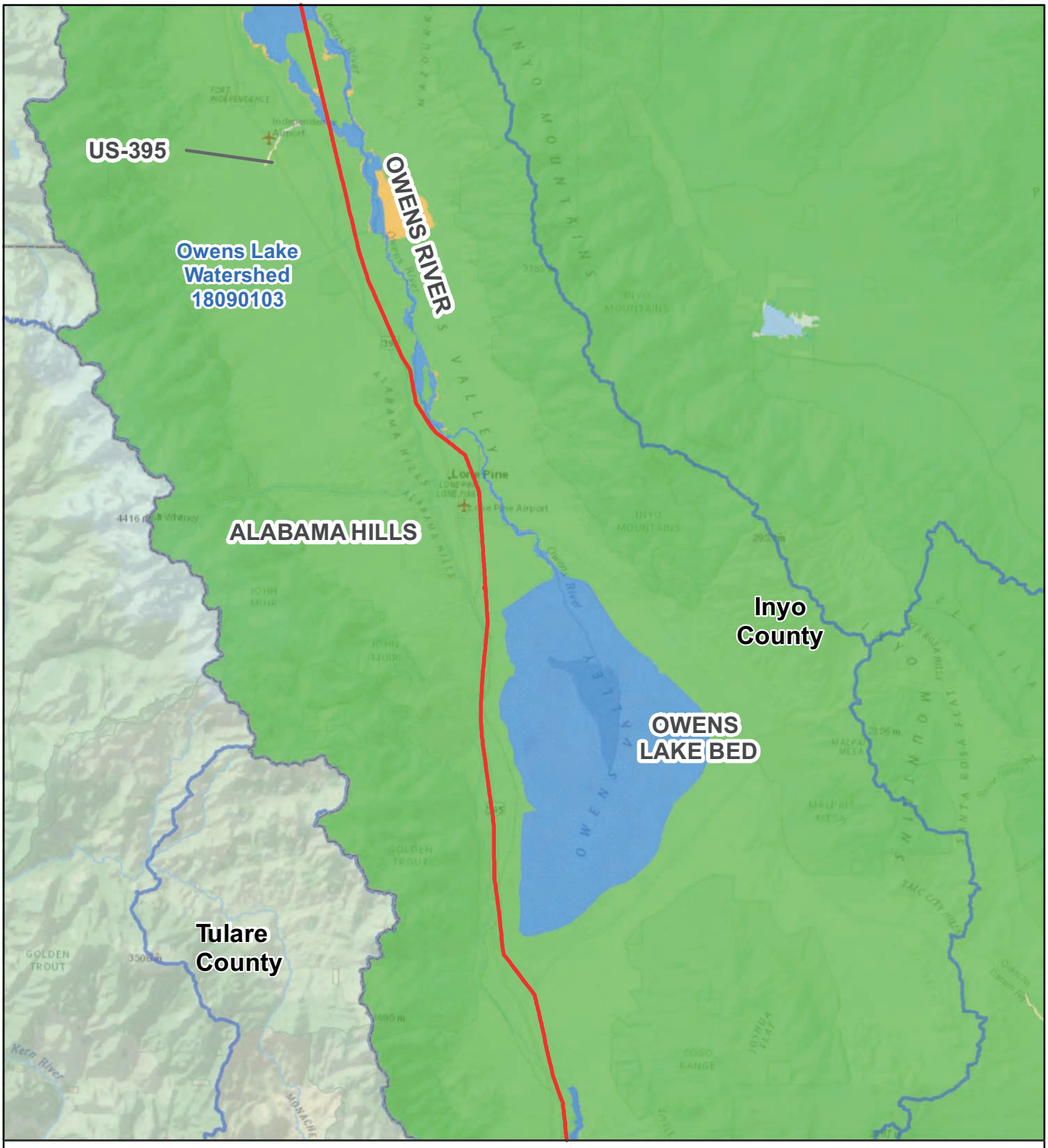

Figure 3.12-1b

Watersheds and Floodplains
Segment 1 Central

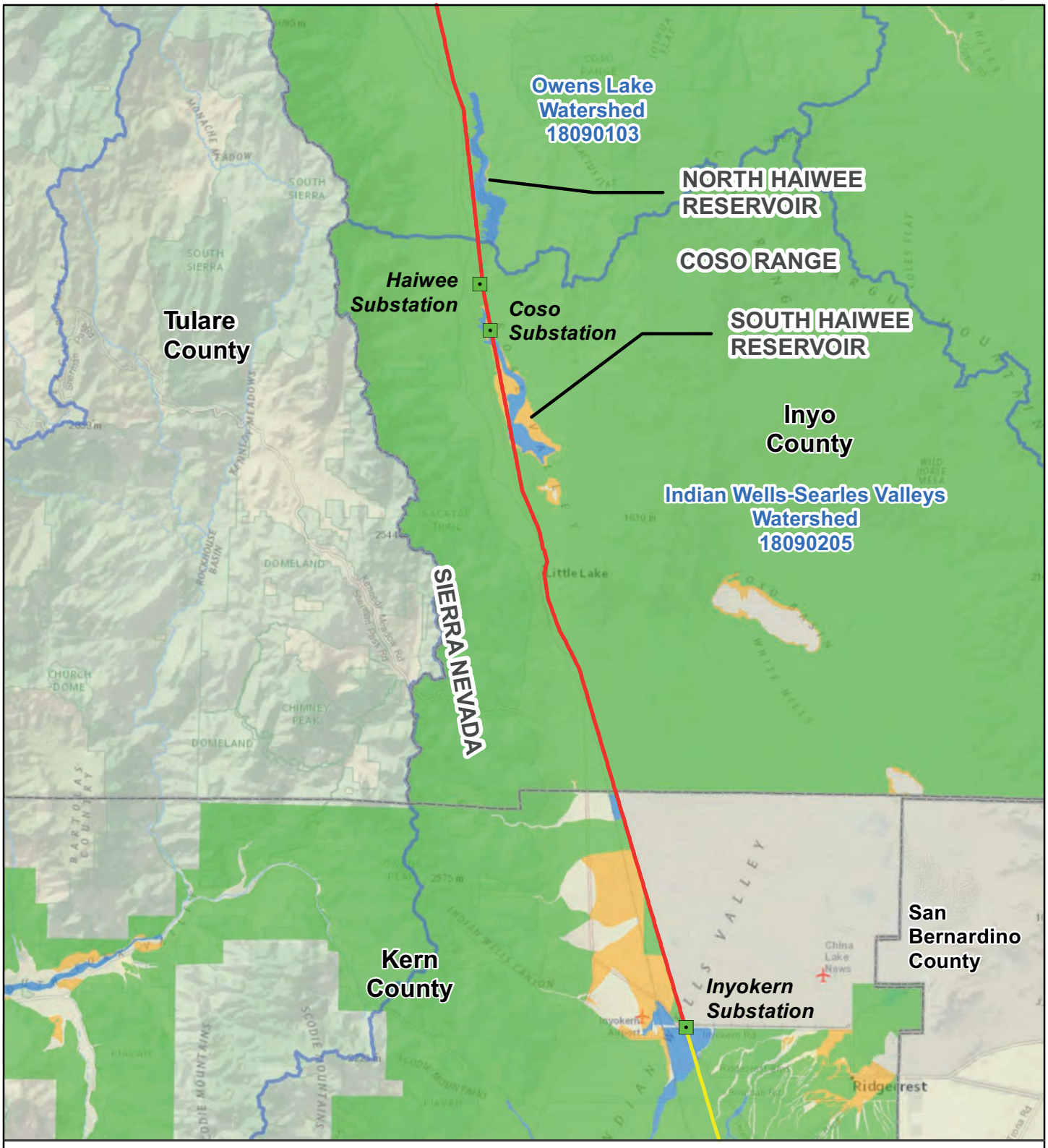

Figure 3.12-1c

Watersheds and Floodplains Segment 1 South

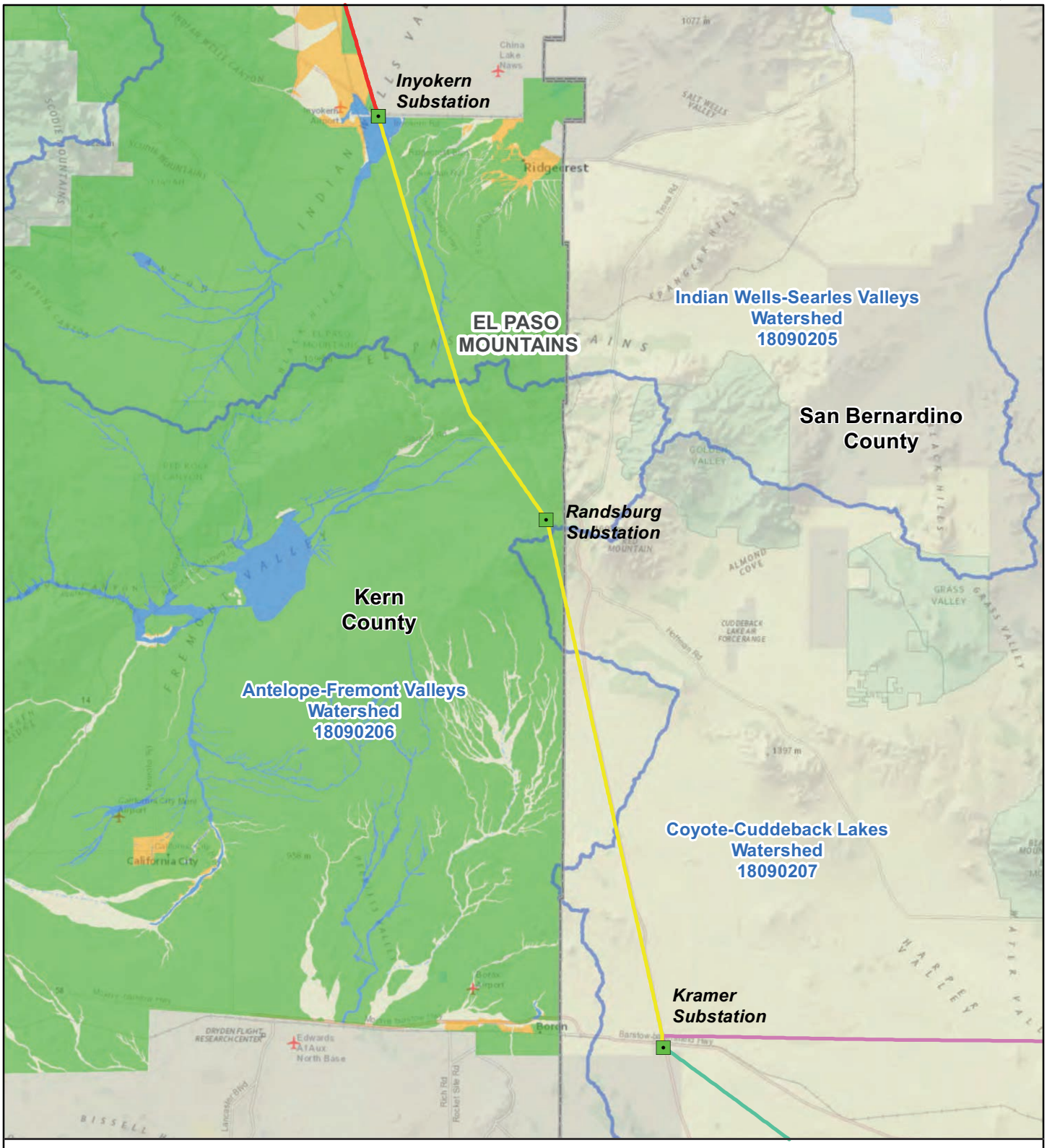

Figure 3.12-2

Watersheds and Floodplains Segment 2

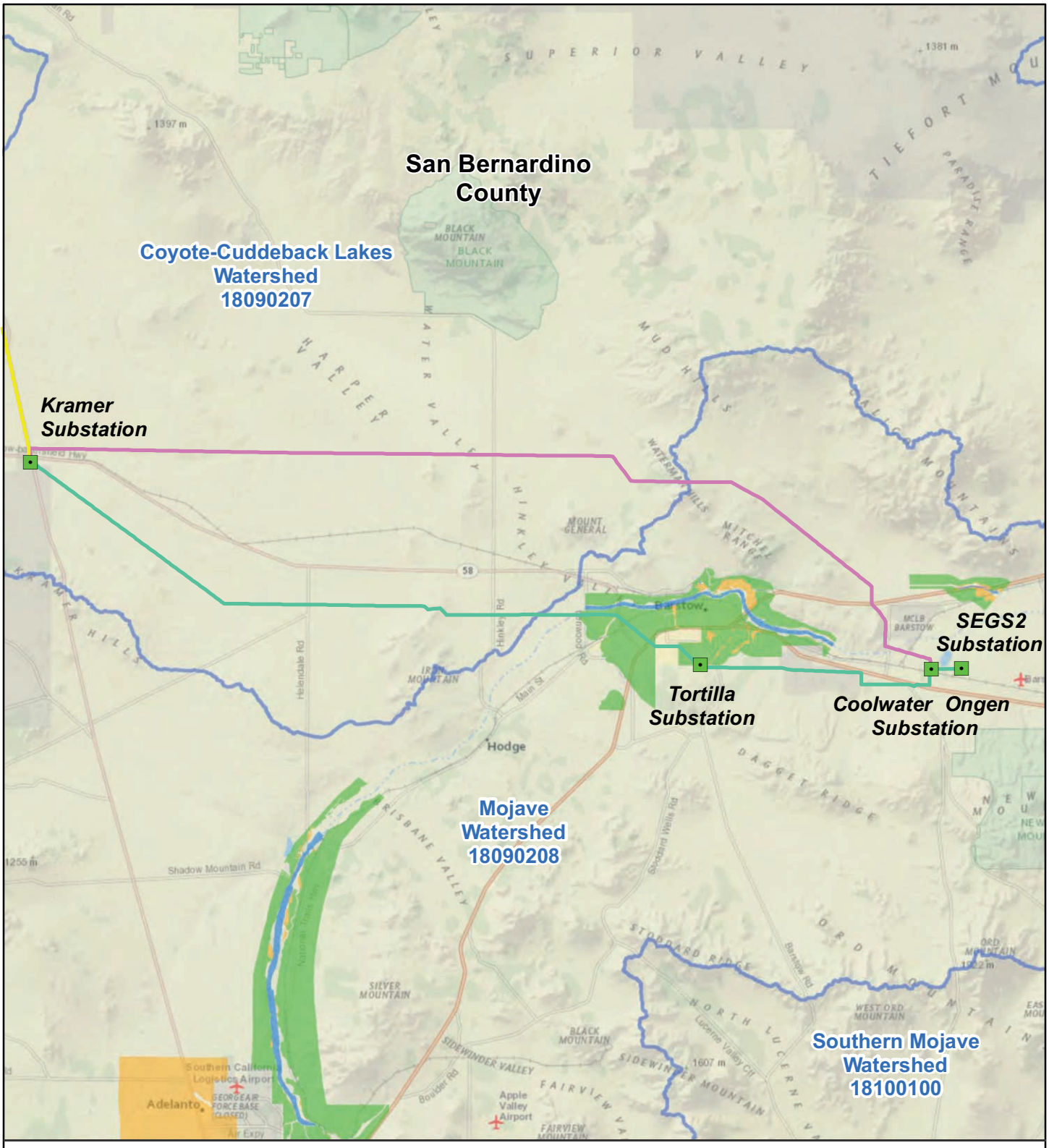

Figure 3.12-3

Watersheds and Floodplains Segments 3N and 3S

3.13. Land Use and Planning

This section describes existing environmental conditions and anticipated impacts associated with the Proposed Project for Land Use and Planning. Impacts evaluated in this section include (1) dividing an established community and (2) causing 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. Potential impacts to scenic resources are addressed in Section 3.2, Aesthetics. Potential impacts to habitat conservation areas (e.g., habitat conservation plans or natural community conservation plans) are discussed in the Section 3.5, Biological Resources. Potential impacts to recreation land uses and activities are also discussed in Section 3.18, Recreation.

The environmental setting for Land Use and Planning is presented in Section 3.13.1 and relevant regulations and standards are summarized in Section 3.13.2. Section 3.13.3 describes the impacts on the environment associated with implementation of the Proposed Project. Section 3.13.4 presents the mitigation monitoring, compliance, and reporting information, and Section 3.13.5 lists references cited in this section. Chapter 4 describes the environmental impacts of the alternatives to the Proposed Project. Cumulative impacts for all disciplines are considered in Chapter 5.

Inyo County submitted a scoping comment stating that "the County has limitations on the amount of electrical conveyance through the Owens Valley…" if there is any increase in conveyance capacity the Proposed Project should meet the requirements set forth in the County's General Plan (Richards, 2020). In addition, San Bernardino County submitted a scoping comment stating that the Proposed Project would cross San Bernardino County Flood Control District facilities and right-of-way for Mojave River in Segments 3S and 3N, and that the project EIR should address the need for encroachment permits and any associated impacts (Perry, 2020). The relevant scoping comments have been addressed in this section.

3.13.1. Environmental Setting

3.13.1.1. Regional Setting

The Proposed Project is located within Inyo County, Kern County, San Bernardino County, and the City of Barstow (refer to Figure 1-1, Proposed Project Route and Segments, in EIR Chapter 1). Table 3.13-1 identifies the Proposed Project segments and lengths within these local jurisdictions. Specific land use and zoning designations for these jurisdictions are discussed by segment in Section 3.13.1.2 and in Table 3.13-4.

The Proposed Project is located on land managed by federal, state, and regional agencies that are subject to various land use and management decisions, including lands managed by the Bureau of Land Management (BLM), Bureau of Indian Affairs (BIA) (e.g., Tribal Reservations), Department of Defense (DOD), California Department of Fish and Wildlife (CDFW), California State Lands Commission, and Los Angeles Department of Water and Power (LADWP). Figure 3.13-1a through Figure 3.13-1e (Land Management and Jurisdictions) show the locations of these different jurisdictions. Table 3.13-2 provides a summary of the agency managed lands that are crossed by the Proposed Project or within includes a 1,000-foot buffer surrounding the existing and proposed subtransmission lines, telecommunication line, and contractor storage yards, referred to herein as the Proposed Project study area. The Project is located near land managed by the United States Forest Service (USFS) (e.g., Inyo National Forest) and the National Park Service (NPS) (e.g., Manzanar National Historic Site and Mojave National Preserve); however, there are no USFS or NPS managed lands within the study area.

The northern half of Segment 1 is within the BLM's Bishop Resource Management Plan (RMP) planning area. The southern half of Segment 1, Segment 2, and Segments 3N and 3S are within the BLM's California Desert Conservation Area (CDCA) plan area. The Proposed Project is within four BLM districts: Bishop, Ridgecrest, Barstow, and Needles. The Proposed Project is located within or near the following types of BLM land designations identified and described in the Bishop RMP and CDCA Plan, as amended by the

Desert Renewable Energy Conservation Plan (DRECP) Land Use Plan Amendment (LUPA). The DRECP LUPA amended both the Bishop RMP and the CDCA Plan (refer to Section 3.13.2). The specific features are described by segment in Section 3.13.1.2 and in Table 3.13-3.

- **Areas of Critical Environmental Concern (ACECs).** ACEC designations highlight areas where special management attention in needed to protect important historical, cultural, and scenic values, or fish and wildlife or other natural resources. ACECs can only be designated during the land-use planning process. There are 20 ACECs within the Project study area.
- **Desert Wildlife Management Areas (DWMA).** DWMAs are established to protect high quality habitat for the threatened desert tortoise. Individual DWMAs have a one percent surface disturbance limit to protect the desert tortoise. Most DWMAs overlap with critical habitat for the desert tortoise. Critical habitat areas, as designated under the federal Endangered Species Act, are protected from "destruction" or "adverse modification" of the habitat. There are 4 DWMAs within the Proposed Project study area, which are associated with ACECs of the same name (i.e., Fremont-Kramer, Superior-Cronese, Ord/ Rodman Mountain, and Shadow Valley).
- **Wildlife Allocations.** Wildlife Allocations are a land use designation wherein the management of the lands identified emphasize protection and enhancement of plant and animal habitats in BLM lands. This land use designation does not eliminate other existing land uses, but new land uses must be compatible with the values of wildlife and plant habitat.
- **Special Recreation Management Areas (SRMAs).** SRMAs are public lands units identified in land use plans to direct recreation funding and personnel to fulfill commitments made to provide specific structured recreation opportunities. There are seven SRMAs within the Proposed Project study area.
- **Extensive Recreation Management Areas (ERMAs).** ERMAs recognize existing recreation use, demand, or recreation and visitor services program investments and are managed to sustain principal recreation activities and associated qualities and conditions of the ERMA, commensurate management with other resources and resource use. ERMAs are designated in the geographic area managed by the BLM Needles Field Office in the CDCA and include approximately 903,000 acres. There are two ERMAs within the Project study area.
- **Development Focus Areas and Variance Process Lands.** Development Focus Areas include lands where renewable energy development has been designated pursuant to the approval of the DRECP LUPA. Variance Process Lands are available for renewable energy development with implementation of specific Conservation and Management Actions (CMAs). There are Development Focus Areas present in all segments of the Project. No Variance Process Lands occur within any segment of the Project.
- **General Public Lands.** General Public Lands are unallocated lands that do not fall within one of the other specified allocations. Renewable energy development in these areas would require a land use plan amendment. There are General Public Lands in Segments 1, 2, and 3S. Segment 3N does not cross General Public Lands.
- **National Monuments and National Conservation Areas.** National Monuments and National Conservation Areas are designated areas of National Conservation Lands managed to conserve, protect, restore, and enhance national and cultural heritage, while providing compatible multiple uses including grazing, oil, gas and mining. National Monuments, as defined in the Antiquities Act, are "historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest." There are no National Monuments in the Proposed Project study area.
- **Wilderness Areas and Wilderness Study Areas.** Wilderness Areas, as set forth by the Wilderness Act, prohibit commercial enterprise, permanent roads and, except as necessary to administer the areas, temporary roads, use of motor vehicles and other forms of mechanized transport, and structures and installation. Wilderness Study Areas are areas "under study" by Congress as potential wilderness, and,

until Congress designates them wilderness or releases them from study, are managed in a manner that does not impair the suitability of such areas to be designated wilderness. Similar considerations for wilderness areas apply to Wilderness Study Areas. There is one Wilderness Study Area in the Proposed Project study area, which is associated with an ACEC of the same name (Crater Mountain).

- **California Desert National Conservation Lands (CDNCL or NCL).** The DRECP LUPA identified CDNCLs, in accordance with the Public Land Management Act of 2009 (Omnibus Act). CDNCLs are nationally significant landscapes within the CDCA that have outstanding cultural, ecological, and scientific values. The CDCA Plan, as amended by the DRECP LUPA, also established CMAs to conserve, protect, and restore these landscapes. The CDNCLs are a permanent addition to the National Landscape Conservation System, as per the direction to BLM in the Omnibus Act. CDCNLs occur within Segment 1 and Segment 3S.

The southern portion of Segment 1 roughly parallels the southwest border of the DOD's China Lake Naval Airforce Weapons Station (CLNAWS) for approximately 18 miles and crosses associated lands in multiple locations. Segments 2, 3N, and 3S converge at Kramer Substation located at the northeast corner of Edwards Airforce Base (AFB), and Segment 3S crosses a small portion of the AFB land southeast of the substation. East of Barstow, Segments 3N and 3S converge at Coolwater Substation located roughly 1 mile south of the Barstow Marine Corps Logistics Base (MCLB) Yermo Annex and roughly 3 miles east of the Nebo Annex; Segment 3 crosses roughly 3 miles of the firing range associated with the Nebo Annex.

Segment 1 crosses approximately 0.5-mile of land managed by CDFW that is part of the Cartago Wildlife Area and California State Lands Commission classified as "School Lands" that are managed for multiple uses that generate revenue for the California school system (refer to Section 3.13.2).

Table 3.13-1. Local Jurisdictions in the Proposed Project Study Area

Segment (Length)	Local Jurisdiction (Distance Jurisdiction Crossed)	Jurisdiction Crossed by Segment
Segment 1 (126.2 miles)	Inyo County (includes the unincorporated communities of Wilkerson, Big Pine, Lone Pine, Cartago, and Olancha)	115.7 miles
	Kern County (includes the unincorporated community of Inyokern)	10.5 miles
Segment 2 (48.3 miles)	Kern County (includes the unincorporated communities of Inyokern and Randsburg)	25.7 miles
	San Bernardino County (includes the unincorporated community of Kramer Junction)	22.6 miles
Segment 3N (44.4 miles)	San Bernardino County (includes the unincorporated communities of Kramer Junction and Daggett)	44.4 miles
Segment 3S (43.4 miles)	San Bernardino County (includes the unincorporated communities of Kramer Junction, Hinkley, Lenwood, and Daggett)	41.3 miles
	City of Barstow	2.1 miles

Table 3.13-2. Agency Management Areas in the Proposed Project Study Area

Segment (Length)	Agency Name and Management Area	Jurisdiction Crossed by Segment
Segment 1	BLM, Bishop RMP, as amended by the DRECP LUPA	18.6 miles
	BLM, CDCA, as amended by the DRECP LUPA	19.4 miles
	BIA, Big Pine Piute Reservation	30 feet
	DOD, NAWS China Lake	3.4 miles
	CDFW, Cartago Wildlife Area	0.5 mile
	California State Lands Commission, School Lands	2.0 miles
	LADWP, Owens Valley Land Management Plan	3.5 miles
Segment 2	BLM, CDCA, as amended by the DRECP LUPA	31.4 miles

Segment (Length)	Agency Name and Management Area	Jurisdiction Crossed by Segment
Segment 3N	BLM, CDCA, as amended by the DRECP LUPA	26.9 miles
Segment 3S	BLM, CDCA, as amended by the DRECP LUPA	26.0 miles
	DOD, Edwards AFB	0.8 mile
	DOD, MCLB Nebo Annex	3.3 miles

Sources: (BLM, 2019b)

3.13.1.2. Environmental Setting by Segment

Overview

Lands that are designated as sensitive by federal, State, or regional agencies within the Proposed Project study area are described in Table 3.13-3. These land use designations or sensitive areas are identified on Figure 3.13-2a through Figure 3.13-2e (BLM Land Designations).

Table 3.13-3. Agency Managed Lands in the Proposed Project Study Area

Agency and Land Designation	Description	Resource Preservation Purpose(s)	Segment and Total Acres within Study Area[a]
Federal			
BLM, Crater Mountain ACEC/ Wilderness Study Area	The Crater Mountain Wilderness Study Area is intended to preserve 1,000 acres of wildlife habitat.	Wildlife	Segment 1 (223.0 acres)
BLM, Daggett Ridge Monkey Flower ACEC/DWMA	The Daggett Ridge Monkey Flower ACEC is designated to protect sensitive and restrictive plant species, in particular the Mojave monkeyflower. This ACEC is part of the Mojave Monkeyflower ACEC and Ord-Rodman DWMA.	Vegetation	Segment 3S (1,049.9 acres)
BLM, El Paso to Golden Valley Wildlife Corridor ACEC	The El Paso to Golden Valley Wildlife Corridor ACEC encompasses 57,900 acres. It was established to protect wildlife and vegetative resources and geologic features.	Wildlife, Vegetation, Geology	Segment 2 (2,453.9 acres)
BLM, Fossil Falls ACEC	The Fossil Falls ACEC encompasses 1,600 acres. This area was designated for relevant wildlife values, significant prehistoric and historic cultural values, unique geological formations east of the Sierra Nevada and west of the Coso Range Volcanic Field. The current ACEC boundary includes portions of a larger Fossil Falls National Register Archaeological District.	Wildlife, Cultural, Geology	Segment 1 (166.2 acres)
BLM, Fremont-Kramer ACEC/DWMA	The Fremont-Kramer ACEC, which encompasses more than 310,000 acres that provide high density Desert Tortoise habitat. This area contains Desert Tortoise Critical Habitat designated by the FWS. This habitat is considered essential to the recovery of the federally listed Desert Tortoise. This area provides critical tortoise habitat linkage. The area also encompasses essential movement corridors which link wildlife habitats in the Western Rand Mountains and Fremont Valley to the Cuddeback Lake area and to both the Golden Valley and Grass Valley Wildernesses. The area is managed for tortoise conservation and recovery until which time the tortoise may be delisted as per criteria given in the Recovery Plan. The ACEC is part of a DWMA of the same name.	Wildlife	Segment 2 (4,212.4 acres) Segment 3N (2,709.7 acres) Segment 3N (4,242.5 acres)
BLM, Mohave Ground Squirrel ACEC	The Mohave Ground ACEC is intended to preserve 198,600 acres of wildlife and vegetative resources pertinent to the Mohave Ground Squirrel.	Wildlife; Vegetation	Segment 1 (1,629.5 acres) Segment 2 (158.0 acres)

Agency and Land Designation	Description	Resource Preservation Purpose(s)	Segment and Total Acres within Study Area[a]
BLM, Olancha Greasewood ACEC	The Olancha Greasewood ACEC encompasses 25,600 acres dedicated to the protection of an unusual plant assemblage (a Great Basin Enclave with greasewood as the dominant plant).	Vegetation	Segment 1 (730.4 acres)
BLM, Owens Lake ACEC	The Owens Lake Area of Critical Environmental Concern is managed by the Ridgecrest Field Office. It encompasses 10,300 acres and was established to protect cultural resources and wildlife and plant resources.	Wildlife, Vegetation, Cultural	Segment 1 (2,415.8 acres)
BLM, Rose Springs ACEC	The Rose Springs ACEC, which encompasses 800 acres. The ACEC was designated for significant prehistoric cultural resource values associated with the Rose Spring Archaeological site complex. The site is eligible for listing on the National Register of Historic Places.	Cultural	Segment 1 (273.0 acres)
BLM, Western Road Mountains ACEC	The Western Rand Mountains ACEC encompasses 30,300 acres. The ACEC provides high density Desert Tortoise habitat and encompasses designated desert tortoise critical habitat. This area provides critical tortoise habitat linkage. It is considered to be the evolutionary home of the Desert Tortoise and the location of the highest historic Desert Tortoise population density throughout their range. The ACEC was designated because of the Desert Tortoise population conflicting with surface use activities. It overlaps the Fremont-Kramer ACEC which is critical desert tortoise habitat and the Mohave Ground Squirrel Conservation Area. It also contains habitat that supports other special status species including the Burrowing owl.	Wildlife	Segment 2 (15.6 acres)
BLM, Alabama Hills SRMA/National Scenic Area	BLM Manages the Alabama Hills SRMA to protect unique geologic features and scenic values and to provide compatible recreational opportunities, as well as riparian habitat. The Alabama Hills is also designated as a National Scenic Area.	Vegetation Geology, Scenic Views, Recreation	Segment 1 (24.3 acres)
BLM, Olancha SRMA	The Olancha Dunes are located 2 miles east of Olancha on State Hwy 190. The Sand Dunes are designated as an "Open Area" consisting of approximately 400 acres. The main dune area consists of low rolling dunes that are surrounded by brush. It is one of the smaller dunes systems in the California Desert, but the views created by the Sierra Nevada range to the west and the Mt. Whitney to the northwest make it a unique experience for recreation.	Recreation, Scenic Views	Segment 1 (1,044.7 acres)
BLM, East Sierra SRMA	The East Sierra SRMA provides a recreational environment that focuses on low impact recreation and emphasizes experiencing the splendor of the Eastern Sierras. The goal is to offer recreational opportunities that maintain the natural character of the landscape and protect sensitive resources, while encouraging a variety of outdoor activities that provide pleasure to the user.	Recreation, Scenic View	Segment 1 (265.2 acres)
BLM, El Paso/Rand SRMA	The El Paso/Rands SRMA consists of 3 separate Recreation Management Zones (RMZ's) – El Paso Mountains, Rand Mountains Management Area, and Desert Tortoise Research Natural Area. These areas are managed to maintain the experience on the old mining camps with designated route networks, motorized touring and education, desert/nature hikes, and wildlife viewing inside the Desert Tortoise Natural Area.	Recreation, Wildlife, Scenic Views	Segment 2 (5,742.1 acres)

Agency and Land Designation	Description	Resource Preservation Purpose(s)	Segment and Total Acres within Study Area[a]
BLM, Red Mountain SRMA	The objective of this SRMA is to maintain a multi-use recreation environment that focuses on low to high impact recreation and emphasizes the diversity of the Western Mojave Desert. This SRMA provides and conserves multiple use recreation for the public's enjoyment of the great outdoors including where appropriate off-road vehicle use along with the maintenance and protection of environmental quality.	Recreation, Scenic Views	Segment 2 (1,110.7 acres)
BLM, Stoddard/ Johnson SRMA	The Stoddard/Johnson SRMA includes extensive recreation opportunities on public lands spread along the outer edge of adjacent communities of Apple Valley, Barstow, Hesperia, Lucerne Valley, and Victorville. This area has good freeway access from Interstate 15 and Highways 18 and 247 to all of Southern California, and a good network of local feeder roads. There is a diverse range of opportunities here, with the centerpiece being the two large OHV recreation areas, Stoddard and Johnson Valley's. There are two popular rock-climbing areas, a camp campground, trails, petroglyphs, springs, mountain tops and thousands of acres of open space. These lands experience constant visitor use because they are on the urban interface.	Recreation, Cultural, Scenic Views	Segment 3S (798.4 acres)
BLM, Development Focus Areas and Variance Process Lands	The Proposed Project crosses lands designated as Development Focus Areas, which allow the activities associated with solar, wind, and geothermal development, operation, and decommissioning to occur under the CDCA Plan, as amended by the DRECP LUPA. Transmission development and operation will occur in previously designated corridors and other identified areas inside the Development Focus Areas.	n/a	Segment 1 (1,156.6 acres) Segment 2 (1,242.0 acres) Segment 3N (41.3 acres) Segment 3S (254.1 acres)
BLM, BLM General Public Lands	The Proposed Project crosses lands designated as General Public Lands, which are BLM-administered lands that do not have a specific land allocation or designations.	n/a	Segment 1 (3,383.6) acres Segment 2 (53.4 acres) Segment 3N (166.2 acres) Segment 3S (160.7 acres)
BIA, Big Pine Piute Reservation	The Proposed Project crosses a single BIA-managed parcel at the southwest edge of the community of Big Pine in Inyo County that is associated with Big Pine Piute Reservation. This parcel contains a water storage tank and access road. No management plan for this parcel has been identified.	n/a	Segment 1 (2.6 acres)
DOD, NAWS China Lake	The Proposed Project is located within the Baker Range. The Range's principal functions are weapon target sites and ordnance impact areas. While the Proposed Project is located on lands managed by CLNAWS, it is located outside the security fenceline. The Proposed Project is located in the northeast corner of Management Area B, Precision Impact Range Area (PIRA). The PIRA covers a large portion of the eastern part of the Base. It is used for aircraft flight testing, explosive ordnance disposal, and the placement of communication equipment. This area is used to test aircraft targeting equipment and for practice in precision bombing. Other activities and uses in the	n/a	Segment 1 (2,052 acres) Segment 2 (11.4 acres)

Agency and Land Designation	Description	Resource Preservation Purpose(s)	Segment and Total Acres within Study Area[a]
	PIRA are severely restricted and occur only occasionally, scheduled around the range use.		
DOD, MCLB Barstow (Nebo Annex)	The Proposed Project is located outside the fenced security perimeter and routed through an area with no installation facilities. The primary mission of MCLB Barstow is to procure, maintain, store, and issue supplies and equipment for Marine Corps facilities worldwide, as well as to repair and rebuild DOD The Nebo Area contains base headquarters and administration, storage, recreational activities, shopping, and housing functions. The Yermo Annex is used for storage and industrial activities. The Rifle Range Complex contains three small arms ranges and is the only area on the installation where military training occurs.	n/a	Segment 3S (797 acres)
State			
CDFW, Cartago Wildlife Area	Cartago Wildlife Area consists of 218 acres of freshwater wetland and springs which provide habitat for waterfowl, wading birds and shorebirds including western snowy plovers, white-faced ibis and rails. Owens Lake has been designated a Nationally Significant Important Bird Area by the National Audubon Society and American Bird Conservancy, and 144 bird species have been documented on the wildlife area. The topography of the area is generally flat and at an elevation of 3,600 feet.	Wildlife	Segment 1 (130.3 acres)
California State Lands Commission	The California State Lands Commission manages "School Lands" that are located in the Proposed Project area. These lands are managed to generate funds for the California school system through various resource uses, such as agriculture and mineral extraction.	n/a	Segment 1 (183.7 acres) Segment 3N (196.3 acres)
Regional/Other			
LADWP, Owens Valley Land Management Plan	The Owens Valley Land Management Plan (OVLMP) provides management direction for resources on all LADWP lands in Inyo County, excluding the Lower Owens River Project (LORP) area. The OVLMP provides a framework for implementing management prescriptions through time, monitoring the resources, and adaptively managing changed land and water conditions (LADWP, 2010).	Wildlife, Vegetation, Water Resources Management, Recreation	Segment 1 (18,739 acres)

Note:
[a] The study area for the Land Use and Planning section includes a 1,000-foot buffer surrounding the existing and proposed subtransmission lines, telecommunication line, and contractor storage yards.
Sources: (BLM, 2019a), (BLM, Aspen, Dudek, and CEC, 2019), (USGS, 2023), (BLM, 1993)

Local land use and zoning designations are presented in Table 3.13-4 and Table 3.13-5 for informational purposes. Due to the large size of the Proposed Project, land uses and zoning designations are combined into categories to represent the major land uses that are present in the Proposed Project study area. The acreage of each designation that intersects with the study area is provided by segment.

Table 3.13-4. Land Use Categories by County in the Proposed Project Study Area (acres)

County	Agricultural	Commercial	Industrial	Office	Open Space	Public Facilities	Residential	Resource Protection[1]	State, Federal, and Tribal Lands	Utility Facilities
Segment 1										
Inyo	890.3	0.3	111.3	0.0	1,103.4	177.9	387.4	15,158.5	9,655.0	0.0
Kern	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,330.0	0.0

County	Agri-cultural	Com-mercial	Industrial	Office	Open Space	Public Facilities	Resi-dential	Resource Protection[1]	State, Federal, and Tribal Lands	Utility Facilities
Segment 2										
Kern	605.0	38.5	3.5	0.0	5,444.4	0.0	1,303.0	695.4	3,608.0	0.0
San Bernardino	0.0	116.1	0.0	0.0	0.0	0.0	417.9	0.0	0.0	0.0
Segment 3N										
San Bernardino	0.0	203.3	292	0.0	7,694.2	9.8	2,878.4	0.0	0.0	117.5
Segment 3S										
San Bernardino	0.0	5.3	232.4	6,527	0.0	727.3	2,718.0	0.0	0.0	132.3

Notes:
[1] Resource Protection includes the total acreage for the following General Plan designations: Resource Reserve, Mineral and Petroleum, and Resource Management.
Sources: (SCAG, 2016); (County of Kern Planning Department, 2016)

Table 3.13-5. Zoning District Categories by County in the Proposed Project Study Area (acres)

County	Agri-cultural	Com-mercial	Industrial	Office	Open Space	Public Facilities	Resi-dential	Resource Protection	Floodway	Planned Unit Development
Segment 1										
Inyo	0.0	25.6	121.5	0.0	28,356.9	17.7	378.7	2.71	0.0	53.7
Kern	626.0	0.0	0.0	0.0	1,330.0	0.0	747.0	0.0	0.0	0.0
Segment 2										
Kern	842.0	0.0	78.0	0.0	2,155.0	0.0	0.0	1,799.0	0.0	0.0
San Bernardino	0.0	140.0	0.0	0.0	0.0	0.0	366.3	5,523.0	0.0	30.3
Segment 3N										
San Bernardino	0.0	231.7	287.7	0.0	0.0	0.0	2,913.4	0.0	119.3	0.0
Segment 3S										
San Bernardino	0.0	14.5	48.6	0.0	0.0	0.0	2,097.5	6,523.8	86.9	0.0

Sources: (Kern County, 2017) (Inyo County Planning Department, 2022)

Segment 1: Bishop to Inyokern

Segment 1 includes the Control-Coso-Haiwee-Inyokern 115 kV circuit and the Control-Haiwee-Inyokern 115 kV circuit. Segment 1 spans approximately 126 miles from the existing Control Substation in the north to the existing Inyokern Substation in the south. This segment extends from the Control Substation at the edge of Bishop Creek just southwest of Bishop in the Sierra Nevada foothills and extends south down the Owens Valley to Little Lake and then south into the Indian Wells Valley where the Inyokern Substation is located.

As shown in Table 3.13-2 and Figure 3.13-2a through Figure 3.13-2c (BLM Land Designations Segment 1), the Segment 1 study area includes BLM-administered land within the Bishop RMP and the CDCA planning areas. Segment 1 crosses seven ACECs (Crater Mountain, Fossil Falls, Mohave Ground Squirrel, Olancha Greasewood, Owens Lake, Rose Spring, and Sierra Canyons ACECs), and three SRMAs (Alabama Hills, East Sierra, and Olancha SRMAs). As identified in Table 3.13-3, ACECs are areas designated to protect important natural resources and SRMAs are defined to recognize areas with high priority for outdoor recreation.

Segment 1 is located in Inyo and Kern County. Tables 3.13-4 and 3.13-5 identify the general land use and zoning designations in the Proposed Project study area within Inyo and Kern County.

Segment 2: Inyokern to Kramer Junction

Segment 2 includes the Kramer-Inyokern-Randsburg No.1 115 kV circuit. Segment 2 spans approximately 48 miles from the existing Inyokern Substation in the north to the existing Kramer Substation in the south and includes the existing Randsburg Substation between the two. Segment 2 passes through Kern County and San Bernardino County.

As shown in Table 3.13-2 and Figure 3.13-2d (BLM Land Designations, Segment 2), the Segment 2 study area includes BLM-administered land within the Bishop RMP and the CDCA planning areas. Segment 2 crosses four ACECs (El Paso to Golden, Fremont-Kramer, Mohave Ground Squirrel, and Western Rand Mountains ACECs), and two SRMAs (El Paso/Rand and Red Mountain SRMAs). As identified in Table 3.13-3, ACECs are areas designated to protect important natural resources and SRMAs are defined to recognize areas with high priority for outdoor recreation.

The northern 26 miles of Segment 2 are located in Kern County, and the southern 22 miles are in San Bernardino County. Tables 3.13-4 and 3.13-5 identify the general land use and zoning designations in Proposed Project study area within Kern County and San Bernardino County.

Segment 3N: Kramer Junction to Daggett

Segment 3N includes the Coolwater-Kramer 115 kV subtransmission line and spans 44.4 miles in San Bernardino County.

As shown in Table 3.13-2 and Figure 3.13-2e (BLM Land Designations, Segments 3N and 3S), the Segment 3N study area includes BLM-administered land within the CDCA Plan Area. Segment 3N crosses three ACECs (Fremont-Kramer, Mojave Fringe-toed Lizard, and Superior-Cronese ACECs). ACECs are areas designated to protect important natural resources.

Segment 3N is located San Bernardino County. Tables 3.13-4 and 3.13-5 identify the general land use and zoning designations in the Proposed Project study area within San Bernardino County.

Segment 3S: Kramer Junction to Barstow to Daggett

Segment 3S includes the Kramer-Tortilla 115 kV subtransmission line and the Coolwater-SEGS2-Tortilla 115 kV. Subtransmission Line, area includes BLM-administered land within the BLM CDCA Plan Area, as amended by the DRECP LUPA. This segment also includes lands within the DOD Edwards AFB and DOD MCLB Nebo Annex. Segment 3N crosses three ACECs (Daggett-Ridge, Fremont-Kramer, and Superior-Cronese ACECs; see Figure 3.13-2e (BLM Land Designations, Segments 3N and 3S). ACECs are areas designated to protect important natural resources.

Segment 3S is located San Bernardino County. Tables 3.13-4 and 3.13-5 identify the general land use and zoning designations in the Proposed Project study area within San Bernardino County.

3.13.2. Applicable Regulations, Policies, and Standards

3.13.2.1. Federal Regulations, Policies, and Standards

Federal Land Policy Management Act

The Federal Land Policy Management Act of 1976 (FLPMA) is administered by the BLM with the goals of preserving and promoting multiple use principles for federal public lands. The FLPMA requires federal management agencies to coordinate with other federal agencies, states, and local governments regarding land use planning and management (Title 43, United States Code Annotated Section 1712[c][9]).

National Environmental Policy Act

BLM has jurisdiction over rights-of-way on federal public lands in the Proposed Project study area and will prepare an EIS for the Proposed Project pursuant to the National Environmental Policy Act (NEPA). SCE has submitted an application to BLM to amend its existing right-of-way authorization. BLM will make a determination regarding consistency with its land use and management plans.

Bureau of Land Management, Bishop Resource Management Plan

The 1993 Bishop RMP contains the BLM's land use decisions for managing public lands administered by the BLM in the Bishop Resource Area. The Bishop RMP area is managed for the full spectrum of uses, with an emphasis on recreational use and environmental education while providing for land disposals. The Bishop RMP designates a one-half mile wide utility corridor along the 115 kV SCE Double Circuit Line from the Bishop Substation to where it exits the resource area near Olancha. The Proposed Project is located within the utility corridor defined in the Bishop RMP.

Bureau of Land Management, California Desert Conservation Area Plan

The CDCA was established as part of the passage of FLPMA in 1976. The CDCA Plan was developed in 1980 to address management and land use decisions for over 12 million acres of BLM-administered public lands in the planning area. There are five recovery units in the CDCA: Upper Virginia River, Eastern Mojave, Northwestern Mojave, Western Mojave, and Colorado Desert. The CDCA prioritizes preservation of threatened and endangered species, including desert tortoise, and designates DWMAs. In 2002 and 2006, the BLM completed the Northern and Eastern Mojave RMP and the Western Mojave RMP, respectively, which amended the original CDCA Plan with additional land allocations and designations. In 2009, Congress passed the Omnibus Public Land Management Act, which directed the BLM to include lands managed for conservation purposes within the CDCA as part of the National Conservation Lands. The DRECP LUPA discussed in the next section made significant amendments to the land allocations in the CDCA Plan, while also reaffirming others.

Bureau of Land Management, Desert Renewable Energy Conservation Plan, Land Use Plan Amendment

The DRECP was developed through an interagency planning process and resulted in a document that was intended to provide a streamlined process for the development of renewable energy generation and transmission consistent with federal and state renewable energy targets and policies, while also providing for the long-term conservation and management of special-status species and habitat as well as other physical, cultural, scenic, and social resources within the DRECP Plan Area (BLM, 2019b). The DRECP Plan Area covered approximately 22,585,000 acres and encompassed the Mojave Desert and the Colorado/ Sonoran Desert ecoregion subareas in California, including all of the Proposed Project. While the DRECP was developed with participation of state agencies, it was adopted only by the BLM in a Record of Decision following the Final EIS published in November of 2015.

The BLM's 2016 Record of Decision adopting the DRECP Land Use Plan Amendment (LUPA) amended the BLM's 1980 CDCA Plan and 1993 Bishop RMP. The DRECP LUPA identifies CMAs that govern the way that activities are allowed within the different land designations (ACECs, Wildlife Allocations, SRMAs, ERMAs, Development Focus Areas and Variance Process Lands, General Public Lands, and other conservation designations, as defined in Section 3.13.1.1).

Energy Policy Act of 2005 Section 368

Section 368 of the Energy Policy Act (2005) sets forth provisions that change the way certain federal agencies coordinate to authorize the use of public land for a variety of energy-related purposes. Section 368 requires the designation of energy corridors on federal lands in 11 western states, including California;

the establishment of procedures to ensure that additional corridors are identified and designated as necessary; and to expedite applications to construct or modify oil, gas, and hydrogen pipelines and electricity transmission and distribution facilities. Portions of all four segments of the Proposed Project are located within Section 368 designated energy corridors. The BLM is currently engaged in a process to update the Section 368 energy corridors.

Big Pine Paiute Reservation

Segment 1 of the Proposed Project crosses a single parcel of land (approximately 30 feet; identified as BIA-managed land in Tables 3.13-2 and 3.13-3) that is part of the Big Pine Paiute Reservation. This parcel contains a water storage tank and access road. Roughly 2.6 acres of the Reservation are within the Proposed Project study area (Table 3.13-3).

3.13.2.2. State Regulations, Policies, and Standards

California Public Utilities Commission

The CPUC has sole and exclusive jurisdiction over the siting and design of the Proposed Project and local jurisdictions are preempted from regulating the construction, operation, and maintenance of investor-owned public utility facilities.

Although the Proposed Project is exempt from local land use and zoning regulations and discretionary permitting (i.e., it would not require discretionary approval from a local decision-making body such as a planning commission, county board of supervisors or city council), General Order No. 131-E, Section XI.B requires that in locating a project "the public utility shall consult with local agencies regarding land use matters." The public utility would also be required to obtain any required non-discretionary local permit (see Table 1-2 for list of permits that may be required) (CPUC, 2025).

California Department of Fish and Wildlife

The Proposed Project crosses parcels owned and managed by the CDFW's California Wildlife Conservation Board (CWCB) where the Cartago Wildlife Area is located in Segment 1. The land is managed according to the Board's Strategic Plan (CWCB, 2014). The Strategic Plan is organized around five major goal areas regarding its land management, including (1) environmental protection and conservation; (2) environmental restoration and enhancement; (3) public use and recreation; (4) public awareness and education; and (5) fiscal and organizational effectiveness. There are no specific management plans or property regulations applicable to the Cartago Wildlife Area and the Proposed Project.

California State Lands Commission

The Proposed Project crosses parcels managed by the California State Lands Commission that are "School Lands," which are defined as lands granted to benefit public education. According to the California State Lands Commission Strategic Plan 2016-2020, School Lands were placed into a statutory trust in 1984 when the Legislature enacted the School Land Bank Act (Act) and created the School Land Bank Fund. The Commission is the trustee of the Fund. Today these lands support common schools and the revenue, by statute, supports the State Teachers' Retirement System. Over half of school lands are located in the California Desert. The Act states that school lands and attendant interests are to be proactively managed and enhanced to provide an economic base in support of public education. The Act further requires the Commission to take all action necessary to fully develop school lands, indemnity interests, and attendant mineral interests into a permanent and productive resource base (CSLC, 2015).

3.13.2.3. Local Regulations, Policies, and Standards

As discussed above, pursuant to General Order 131-E, the Proposed Project is not subject to local authority because the CPUC has exclusive jurisdiction over the siting, design and construction of electric power line

projects, distribution lines, substations, and electric facilities constructed by public utilities subject to CPUC jurisdiction Local ordinance policies and requirements are presented here only where these requirements are used as the basis for impact analysis.

Inyo County General Plan

This Land Use Element of the Inyo County General Plan (2001, as amended) identifies goals, policies and implementation measures designed to encourage and allow appropriate development throughout the County. The Gas and Electrical Facilities section of the Land Use Element includes the following goal and policy:

- **GOAL PSU-10.** To provide efficient and cost-effective utilities that serves the existing and future needs of people in the unincorporated areas of the County.
- **Policy PSU-10.1 Expansion of Services.** The County shall work with local electric utility companies to design and locate appropriate expansion of electric systems, while minimizing impacts to agriculture and minimizing noise, electromagnetic, visual, and other impacts on existing and future residents.

In 2015, Inyo County published a Renewable Energy General Plan Amendment (REGPA) and Program Environmental Impact Report to include policies for facilitating and locating renewable energy development in the County, and to address state-mandated renewable energy demands and potential future utility-scale renewable energy projects within the County's footprint. No policies in the REGPA are applicable to the Proposed Project because the Proposed Project does not involve generation of renewable energy.

Inyo County Zoning Ordinance

Section 18.03.040, Interpretation, of the Inyo County Zoning Ordinance states:

> "The provisions of this title shall be held to the minimum requirements. Nothing in this title shall repeal or amend any ordinance requiring a permit or license to cover any business activity. These regulations are not intended to impair or interfere with any existing easement, covenant or other agreement between parties; provided, however, that where this title imposes a greater restriction upon any use or upon the height or bulk of a building or structure, or requires larger building sites, yards or other open spaces than are imposed or required by any other law, ordinance, covenant or easement, than the provisions of this title shall control (Ord. 943 § 4, 1994)."

Kern County General Plan

The Kern County General Plan 2040 is currently in the process of being adopted. The Board of Supervisors will consider the General Plan Update at a series of public hearings in 2019. Kern County's General Plan was last updated in 2009. The Kern County Energy Element is a comprehensive document which 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. The Energy Element has three primary objectives: (1) resource management and protection; (2) establishing development standards to provide for the protection of the environment, public health, and safety; (3) promoting and facilitating energy development. Section 5.4.7, Transmission Lines, states a goal to "encourage the safe and orderly development of transmission lines to access Kern County's electrical resources along routes, which minimize potential adverse environmental effects."

Kern County Zoning Ordinance

The Kern County Zoning Ordinance was last updated in 2022 and is intended to promote and protect the public health, safety, and welfare through the orderly regulation of land uses throughout the unincorporated

area of the County (Kern County, 2022). Per Section 19.08.090 of the Kern County Zoning Ordinance, the provisions of the ordinance do not apply to the construction, installation, operation, and maintenance of the types of facilities that would be replaced under the Proposed Project.

San Bernardino Countywide Plan

The San Bernardino Countywide Plan was adopted in 2020 and is organized around two main documents, which include the Policy Plan and the Business Plan. The Policy Plan serves as the County's general plan and is intended to guide decision-making and long-term development in the County.

The Land Use Element of the Policy Plan is a guide for the County of San Bernardino's future development. It designates the distribution and general location of land uses, such as residential, retail, industrial, open space, recreation, and public areas. San Bernardino County uses a "one-map approach" that permits the use of a single map showing both General Plan land use designations and zoning classifications. The one-map approach assures that there will always be land use consistency between the County's General Plan and its Zoning Code.

The San Bernardino County Development Code implements the goals and policies of the General Plan by regulating land uses within the unincorporated areas of the County. Each piece of property is within a "zone" or "land use district" which describes the rules under which that land may be used. These districts, such as "RS" for single-family residential or "CG" for general commercial, generally cover the range of uses allowable within the land use district. The Code also establishes specific development standards for each district and the procedures to follow in order to approve a particular use.

San Bernardino County, Code of Ordinances

Division 2, Land Use Zoning Districts and Allowed Land Uses, of San Bernardino County's Code of Ordinances establishes allowable uses for land use zoning designations. For all land use zoning designations, the Code notes that transmission lines are regulated and approved by the Public Utilities Commission. Procedures for reviewing alternate transmission citing during the environmental review process are described in Section 85.02.050, Alternate Review Procedures.

City of Barstow General Plan

The Land Use Element of Barstow's General Plan establishes the vision of Barstow for its long-term development. This Element reflects the City's core values as enunciated in the General Plan Vision Statement. It focuses on the protection and enhancement of existing neighborhoods and the establishment of newly developed land uses designed to better serve existing residents, entice new residents to relocate to the community and provide a wider range of employment opportunities and commercial goods and services for inhabitants of Barstow and the surrounding area.

City of Barstow, The Code of the City

Section 19.24.110, Public Utility Lines, of The Code of the City of Barstow states: "The provisions of this title shall not be so construed as to limit or interfere with the use of property in any land use district for installation, maintenance and operation of public utility pipelines and under aerial transmission and supply lines, when located in accordance with the applicable rules and regulations of the Public Utilities Commission of the state of California within rights-of-way, easements, franchises or other ownerships of such public utilities."

City of Barstow, Route 66 Business Corridor/Downtown Business and Cultural District Specific Plan

The City of Barstow has developed the Route 66 Business Corridor/Downtown Business and Cultural District Specific Plan to identify wayfinding and branding, land use and urban design guidelines for the corridor. The Specific Plan does not contain any goals, policies, or strategies of relevance to the Proposed Project.

LADWP, Owens Valley Land Management Plan

The Owens Valley Land Management Plan (OVLMP) provides management direction for resources on all LADWP lands in Inyo County, excluding the Lower Owens River Project (LORP) area. The OVLMP provides a framework for implementing management prescriptions through time, monitoring the resources, and adaptively managing changed land and water conditions (LADWP, 2010). The plan does not contain management actions that apply to the Proposed Project.

3.13.3. Environmental Impacts of the Proposed Project

3.13.3.1. Impact Analysis Approach

The impact analysis in this section is based largely on an assessment of Proposed Project consistency with land use plans and policies adopted for the purpose of avoiding or mitigating an environmental effect in the Proposed Project area. The Final Statement of Reasons provided with the 2018 CEQA Guidelines Update clarifies that the focus of an analysis of whether or not a project conflicts with land use plans "should not be on the 'conflict' with the plan, but instead, on any adverse environmental impact that might result from a conflict" (California Governor's Office of Planning and Research [OPR], 2018). There are numerous plans, policies, and regulations that are either implicated by relevant CEQA Guidelines Appendix G checklist questions or that were adopted for the purpose of avoiding or mitigating an environmental effect and, thus, are evaluated under the appropriate resource-specific section of this EIR. As an example, Section 3.5, Biological Resources, evaluates whether the Project would conflict with the provisions of an adopted HCP or similar plan. Thus, environmental impacts that would occur due to conflicts with plans, policies, and regulations are discussed in each appropriate topical section of this EIR. Provided below is an evaluation of the potential environmental impacts specifically related to any conflict with a land use plan, policy, or regulation within the Proposed Project study area.

SCE proposed no Applicant Proposed Measures (APMs) related to land use, and no APMs relevant to other issue areas have been identified.

3.13.3.2. CEQA Impact Significance Criteria

The significance criteria listed below are based on the Environmental Checklist form in Appendix G of the CEQA guidelines. They are used to determine whether the Proposed Project and its alternatives would result in significant impacts related to land use as defined by CEQA. According to the Checklist, a project would cause a potentially significant impact if it would:

- Physically divide an established community.
- 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? (Impact LU-1)

The Proposed Project would generally occur immediately adjacent to or within an existing utility corridor. The Proposed Project would not physically divide an existing community because it would replace an existing adjacent transmission line. Therefore, the first significance threshold is not analyzed further in this EIR. Potential conflicts with applicable habitat conservation plans or natural community conservation plans are addressed in Section 3.5, Biological Resources. Therefore, the analysis below focuses on impacts that could be caused due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect that is not analyzed elsewhere in this EIR.

3.13.3.3. Impacts and Mitigation Measures

The Cal City Options defined in Section 2.1.1 and illustrated in Figure 2-2 would have impacts no different from those defined for Impact LU-1, because the extent of ground disturbance required for the Proposed Project would be the same as that required for any of the Cal City Options.

Impact LU-1: 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.

Federal Jurisdictions

NO IMPACT. The Proposed Project is located within BLM-administered lands identified in the Bishop RMP and CDCA Plan Area, where there are designated ACECs, Wilderness Study Areas, DWMAs, ERMAs, SRMAs, National Scenic Areas, which include goals and objectives to protect and conserve various resources (refer to Table 3.13-3). The BLM's CMAs are intended to protect resources within these and other areas, while allowing for the approval of utility projects on federal lands, and no CMAs restrict the reconstruction of existing utility lines. The Bishop RMP and CDCA Plan, as amended by the DRECP LUPA, recognize the valid use of utility corridors that would be utilized by the Proposed Project, and the majority of the Proposed Project alignment is located within Section 368 energy corridors, which are designated under the Energy Policy Act of 2005 to expedite agency review of applications for electricity transmission and distribution facilities within those designated corridors.

The BLM is responsible for reviewing the Proposed Project and its potential environmental effects on federal lands pursuant to NEPA. There are no land use policies applicable to Big Pine Paiute reservation that would apply to the Proposed Project. The Proposed Project is not located on DOD land, and no DOD land use plans or policies would apply directly to the Proposed Project. The Proposed Project would be required to comply with all conditions and measures included in federal authorizations; therefore, the Proposed Project would not cause a significant environmental impact due to a conflict with any federal land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. No impact would occur.

State Jurisdictions

NO IMPACT. The Proposed Project crosses parcels owned and managed by the CDFW's California Wildlife Conservation Board where the Cartago Wildlife Area is located in Segment 1. There are no specific management plans or property regulations applicable to the Cartago Wildlife Area and the Proposed Project. The Proposed Project would replace an existing transmission line and remove associated structures that are located within the wildlife area. The Proposed Project would not change or convert the underlying use of the area, and the wildlife uses of the Cartago Wildlife Area would remain. Therefore, no impact would occur.

The Proposed Project also crosses parcels that are owned by the State of California as school lands. The Proposed Project involves replacement of the existing transmission line with a new adjacent transmission line on the school lands. The Proposed Project would not conflict with future economic use of those lands consistent with the goals of the school lands and, therefore, would not cause a significant environmental impact due to a conflict with any state land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, there would be no impact.

Local Jurisdictions

NO IMPACT. Potential conflicts with land use plans, policies, and regulations do not necessarily indicate a significant land use impact under CEQA. Impacts under LU-2 would only be considered significant if the Proposed Project has the potential to substantially conflict with a plan, policy, or regulation specifically adopted for the purpose of avoiding or mitigating an environmental effect, such as if the Proposed Project would cause their goals and objectives to be unachievable.

The project is located within areas where there are adopted land use plans and ordinances, including the Inyo County General Plan, Inyo County Zoning Ordinance, Kern County General Plan, San Bernardino Countywide Plan, San Bernardino County's Code of Ordinances, City of Barstow General Plan, City of Barstow Code, and the Owens Valley Land Management Plan. There are no regulations, policies, or standards in these plans and ordinances applicable to the Proposed Project as presented in Section 3.13.2.3.

The construction or operation of electric infrastructure is not prohibited in any of the land uses designated in the Inyo County General Plan, Kern County General Plan, San Bernardino Countywide Plan, or the City of Barstow General Plan. The project would be consistent with the Inyo County General Plan, as the reconstruction of the subtransmission lines within and immediately adjacent to the existing alignment would minimize impacts to agriculture and would minimize noise, electromagnetic, visual, and other impacts on existing and future residents. The project is also consistent with policies contained in the Kern County General Plan Energy Element, as the proposed route would follow existing utility corridors to minimize environmental effects. The construction and operation of transmission lines regulated and approved by the CPUC are an allowable use in all land use zoning designations in San Bernardino County and the City of Barstow; therefore, the Proposed Project would not conflict. The Inyo County Zoning Ordinance, Kern County Zoning Ordinance, City of Barstow Route 66 Specific Plan, or LADWP OVLMP do not contain any applicable objectives or goals. In addition, SCE would be required to obtain all necessary encroachment permits prior to entering land managed by local jurisdictions. For the reasons stated above, the Proposed Project would not cause a significant environmental impact due to a conflict with a plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect not analyzed elsewhere in this EIR. There would be no impact.

3.13.4. Mitigation Monitoring, Compliance and Reporting

There are no mitigation measures required for land use and planning.

3.13.5. References

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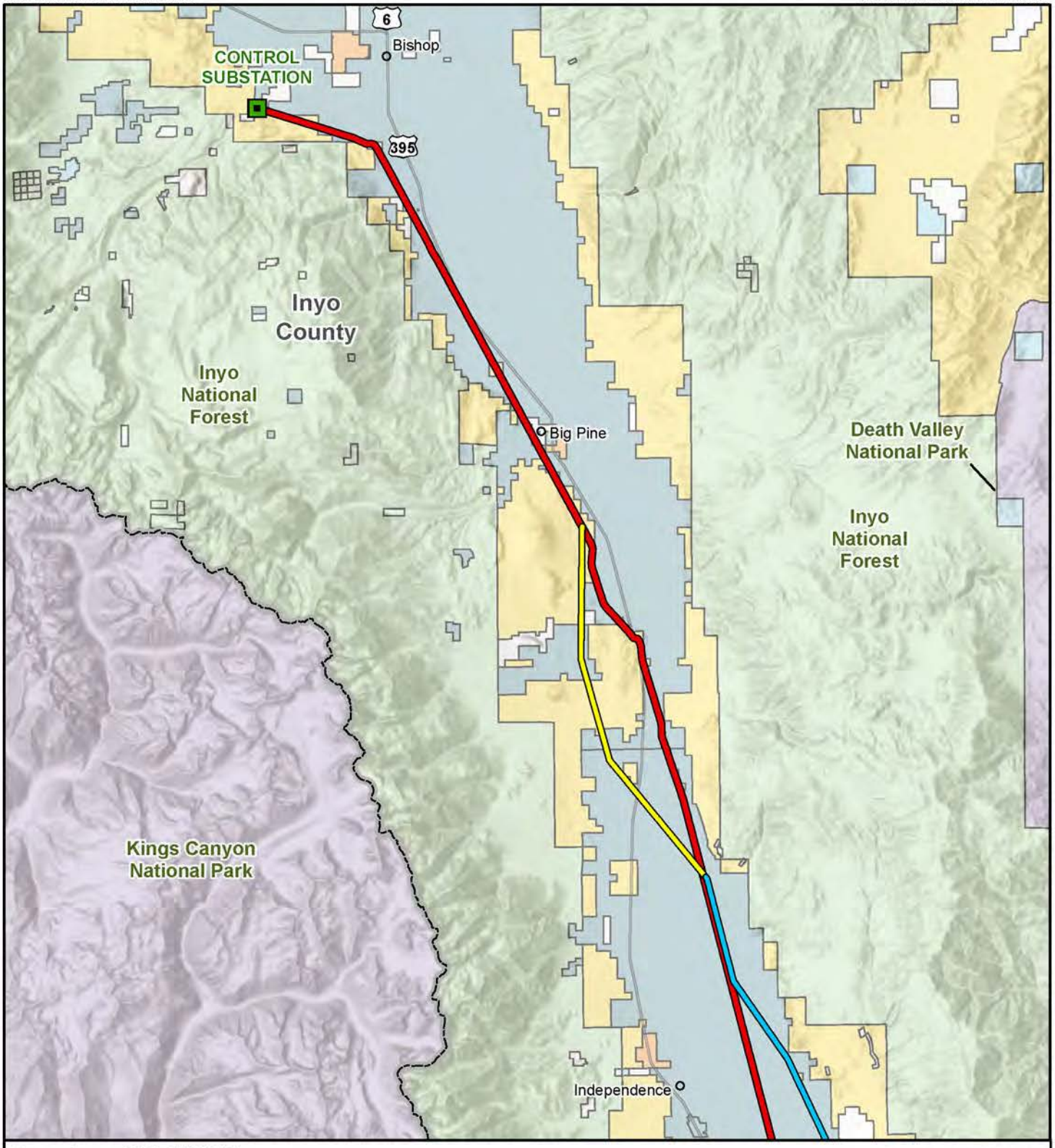


Source: Aspen, 2024; BLM, 2024; CAL FIRE, 2024; ESRI, 2024; SCE, 2024.

Figure 3.13-1a

Land Management and Jurisdiction Segment 1 North

Substation
County Boundary

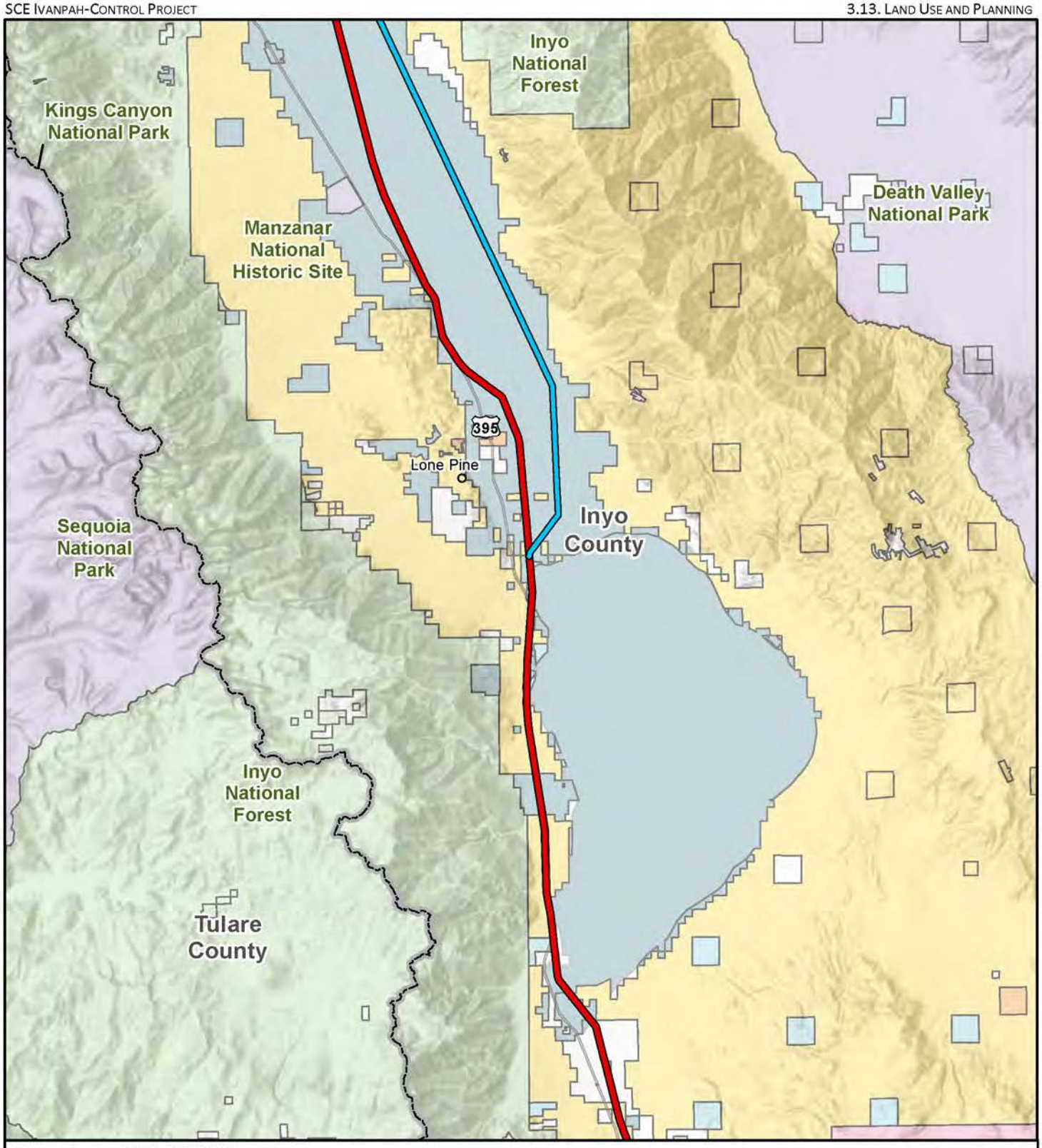
Ivanpah-Control Proposed Project Segments
Segment 1: Control-Haiwee-Inyokern

Ivanpah-Control Project Alternatives
Crater Mountain Realignment Alternative
Manzanar Realignment Alternative

Land Management/Ownership
Bureau of Indian Affairs
Bureau of Land Management
LADWP and Local Government
National Park Service
State
USDA Forest Service

1:316,800

N 0 5 Miles



Source: Aspen, 2024; BLM, 2024;
CAL FIRE, 2024; ESRI, 2024; SCE, 2024.

Figure 3.13-1b

Land Management and Jurisdiction Segment 1 Central

County Boundary

Ivanpah-Control Proposed Project Segments

Segment 1: Control-Haiwee-Inyokern

Ivanpah-Control Project Alternatives

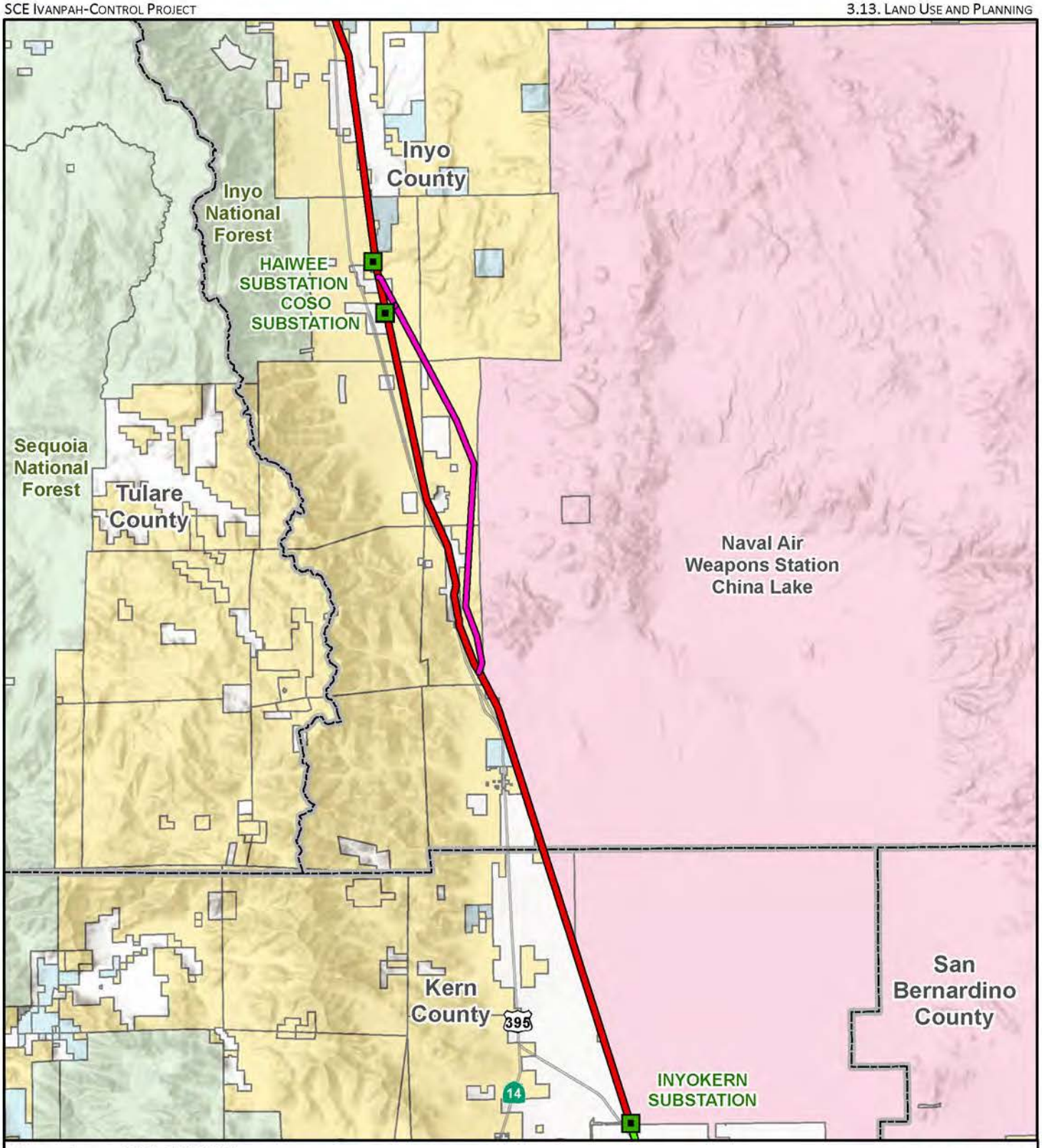
Manzanar Realignment Alternative

Land Management/Ownership

Bureau of Indian Affairs
Bureau of Land Management
LADWP and Local Government
Military
National Park Service
State
USDA Forest Service

1:316,800

N 0 5 Miles



Source: Aspen, 2024; BLM, 2024; CAL FIRE, 2024; ESRI, 2024; SCE, 2024.

Figure 3.13-1c

Land Management and Jurisdiction Segment 1 South

Substation
County Boundary

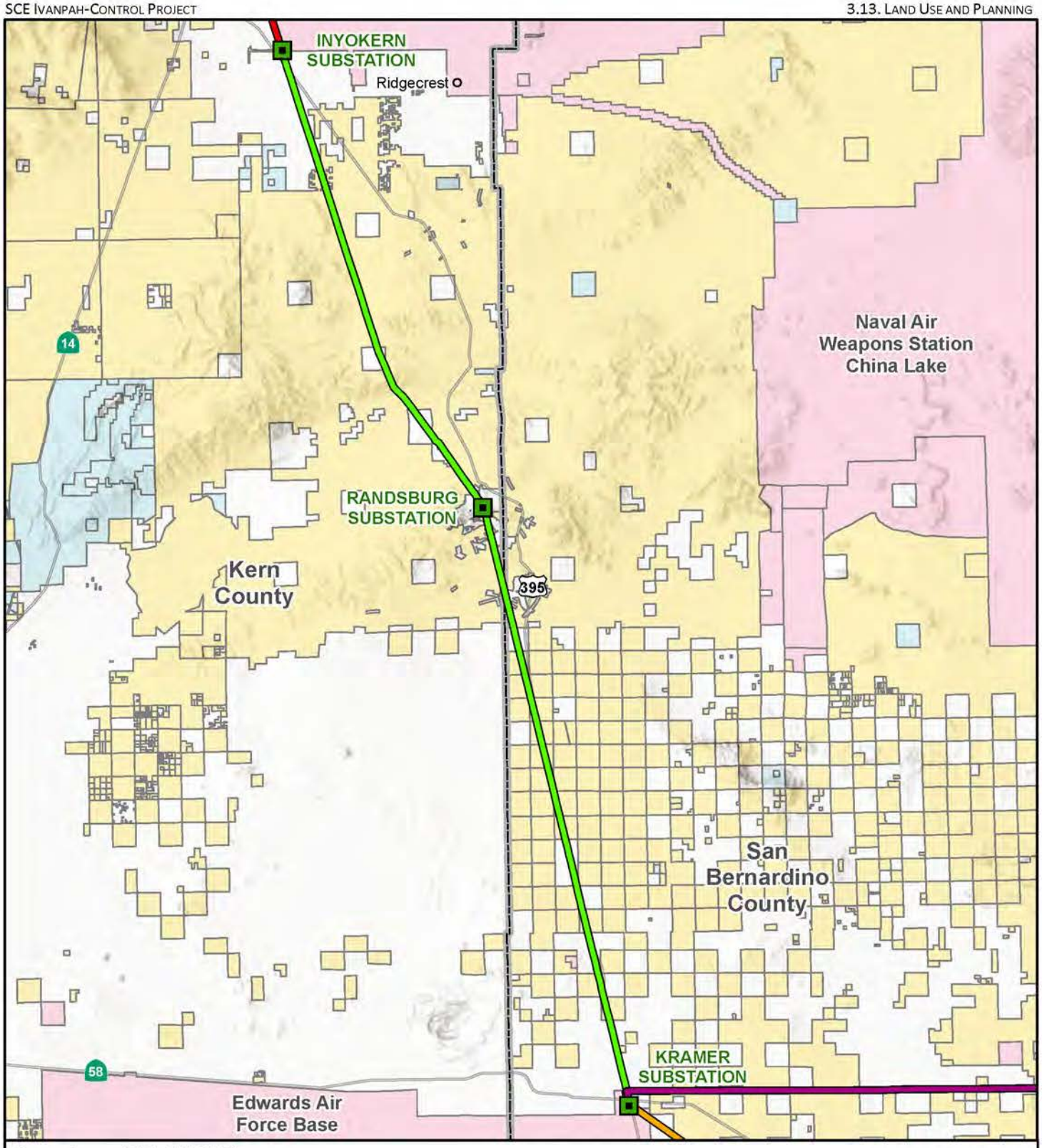
Ivanpah-Control Proposed Project Segments
- Segment 1: Control-Haiwee-Inyokern
- Segment 2: Inyokern-Kramer

Ivanpah-Control Project Alternatives
- Fossil Falls Realignment Alternative

Land Management/Ownership
- Bureau of Land Management
- LADWP and Local Government
- Military
- State
- USDA Forest Service

1:316,800

N 0 5 Miles



Source: Aspen, 2024; BLM, 2024; CAL FIRE, 2024; ESRI, 2024; SCE, 2024.

Figure 3.13-1d

Land Management and Jurisdiction Segment 2

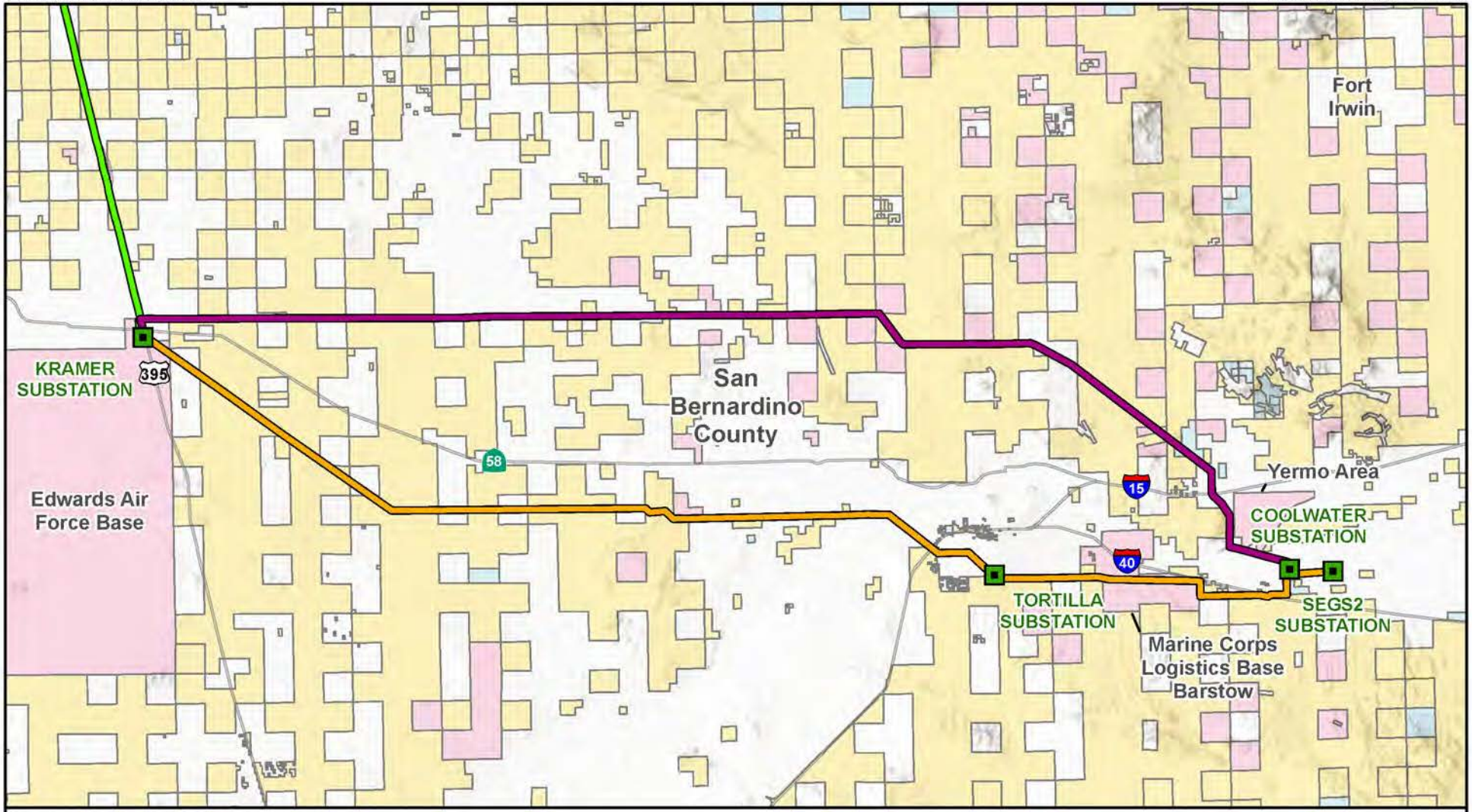
Substation
County Boundary

Ivanpah-Control Proposed Project Segments
- Segment 1: Control-Haiwee-Inyokern
- Segment 2: Inyokern-Kramer
- Segment 3N: Kramer-Coolwater
- Segment 3S: Kramer-Tortilla-Coolwater

Land Management/Ownership
- Bureau of Land Management
- LADWP and Local Government
- Military
- State
- USDA Forest Service

1:375,000

N 0 5 Miles



Source: Aspen, 2024; BLM, 2024; CAL FIRE, 2024; ESRI, 2024; SCE, 2024.

Figure 3.13-1e

Land Management and Jurisdiction Segments 3N and 3S

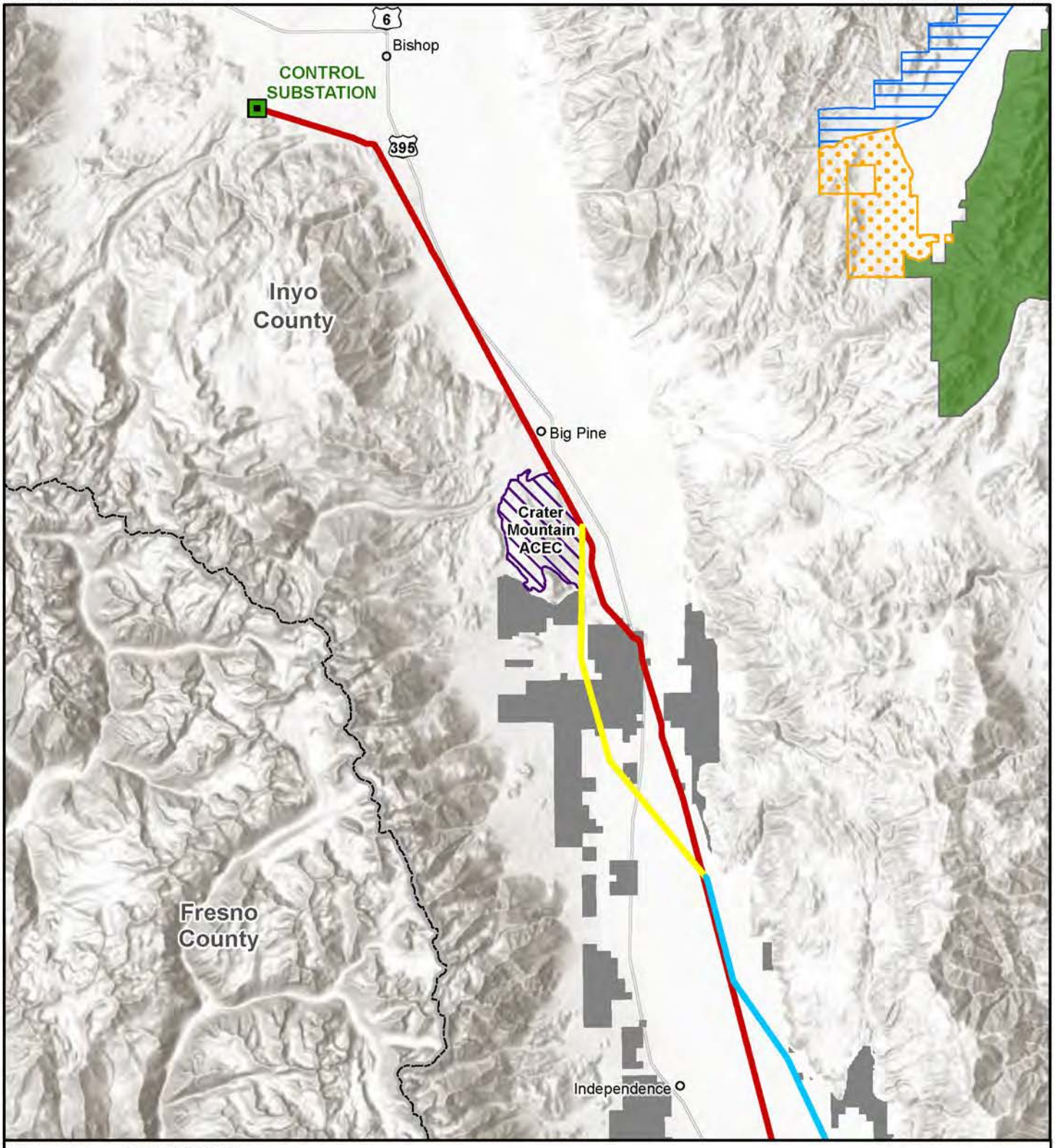
Substation

Ivanpah-Control Proposed Project Segments
- Segment 2: Inyokern-Kramer
- Segment 3N: Kramer-Coolwater
- Segment 3S: Kramer-Tortilla-Coolwater

Land Management/Ownership
- Bureau of Land Management
- LADWP and Local Government
- Military
- State

1:316,800

N 0 5 Miles



Source: Aspen, 2024; BLM, 2024; ESRI, 2024; SCE, 2024.

Figure 3.13-2a

BLM Land Designations Segment 1 North

BLM Land Designations
- Area of Critical Environmental Concern
- California Desert National Conservation Land
- General Public Land
- Land with Wilderness Characteristics
- Wilderness Area

- Substation
- County Boundary

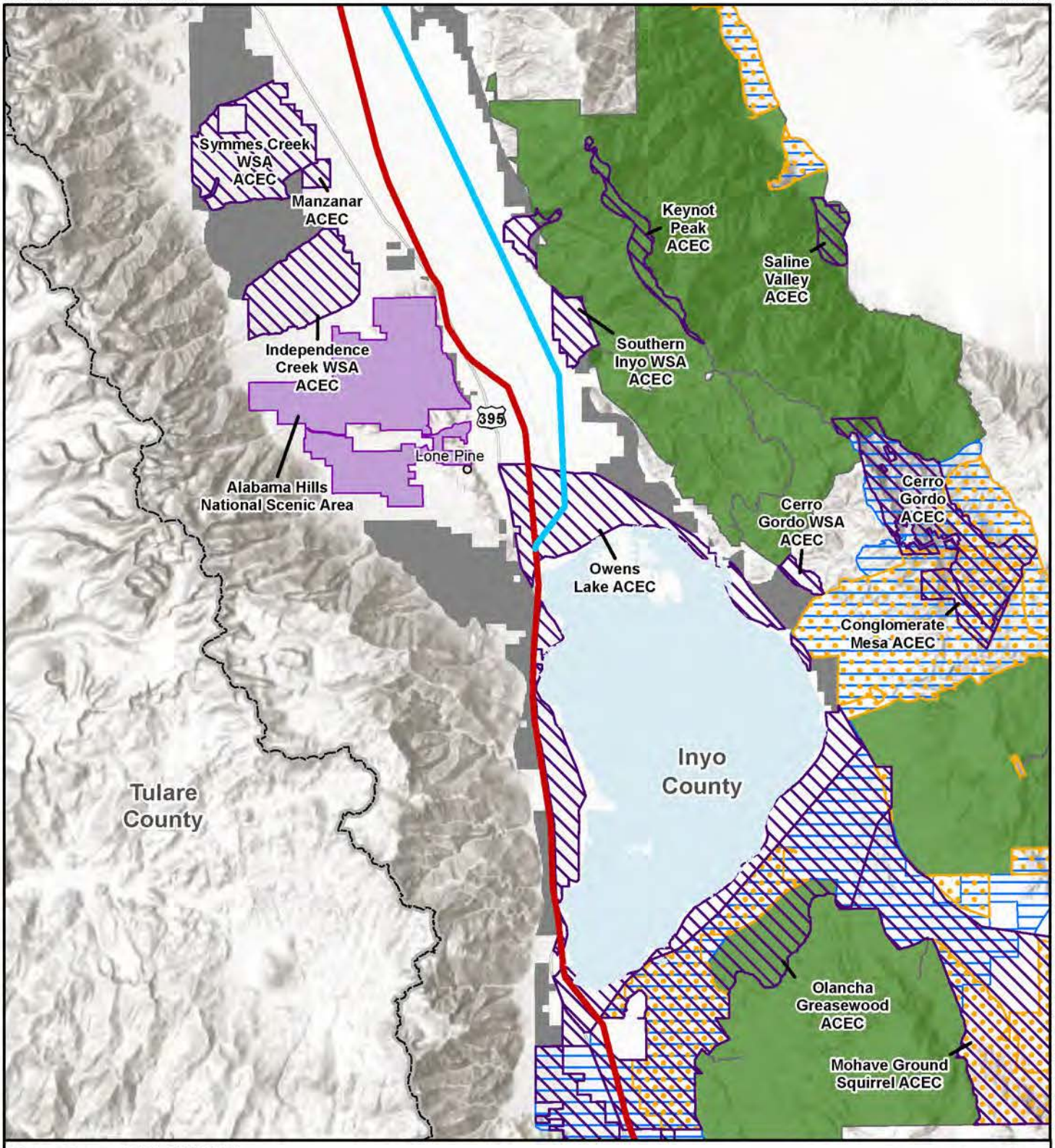
Ivanpah-Control Proposed Project Segments
- Segment 1: Control-Haiwee-Inyokern

Ivanpah-Control Project Alternatives
- Crater Mountain Realignment Alternative
- Manzanar Realignment Alternative

1:316,800

N 0 5 Miles

**Special Recreation Management Areas (SRMAs) are illustrated on maps in Section 3.18.*



Source: Aspen, 2024; BLM, 2024; ESRI, 2024; SCE, 2024.

Figure 3.13-2b

BLM Land Designations Segment 1 Central

BLM Land Designations
- Area of Critical Environmental Concern
- California Desert National Conservation Land
- General Public Land
- Land with Wilderness Characteristics
- National Scenic Area
- Wilderness Area

- County Boundary

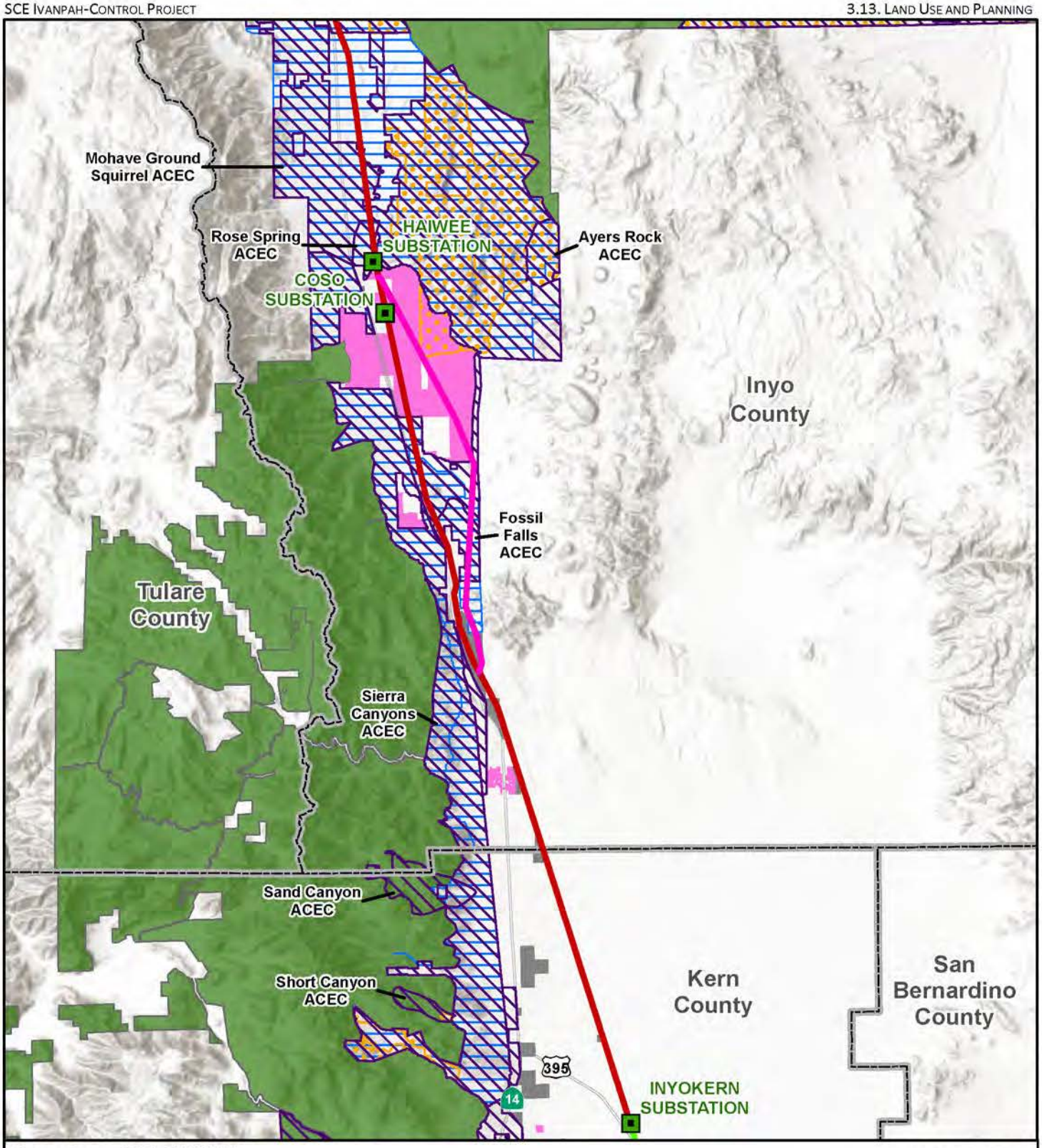
Ivanpah-Control Proposed Project Segments
- Segment 1: Control-Haiwee-Inyokern

Ivanpah-Control Project Alternatives
- Manzanar Realignment Alternative

1:316,800

N 0 5 Miles

**Special Recreation Management Areas (SRMAs) are illustrated on maps in Section 3.18.*



Source: Aspen, 2024; BLM, 2024; ESRI, 2024; SCE, 2024.

Figure 3.13-2c

BLM Land Designations Segment 1 South

BLM Land Designations
- Area of Critical Environmental Concern
- California Desert National Conservation Land
- Development Focus Area
- General Public Land
- Land with Wilderness Characteristics
- Wilderness Area

- Substation
- County Boundary

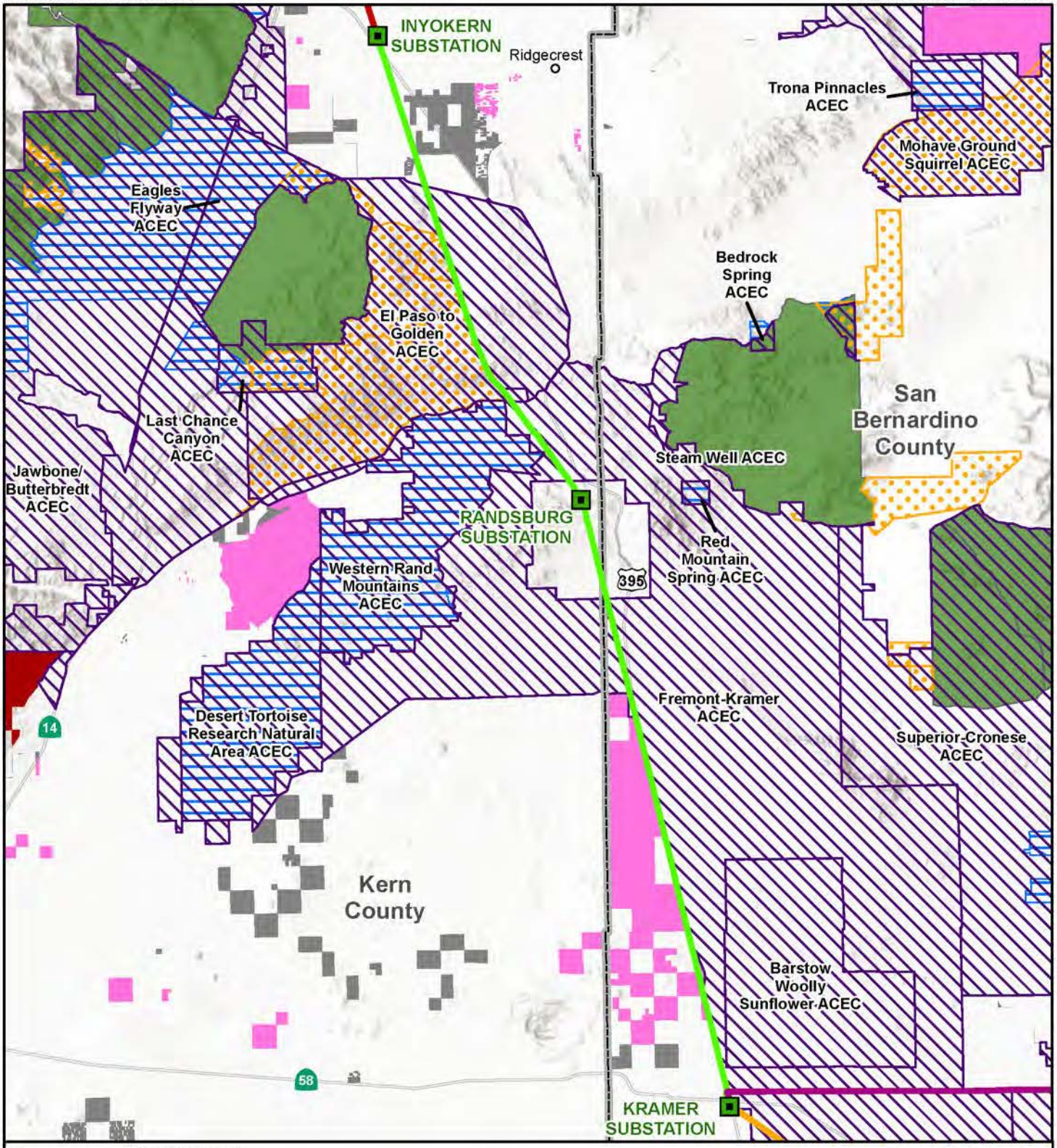
Ivanpah-Control Proposed Project Segments
- Segment 1: Control-Haiwee-Inyokern
- Segment 2: Inyokern-Kramer

Ivanpah-Control Project Alternatives
- Fossil Falls Realignment Alternative

1:316,800

N 0 5 Miles

**Special Recreation Management Areas (SRMAs) are illustrated on maps in Section 3.18.*



Source: Aspen, 2024; BLM, 2024; ESRI, 2024; SCE, 2024.

Figure 3.13-2d

BLM Land Designations Segment 2

BLM Land Designations
- Area of Critical Environmental Concern
- California Desert National Conservation Land
- Development Focus Area
- Variance Process Land
- General Public Land
- Land with Wilderness Characteristics
- Wilderness Area

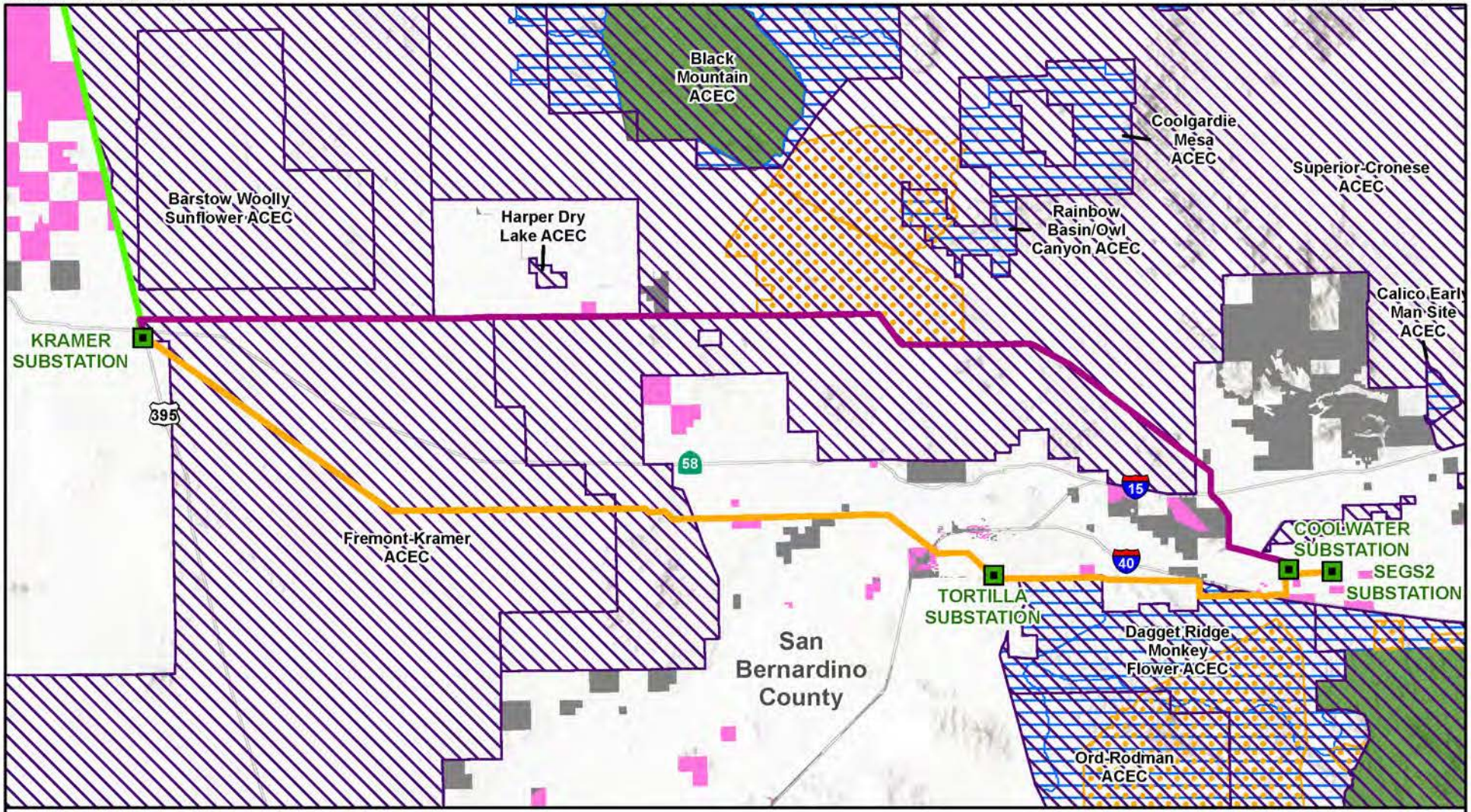
- Substation
- County Boundary

Ivanpah-Control Proposed Project Segments
- Segment 1: Control-Haiwee-Inyokern
- Segment 2: Inyokern-Kramer
- Segment 3N: Kramer-Coolwater
- Segment 3S: Kramer-Tortilla-Coolwater

1:375,000

N 0 5 Miles

**Special Recreation Management Areas (SRMAs) are illustrated on maps in Section 3.18.*



Source: Aspen, 2024; BLM, 2024; ESRI, 2024; SCE, 2024.

Figure 3.13-2e

BLM Land Designations Segments 3N and 3S

BLM Land Designations
- Area of Critical Environmental Concern
- California Desert National Conservation Land
- Development Focus Area
- General Public Land
- Land with Wilderness Characteristics
- Wilderness Area

Substation

Ivanpah-Control Proposed Project Segments
- Segment 2: Inyokern-Kramer
- Segment 3N: Kramer-Coolwater
- Segment 3S: Kramer-Tortilla-Coolwater

1:316,800

N 0 5 miles

**Special Recreation Management Areas (SRMAs) are illustrated on maps in Section 3.18.*

3.14. Mineral Resources

This section describes existing environmental conditions and anticipated impacts associated with the Proposed Project for mineral resources. Impacts evaluated in this section include the loss of availability of a known mineral resource or locally important mineral resource recovery site.

The environmental setting for mineral resources is presented in Section 3.14.1 and relevant regulations and standards are summarized in Section 3.14.2. Section 3.14.3 describes the Proposed Project impacts on the environment. These impact discussions introduce mitigation measures that would reduce or avoid significant adverse environmental impacts. Section 3.14.4 presents the mitigation monitoring, compliance, and reporting information, and Section 3.14.5 lists references cited in this section. Chapter 4 describes the environmental impacts of the alternatives. Cumulative impacts for all disciplines are considered in Chapter 5.

No scoping comments were submitted relevant to mineral resources.

3.14.1. Environmental Setting

According to the United States Geological Survey (USGS), a mineral resource is defined as a concentration of naturally occurring solid, liquid, or gaseous material in or on the earth's crust in such a form and quantity, and of such a grade or quality, that it has reasonable prospects for economic extraction, either currently or in the future. Mineral resources include oil, natural gas, and metallic and non-metallic deposits. Information on mineral resources was obtained through a review of literature, maps, GIS data, and online sources published by USGS, United States Bureau of Land Management (BLM), California Department of Conservation (DOC), California Geological Survey (CGS), and general plans for Kern County, Inyo County, San Bernardino County, and City of Barstow.

3.14.1.1. Regional Setting

Mineral Resource Classification and Designation

The USGS's Mineral Resources Data System (MRDS) provides a collection of reports describing metallic and nonmetallic mineral resources throughout the world. A review of the MRDS indicates approximately 430 records of mineral resource deposits and historical mining sites within 1 mile of the Proposed Project. Records of metallic minerals in the project vicinity include antimony, cerium, gold, niobium (columbium), silver, tungsten, antimony, barium, copper, gold, iron, lead, manganese, silver, thorium, tungsten, uranium, zinc, as well as rare-earth elements, which include 17 different metallic elements (USGS, 2011). Records of nonmetallic minerals in the project vicinity include barite, bentonite, boron-borates, calcium, clay, diatomite, feldspar, granite, limestone, perlite, pumice, sand and gravel, sodium, stone, talc-soapstone, volcanic materials, and wollastonite (USGS, 2011).

USGS conducts energy and mineral resource assessments based on mineral resource potential. These assessments are used to identify areas containing concentrations of mineral resources that are categorized as either locatable, leasable, or mineral materials (previously salable). Locatable minerals include metallic minerals. Leasable minerals include fluids and associated gases. Mineral materials include various construction materials such as sand, gravel, and stone. The BLM utilizes the mapping and associated GIS data developed by USGS for mineral concentrations when making land use planning decisions. The BLM identified mineral resource concentration in the Desert Renewable Energy Conservation Plan (DRECP) Land Use Plan Amendment (LUPA) based on a report prepared by USGS (USGS, 1981). BLM Manual 3031—Energy and Mineral Resource Assessment (BLM, 1985) outlines BLM's mineral potential classification system, which includes the following classification levels:

- Zero: The geologic environment, the inferred geologic processes, and the lack of mineral occurrences do not indicate potential for accumulation of mineral resources.

- Low: The geologic environment and the inferred geologic processes indicate a low potential for accumulation of mineral resources. BLM no longer evaluates low-level potential.
- Moderate: The geologic environment, the inferred geologic processes, and the reported mineral occurrences or valid geochemical/geophysical anomalies indicate moderate potential for accumulation of mineral resources.
- High: The geologic environment, the inferred geologic processes, the reported mineral occurrences and/or valid geochemical/geophysical anomalies, and the known mines or deposits indicate high potential for accumulation of mineral resources. The "known mines and deposits" do not have to be within the area classified but have to be within the same type of geologic environment.
- Not Determined: Mineral potential is not determined because of a lack of useful data. This notation does not require a level-of-certainty qualifier. This level is seldom used; when used, it is for a specific commodity only.

The BLM has identified locatable and other mineral material classified areas within 1,000 feet of the Proposed Project. No areas within 1,000 feet of the Proposed Project are classified as leasable mineral resource areas. Locatable and mineral material classifications are described by segment in Section 3.14.1.2.

The Surface Mining and Reclamation Act of 1975 (SMARA) requires CGS to conduct Mineral Land Classification (MLC) studies and identify and map Mineral Resource Zones (MRZs). The State's MRZ classification categories include MRZ-1, MRZ-2a, MRZ-2b, MRZ-3a, MRZ-3b, and MRZ-4, as defined in Table 3.14-1. MRZ-2a and MRZ-2b are considered to have the highest economic importance because the resource significance has been identified and either determined or inferred through evidence. MRZ-3a and MRZ-3b are considered to have moderate economic importance based on the likelihood of the resource significance but undetermined presence. MRZ-1 and MRZ-4 are considered to have low economic importance because significant resources are unlikely or unknown.

Table 3.14-1. Mineral Resource Zone Classification Categories

Category	Description	Potential Mineral Resource Significance	Economic Importance
MRZ-1	Areas where available geologic information indicates there is little likelihood for the presence of mineral resources.	Unlikely	Low
MRZ-2a	Areas that contain significant measured or indicated reserves.	Identified (Demonstrated)	High
MRZ-2b	Areas where geologic information indicates that significant inferred resources or demonstrated sub-economic resources are present.	Identified (Inferred)	High
MRZ-3a	Areas likely to contain undiscovered mineral deposits similar to known deposits in the same producing district or region (hypothetical resources).	Undetermined (Known Occurrence)	Moderate
MRZ-3b	Areas judged to be favorable geologic environments for mineral resource occurrence, but where mineral discoveries have not been made in the region (speculative resources).	Undetermined (Inferred Occurrence)	Low to Moderate
MRZ-4	Areas where geologic information does not rule out either the presence or absence of mineral resources.	Unknown	Low

Source: (DOC, 2000)

The State Mining and Geology Board (SMGB) is responsible for formally designating mineral resource areas to be of regional or state-wide significance using the MRZ classifications from CGS. MRZ classification alone does not require specific land use policies to preserve high value MRZs. Such policies become required at a state level following formal designation by the SMGB; however, local jurisdictions are

encouraged to adopt land use policies that preserve high value MRZs until the SMGB makes a formal decision to designate the MRZs to be of local or state-wide significance. Once designated, counties and cities are responsible for incorporating the results of the State's MLC studies and significance designations into their general plan, developing policies to conserve important mineral resource areas, and preventing land use decisions that would create an incompatible use or restrict the designated mineral resource recovery. The MLC, designation, and conservation processes are explained further in the regulatory setting sections, 3.13.2.2 and 3.13.2.3.

The Proposed Project is located within 7 MLC study areas that have been conducted in Kern and San Bernardino counties. The project is not located within any MLC study areas conducted in Inyo County. The results of these studies are published in CGS Open File Reports 99-15, 94-04, 92-06, 97-16, 84-51, 85-15, and 84-02 (CGS, 1984a; CGS, 1984b; CGS, 1985; CGS, 1990; CGS, 1993; CGS, 1994; CGS, 1997; CGS, 1999). Kern County identifies MRZ-2a and MRZ-2b for conservation and San Bernardino County identifies MRZ 2a, MRZ-2b, and MRZ-3a for conservation as well as important Aggregate Production and Consumption Areas. The Proposed Project intersects with these MRZ classifications in Segments 2, 3S, and 3N, indicating significant mineral resources may be present; however, none of these areas have been formally designated by the SMGB to be of regional or state-wide significance. The closest designated areas of significance are in southern San Bernardino County and central Kern County (SMGB, 2017; SMGB, 2018). Areas within 1,000 feet of the Proposed Project that are classified as MRZ-2a, MRZ-2b, and MRZ 3a are described by segment in Section 3.14.1.2.

Mineral Resource Recovery

There are records of numerous historic mines and extensive mining activities within 1 mile of the Proposed Project. Five mining operations and 22 aggregate sites (i.e., mines and pits) occur within 1 mile of the Proposed Project (USGS, 2005; BLM, 2014). Active mineral resource recovery sites are described by segment in Section 3.14.1.2.

The Proposed Project is located on land administered by the BLM and adjacent to land administered by the National Forest service where companies or individuals hold active mining claims. The BLM's Legacy Rehost System (called LR2000) provides reports on federal land and mineral use authorizations. A review of the LR2000 database and associated maps indicates the Proposed Project crosses or is adjacent to 55 township and range sections of federal land that contain approximately 377 active mining claims ranging in size from 2 acres to 160 acres (BLM, 2021; Land Matters, 2019). Active mining claims are described by segment in Section 3.14.1.2.

According to the latest maps published by the DOC's Division of Oil, Gas, and Geothermal Resources, oil and gas production occur in Kern and San Bernardino counties, and geothermal production occur in Inyo, Kern, and San Bernardino Counties (DOC, 2001). The only designated resource field in the project region is the Coso Geothermal Field where multiple geothermal power plants are located in Inyo County, roughly 5 miles east of the Proposed Project alignment near Coso Junction (Segment 1). Both US 395 and the Proposed Project alignment cross the eastern boundary of a Known Geothermal Resource Area (KGRA) that surrounds the Coso Geothermal Field; however, geothermal production and energy generation do not occur in the immediate Project vicinity (NREL, 2019). In San Bernardino County, the Proposed Project is located roughly 4 miles west of the Ransburg KGRA (NREL, 2019).

3.14.1.2. Environmental Setting by Segment

Table 3.14-2 provides a summary of BLM and State-classified mineral resource areas within 1,000 feet of the Proposed Project. Table 3.14-3 provides a summary of active mineral resource recovery sites within 1 mile of the Proposed Project; the locations are shown on Figure 3.14-1a through Figure 3.14-1e (Active Mineral Recovery Sites in Project Vicinity).

Table 3.14-2. Mineral Resources Areas within 1,000 Feet of the Proposed Project

Category	Description	Acres per Segment				Total Acres
		1	2	3N	3S	
Federally-classified High Potential Mineral Areas on Federal Land						
Locatable	Metallic minerals such as gold, silver, copper, lead, zinc, and uranium; non-metallic minerals such as alunite, asbestos, barite, bentonite, gypsum, geodes/gem minerals, mica, and zeolites; and uncommon varieties of stone.	376	822	--	--	1,198
Leasable	Fluid minerals such as oil, gas, coalbed methane, carbon dioxide, and geothermal resources, as well as solid minerals such as coal, sodium, potash, and helium.	--	--	--	--	0
Mineral Materials	Construction materials such as sand, gravel, cinders, decorative rock, and building stone.	346	--	--	--	346
Rare Earth Element Areas	Metallic minerals, including cerium, dysprosium, erbium, europium, gadolinium, holmium, lanthanum, lutetium, neodymium, praseodymium, promethium, samarium, scandium, terbium, thulium, ytterbium, and yttrium.	--	--	--	--	1,891
State-classified MRZs [a]						
MRZ-2a	Areas that contain significant measured or indicated reserves.	--	48	14	--	62
MRZ-2b	Areas where geologic information indicates that significant inferred resources or demonstrated sub-economic resources are present.	--	748	--	--	748
MRZ-3a [b]	Areas likely to contain undiscovered mineral deposits similar to known deposits in the same producing district or region (hypothetical resources).	--	--	267	238	505

[a] There are no State-designated mineral resource areas of regional or state-wide importance in the Proposed Project area. The MRZs that intersect with the study area are located in Kern and San Bernardino County, and are identified in CGS's Open File Reports 84-02, 84-51, 94-04, 97-16, and 99-15. No MLC studies have been conducted in Inyo County where the Project is located.

[b] MRZ-3a is only identified for areas in San Bernardino County. Kern County does not identify MRZ-3a as a protected classification, only MRZ-2a and MRZ-2b.

Source: (San Bernardino County, 2019; BLM, 2014; USGS, 1981; CGS, 1984a; CGS, 1984b; CGS, 1985; CGS, 1990; CGS, 1990; CGS, 1993; CGS, 1999)

Table 3.14-3. Active Mineral Resource Recovery Sites within 1 mile of the Proposed Project

Name/ Category	Description	Active Sites per Segment				Total Sites
		1	2	3N	3S	
Active Mining Operations	Mining Operations: areas with significant mining activities or industrial mineral recovery and processing.	2	1	--	1	4
	Aggregate Pits: areas with minor to moderate mining activities, such as small to medium open borrow pits used for various sources of aggregate.	15	2	3	2	22
Active Mining Claims on Federal Land [a]	Lode Claims: classic deposit veins or lodes having well-defined boundaries.	6	77	40	--	123
	Placer Claims: all forms of deposit, excepting veins of quartz, or other rock in-place.	4	57	3	--	64
	Mill Site Claims: locations where materials are processed on non-mineral lands separated from load and placer sites.	--	1	--	--	1
	Tunnel Site Claims: subsurface rights-of-way are granted for mineral recovery.	--	1	--	--	1

Name/ Category	Description	Active Sites per Segment 1	2	3N	3S	Total Sites
Active Wells	Wells: gas, oil, or geothermal wells identified in DOC's Well Star database.	--	--	--	--	0

[a] The boundaries of mining claims on federal land are defined by legal descriptions in terms of the public land survey system, which include specific fractional units of township and range sections where they are located. There is no federal database that provides the mapped boundaries of mining claims; therefore, mining claims are described generally by township and range section.

Source: (USGS, 2005; DOC, 2018; BLM, 2021; BLM, 2019; Land Matters, 2019; DOC, 2019)

Segment 1: Bishop to Inyokern

No State-classified MRZs are present within Segment 1. Two active mining operations, including the Owens Lake Trona Mine and Red Hill Quarry. There are 15 active aggregate sites and 10 active mining claims (Table 3.14-3 and Figure 3.14-1a through Figure 3.14-1c (Active Mineral Resource Recovery Sites in Project Vicinity, Segment 1) are located within 1 mile of Segment 1.

The Owens Lake Trona Mine, owned and operated by U.S. Borax, is located on the west side of the Owens Lake and immediately east of US 395. The site is roughly 0.5 mile east of the Proposed Project on the opposite side of US 395 and encompasses an approximately 1,000-acre area. The primary commodity mined at the site is trona which produces sodium carbonate. The Owens Lake Trona Mine is identified by the BLM as a high priority mineral location (BLM, 2014).

Red Hill Quarry, owned and operated by Twin Rock Mountain Venture, is located approximately 4 miles south of Coso Junction and immediately east of US 395. The site encompasses an approximately 150-acre area. The Proposed Project is located within a few hundred feet of surface disturbance associated with mining activities on the south side of a large volcanic cinder cone, as visible in recent aerial imagery. The primary commodity mined at the site is crushed stone.

The Proposed Project crosses or is immediately adjacent to four aggregate sites and is located approximately 500 feet to 1 mile away for 11 other aggregate sites. The aggregate sites consist of pits or heavily graded areas (roughly 1 to 30 acres in size) that are used to supply LADWP, Caltrans, and Inyo County projects among others (DOC, 2018). The aggregate sites within 1 mile of Segment 1 include #177 Coso Pit, #288 New Coso Pit, #291 Cottonwood Pit, A&R House Pit, Alabama Gates #1, Alabama Gates #2, Bishop Sunland Pit, Brown's Sunland Pit, Bypass Creek Pit, Cottonwood Creek Pit, Coyote Valley Aggregate, Fish Springs #1 Pit, O.H. 55 Pit, Power Patrol Road Pit, and Sunland Pit (DOC, 2018).

Segment 2: Inyokern to Kramer Junction

Segment 2 is located within and adjacent to areas that contain known mineral resources, such as gold and silver, including federally-classified locatable minerals and State-classified MRZ-2a and MRZ-2b (Table 3.14-2). A historic and semi-active mining area, the Rand Mining Complex (or District); 2 active aggregate sites; and 136 active mining claims are located within 1 mile of Segment 2 (Table 3.14-3 and Figure 3.14-1d (Active Mineral Resource Recovery Sites in Project Vicinity, Segment 2).

The historic Rand Mining Complex, comprised of multiple mines, is located in Randsburg, Red Mountain, and Johannesburg where US 395 crosses the shared border of Kern and San Bernardino counties. The site encompasses an approximately 1,300-acre area and includes the state classified MRZs (2a and 2b) as identified in Table 3.14-2. The area has been mined extensively for gold and silver starting in the late 1800s and is now designated as a historical landmark (California Office of Historic Preservation, 1981). Numerous historic and semi-active mining sites are identified in USGS and DOC data sources, many of which are mines that are no longer mined and undergoing reclamation, as required by state and federal laws. The Proposed Project crosses directly through the Rand Mining Complex and between two substantial terraced mining pits, the closest of which is within approximately 300 feet from the existing subtransmission line and has a depth of approximately 350 feet.

The Proposed Project crosses two active aggregate sites, the Garlock Pit and Arlock Mine, located on either side of Garlock Rd approximately 2 miles west of US 95. The sites encompass an approximately 50-acre area. Two staging areas are proposed at the Garlock Pit on the south side of Garlock Road (Staging Areas 1-5 and 1-6).

Segment 3N: Kramer Junction to Daggett

Segment 3N is located within and adjacent to areas that contain known mineral resources, including State-classified MRZ-2a and MRZ-3a (Table 3.14-2). No federally-classified mineral resource areas are located in Segment 3N.

Segment 3N is located within 1 mile of 3 active aggregate sites and 4 active mining claims (Table 3.14-3 and Figure 3.14-1e (Active Mineral Resource Recovery Sites in Project Vicinity, Segments 3N and 3S). The aggregate sites include Lynx Cat Mountain Quarry located approximately 12 miles northwest of Barstow, and Pink Lady Quarry and Beige Rock, which are both located at the same geologic formation approximately 5 miles northeast of Barstow. The Pink Lady Quarry and Beige Rock geologic formation is located approximately 500 feet from the Proposed Project; Lynx Cat Mountain Quarry is more than 4,000 feet from the Proposed Project.

Segment 3S: Kramer Junction to Barstow to Daggett

Segment 3S is located within and adjacent to areas that contain known mineral resources, including State-classified MRZ-3a (Table 3.14-2). No federally-classified mineral resource areas are located in Segment 3S.

Segment 3S is approximately 0.5 mile south of the Barstow Plant where aggregate is mined and processed over an approximately 340-acre site. Two aggregate pits are also within 1 mile of Segment 3S, including the Kramer Junction Pit and NEBO Quarry (Table 3.14-3 and Figure 3.14-1e (Active Mineral Resource Recovery Sites in Project Vicinity, Segments 3N and 3S). The Kramer Pit is a small, approximately 1-acre site. The NEBO Quarry encompasses an approximately 50-acre area.

3.14.2. Applicable Regulations, Policies, and Standards

3.14.2.1. Federal Regulations, Policies, and Standards

General Mining Law of 1872 (30 United States Code [U.S.C.] 21 et seq.)

The General Mining Law, as amended, grants citizens (and those seeking citizenship) of the United States the right to enter public federal lands (e.g.., land administered by the BLM) and reserve interests for the exploration and development of minerals, subject to this mining law. The law specifically includes minerals such as gold, silver, copper, lead, zinc, and uranium; nonmetallic minerals such as asbestos, barite, gypsum, and mica; and uncommon varieties of stone (43 Code of Federal Regulation [CFR] Group 3800). The General Mining Law sets forth rules and procedures for the exploration, location, and patenting of lode, placer, and mill site mining claims. Claimants must file notice of the original claim with the BLM, as well as either an annual notice of the intention to hold, an affidavit of assessment work, or a similar notice.

Stock Raising Homestead Act of 1916 (43 U.S.C. 291-299)

Patents issued under the Stock Raising Homestead Act reserved minerals to the United States and granted the right to prospect, mine, and remove specified minerals. Certain conditions exist to protect the patent applicant's improvements.

Mineral Leasing Act of 1920 (30 U.S.C. 181 et seq.)

The Mineral Leasing Act authorizes and governs the leasing of public lands for development of deposits of coal, oil, gas, and other hydrocarbons, sulfur, phosphate, potassium, and sodium. The BLM issues right-of-way grants for oil and natural gas gathering, distribution pipelines, and related facilities, as well as oil and natural gas transmission pipelines and related facilities (43 CFR Part 2880, and Subchapter C).

Materials Sales Act of 1947 (30 U.S.C. 601–604)

The Materials Sales Act provides for materials disposal on public lands. The Secretary of the Department of the Interior (DOI) is authorized to develop and implement rules and regulations to dispose of mineral materials (including, but not limited to, common varieties of sand, stone, gravel, pumice, pumicite, cinders, and clay) and vegetative materials (including, but not limited to, yucca, manzanita, mesquite, cactus, and timber or other forest products) on public lands in the United States. These materials can be disposed of upon adequate payment to the DOI. The Secretary of the Interior has the authority and discretion to permit any federal, state, or territorial agency, unit, or subdivision, including municipalities, or any other association or corporation not organized for profit, to take and remove, without charge, materials and resources for uses other than commercial or industrial purposes or resale (43 CFR Group 3600).

Mineral Leasing Act for Acquired Lands of 1947 (30 U.S.C. 351 et seq.)

The Mineral Leasing Act for Acquired Lands broadens provisions of the Mineral Leasing Act and the authority of the Secretary of the Interior to include oil and gas operations on federal lands.

Mining and Mineral Policy Act of 1970 (30 U.S.C. 21[a])

The Mining and Mineral Policy Act fosters and encourages the private development of economically sound and stable domestic mining and mineral, metal, and mineral reclamation industries. The law also fosters the orderly and economic development of domestic mineral resources, reserves, and the reclamation of metals and minerals to satisfy industrial, security, environmental, mining, mineral, and metallurgical research, including the use and recycling of scrap to promote the efficient use of natural and reclaimable mineral resources. The law further promotes the study and development of methods for the disposal, control, and reclamation of mineral waste products, as well as the reclamation of mined lands to lessen the environmental impacts of mining's many aspects and activities. Surface Mining Control and Reclamation Act of 1977 (30 U.S.C. 1201 et seq.) The Surface Mining Control and Reclamation Act establishes a program for the regulation of surface mining activities under the administration of DOI's Office of Surface Mining, Reclamation, and Enforcement.

Surface Mining Control and Reclamation Act of 1977 (30 U.S.C. 1201 et seq.)

The Surface Mining Control and Reclamation Act establishes a program for the regulation of surface mining activities under the administration of DOI's Office of Surface Mining, Reclamation, and Enforcement. The law sets forth minimum uniform requirements for all mining on federal lands, including both the exploration for resources and the reclamation of mined lands to mitigate the many above-ground effects from mining. Mine operators are required to minimize disturbances and adverse impacts on fish, wildlife, and other elements of the natural environment, and to enhance these resources where practical. Restoring land and water resources is a priority in the reclamation planning process.

Federal Land Policy and Management Act of 1976

Section 302 of the Federal Land Policy and Management Act of 1976 (FLPMA) recognizes the rights of locators to claims filed under the Mining Law of 1872, including the right of ingress and egress. This section also requires the Secretary of the Interior to take any action, through regulation or otherwise, to prevent unnecessary or undue degradation of the [public] lands (43 U.S.C.1732). The regulations contained in 43 CFR 3715, 43 CFR 3802 and 43 CFR 3809 balance these two mandates by requiring management of the surface disturbances caused by mineral exploration development and reclamation, including mining claim use and occupancy. Appropriation of a mineral deposit is made by the location of a mining claim. A mining claimant's rights under the mining laws are subject to, and validated by, the discovery of a valuable mineral deposit that has been made within the boundaries of the mining claim. Exploration and development must: (1) obey all applicable federal and state laws, regulations, and policies, and (2) be conducted

within applicable approved land use plans. Restrictions and stipulations may apply to a proposed mining activity, based on review and analysis by the authorized officer.

Bureau of Land Management Manual 3031 (1985)—Energy and Mineral Resource Assessment

The BLM Manual 3031—Energy and Mineral Resource Assessment, outlines BLM's mineral potential classification system, which includes classification levels based on resource potential or likelihood of occurring in a given area and the level of certainty: Zero, Low, Moderate, High, Not Determined.

Bureau of Land Management Policy and Guidance Related to Minerals and Mining

The BLM categorizes locatable, leasable, or mineral materials (previously salable) minerals in the federal estate. Each classification is administered differently with each category having unique regulatory requirements for administration for acquisition, exploration, and development. Locatable minerals include metallic minerals. Leasable minerals include fluids and associated gases. Mineral materials include various construction materials such as sand, gravel, and stone.

The BLM policy and guidance related to locatable minerals includes BLM Manual 3800—Mining Claims under the General Mining Laws, and BLM Handbook H-3042-1—Solid Minerals Reclamation Handbook.

The BLM policy and guidance related to leasable minerals includes BLM Manual Series 3100 Onshore Oil and Gas Leasing, and further includes all associated handbooks, instruction memoranda, and orders.

The BLM policy and guidance related to mineral materials includes BLM Handbook H-3242-1, Solid Minerals reclamation Handbook and BLM Manual and Handbook 3600.

Under Subsection 3809.10, BLM classifies mining operations, including casual use (minor disturbance); notice-level operations (mineral exploration disturbing less than five acres and/or excavating less than 1,000 tons of material); and plan-level operations (mining operations, large exploration operations, or mining related activities within certain special-status lands).

Memorandum of Understanding between the Department of the Interior (Bureau of Land Management), Department of Agriculture (U.S. Forest Service), and the State of California Department of Conservation and State Mining and Geology Board

The purpose of the Memorandum of Understanding of 1992 (MOU) is to coordinate surface mining and reclamation in accordance with California's Surface Mining and Reclamation Act of 1975, as amended. The MOU ensures (1) the application of adequate and appropriate reclamation throughout the State of California, (2) simplification of the administration of surface mining and reclamation practice requirements on federal lands and on combined federal and private lands, (3) coordination of activities governing reclamation, and (4) elimination of duplication among lead agencies and counties (as defined in the Surface Mining and Reclamation Act, Public Resources Code Section 2728) when implementing state and federal requirements. The MOU acknowledges that the federal government recognizes that the Surface Mining and Reclamation Act applies to public lands in California, and that counties act as the "lead agencies" responsible for regulating and protecting mineral resources classified by the State Geologist and the SMGB.

3.14.2.2. State Regulations, Policies, and Standards

Surface Mining and Reclamation Act of 1975

The Surface Mining and Reclamation Act (SMARA) was enacted to ensure a reliable and continuous supply of minerals, and to prevent or minimize the impacts of surface mining to public health, property, and the environment. The Department of Conservation, Office of Mine Reclamation, and the State Mining and Geology Board (SMGB) are jointly charged with ensuring proper administration of SMARA's requirements. The State Mining and Geology Board promulgates regulations to clarify and interpret SMARA's provisions

and also serves as a policy and appeals board. The Office of Mine Reclamation provides ongoing technical assistance for lead agencies and operators, maintains a database of mine locations and operational information statewide, and is responsible for compliance with mineral-related issues.

SMARA mandates a two-phase process called classification-designation to address mineral resource conservation. Classification is carried out by CGS, and designation is a function of the SMGB. CGS conducts MLC studies pursuant to the SMARA (PRC 2710 et seq.) which include maps identifying MRZs that may be eligible for formal conservation designation status by the SMGB. The classification of MRZs is based on geologic factors without regard to existing land uses and land ownership. The State's MRZ classification categories are defined in Table 3.14-1.

Pursuant to § 2790, the SMGB makes the determination of which MRZs and associated geographic areas identified in the MLC studies to formally designate as regionally significance, and therefore, must be conserved from incompatible land uses, as defined in § 3675. The SMGB does not categorically designate any MRZs classification categories as regionally significant, nor have all areas in the state been subject to an MLC study.

Mineral resource classification and designation information are transmitted to local lead agencies (i.e., county and city governments) who are required to establish Mineral Resource Management Policies, to the extent applicable, in their general plan in accordance with SMARA § 3676 and PRC § 2762(a). These policies include (1) recognizing the mineral land classification information generated by the State Geologist and transmitted to the SMGB; (2) assists in the management of land use that affects areas of statewide and regional significance (designated areas); and (3) emphasizes the conservation and development of the identified mineral deposits (SMGB, 2017). Local mineral resource policies for state classified and designated mineral resource areas are described in Section 3.14.2.3.

3.14.2.3. Local Regulations, Policies, and Standards

Pursuant to General Order 131-E, the project is not subject to local land use authority because the CPUC has exclusive jurisdiction over the siting, design and construction of electric power line projects, distribution lines, substations, and electric facilities constructed by public utilities subject to CPUC jurisdiction. Local ordinance policies and requirements are presented here only where these requirements are used as the basis for impact analysis.

Inyo County General Plan

The Conservation/Open Space Element of the Inyo County General Plan (2001, as amended), Section 8.4 Mineral and Energy Resources, provides the following goal and related policies for mineral resources:

- **Goal MER-1:** Protect the current and future extraction of mineral resources that are important to the County's economy while minimizing impacts of this use on the public and the environment.
- **Policy MER-1.5:** Maintain Accessibility. This policy is intended to ensure that extractive resource areas are protected from incompatible development that could interfere with existing or future operations. Associated implementation measures include efforts to review development proposals to ensure compatibility and discourage incompatible uses.
- **Implementation Measure 7.0:** Discourage incompatible development on lands identified as containing significant mineral resources. Support uses that will not preclude future mining activities.

The Inyo County general plan does not identify specific mineral resource conservation areas.

Inyo County Code

Chapter 7.70 of Inyo County Code, Surface Mining and Land Reclamation, identifies the County's surface mining and reclamation policy including regulation of mining operations to implement section 2710 et. seq. of the California Public Resources Code and assure the following:

- Adverse environmental effects are prevented or minimized and that mined lands are reclaimed to a usable condition which is readily adapted for alternative land use.
- The production and conservation of minerals are encouraged, while giving consideration to values relating to recreation, watershed, wildlife, range and forage, and aesthetic enjoyment.
- Residual hazards to public health and safety are eliminated.

Zoning districts M-1 and M-2 provide for processing, mining, ore reduction and mineral development activities, provided such activity does not cause pollution of any human or natural resource. There are no specific mineral resource conservation areas identified in the County's zoning maps.

Kern County General Plan

The Land Use, Open Space, and Conservation Element of the Kern County General Plan (2009, as amended), Section 1.9 Resource, provides the following goals, policies, and implementation measures that relate to mineral resources:

- **Goal 2:** Protect areas of important mineral, petroleum, and agricultural resource potential for future use.
- **Policy 14:** Emphasize conservation and development of identified mineral deposits.
- **Policy 17:** Protect lands classified by the State as MRZ-2a or MRZ-2b from encroachment of incompatible land uses.
- **Policy 25:** Discourage incompatible land use adjacent to Map Code 8.4 Mineral and Petroleum areas.
- **Measure H:** Use the CGS's current maps to locate mineral deposits until the regional and statewide importance mineral deposits map has been completed as required by SMARA.
- **Measure K:** Protect oilfields and mineral extraction areas through the use of appropriate implementing zone districts: A (Exclusive Agriculture), DI (Drilling Island), NR (Natural Resource), or PE (Petroleum Extraction).

San Bernardino Countywide Plan

The San Bernardino Countywide Plan, including the associated Policy Plan (County of San Bernardino, 2020) contains goals and polices regarding the conservation and protection of mineral resources in the County, including the following:

- **Goal NR-6, Mineral Resources.** Mineral resource zones that allow extraction industries to continue supporting the regional and national economy while minimizing negative impacts on the public and natural environment.
- **Policy NR-6.1, Mineral Resource Areas.** 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 MRZ-2a, MRZ-2b, or MRZ-3a.
- **Policy NR-6.3, Conservation of Construction Aggregate.** 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.

The County's NR-4 Policy Map identifies areas of the County that have been classified by CGS as MRZ-2a, MRZ-2b, or MRZ-3a. The map distinguishes between the types of mineral resources in each MRZ, which include Magmatic Concentration (Rare Earth Elements), Contact Metasomatic (Skarns), Industrial Minerals, Hydrothermal Deposits, and Aggregate Resources. MRZs identified on the County's NR-4 map are located within the Proposed Project study area (see Table 3.14-2).

City of Barstow General Plan

The City of Barstow's 2015-2020 General Plan refers to CGS's MRZ classification maps published in Open File Report 94-04, which show the City of Barstow is within areas classified as MRZ-4. The general plan states that the only mineral resource extraction that occurs in the city is aggregate mining for the manufacture of concrete. The city is within the aggregate production and consumption zone identified by CGS as the Barstow Victorville P-C Region, which has not been designated as a mineral resource area of regional importance.

There are no mineral resource conservation areas or polices identified in the City of Barstow's general plan. There are two categories of Open Space Land Use listed in the Land Use Element that provide for mineral resource extraction: Resource Conservation Open Space (ROS) and Open Space/Resource Conservation (IOS).

3.14.3. Environmental Impacts of the Proposed Project

3.14.3.1. Impact Analysis Approach

The impact analysis in this section is based on assessment of potential direct and indirect conflicts the Proposed Project would have with designated mineral resource areas and active mineral resource recovery sites. Potential conflicts would include preventing or substantially impairing existing or future mineral resource recovery. There are no specific metrics for analyzing potential impacts on mineral resource areas or recovery sites; therefore, impacts are discussed qualitatively.

SCE did not propose Applicant Proposed Measures (APMs) related to mineral resources, and no APMs relevant to other issue areas are addressed in this section.

3.14.3.2. CEQA Impact Significance Criteria

The significance criteria listed below are based on the Environmental Checklist form in Appendix G of the CEQA Guidelines. An impact on mineral resources would be considered significant, and mitigation would be required, if construction or operations and maintenance of the Project would:

- **MR-1:** 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.
- **MR-2:** 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.

3.14.3.3. Impacts and Mitigation Measures

The Cal City Options defined in Section 2.1.1 and illustrated in Figure 2-2 would have impacts no different from those defined for Impacts MR-1 and MR-2, because the extent of ground disturbance required for the Proposed Project would be the same as that required for any of the Cal City Options. No effect on mineral resources would occur.

Impact MR-1: Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.

The analysis presented in Impact MR-1 focuses on potential impacts to areas where the Federal and state government have identified known and inferred mineral resources that would be of value to the region and the residents of the state. Such areas, including federally-classified High Potential Mineral Areas and State-classified MRZs, are located in proximity to all four segments of the Proposed Project (refer to Section 3.14.1.2). Potential impacts related to mineral resource recovery sites are addressed separately under Impact MR-2.

Construction

LESS THAN SIGNIFICANT. Construction activities involved with rebuilding and modifying existing subtransmission lines including excavation where new and replacement subtransmission structures would be located. Approximately 69 new and replacement structures would be installed in Segments 1 and 2 that are within federally-classified High Potential Mineral Areas. New and replacement structures would be installed within State-classified MRZs in project Segments 2, 3S, and 3N.

Excavation for the subtransmission structures has the potential to disturb valuable mineral deposits, if present at the precise structure location, to a depth of up to approximately 30 feet with a diameter up to 8 feet (generally less). Any disturbance that may occur would be minor in comparison to the mapped areas containing mineral resources. Construction of the Project would not result in the loss of availability of a known or inferred mineral resource because very limited areas of the federally-classified High Potential Mineral Areas and State-classified MRZs would be impacted, and the Project would not prevent mineral resource recovery that may occur in the future. Impacts would be less than significant.

Operations and Maintenance

LESS THAN SIGNIFICANT. The Proposed Project would involve removing and rebuilding existing subtransmission lines in Segments 1 and 2 and modifying existing subtransmission lines in Segments 3N and 3S. In Segment 1, a new line would be installed parallel to the existing line, and the existing line would be removed. A new telecommunication line would also be installed southeast of Independence along Mazourka Canyon Road. In Segment 2, the existing line would be rebuilt with new structures and conductor. In Segments 3N and 3S, conductor for the existing line would be replaced and the existing structures would be retained, except where structure replacement is necessary to replace the conductor. As stated under construction above, known and inferred mineral resources are located in proximity to all segments of the Proposed Project (refer to Section 3.14.1.2).

The existing infrastructure has been in place for more than 60 years (SCE, 2020). SCE is currently conducting operations and maintenance activities for the existing infrastructure, including inspections, along the subtransmission lines that would be rebuilt or modified. Mineral recovery activities have and continue to occur in close proximity to the existing subtransmission lines. The rebuilt subtransmission structures would replace the existing structures in close proximity to the existing line and would not result in loss of access to a mineral resource extraction area. Operations and maintenance of the rebuilt and modified subtransmission lines would not result in the loss of availability of mineral resources. Mineral resources that may be present would remain available for future recovery at the end of the Proposed Project life. Impacts would be less than significant.

Impact MR-2: 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 analysis presented in Impact MR-2 focuses on sites where mineral resource recovery occurs, as opposed to areas where mineral resources are located which is addressed under Impact MR-1. No specific

mineral resource recovery sites are delineated in a general plan, in a specific plan, or in any other land use plan prepared by Inyo County, Kern County, San Bernardino County, or the City of Barstow. Land use policies for Kern County (Policy 25 and Measure K) and for San Bernardino County (Policy NR-6.3) describe protection of existing mineral resource recovery sites through mapping and zoning districts to prevent incompatible uses; however, these policies are not inclusive of all active mineral resource recovery sites in the Proposed Project vicinity that may be considered important to the supply of mineral resources; therefore, the analysis in this section evaluates if the Proposed Project would impact existing operations or potential future expansion of major mining operations located near the Proposed Project (described in Section 3.14.1.2) that are not necessarily identified by name in local plans. Major mining operations near project areas (within approximately 1,000 feet) include Red Hill Quarry (Segment 1), and the Rand Mining Complex (Segment 2). The Owens Lake Trona Mine (Segment 1) and the Barstow Plant (Segment 3S) are located more than 1,000 feet away. Potential impacts to the mining operations near the Proposed Project are analyzed below.

The Proposed Project crosses or is within 1 mile of active minor mineral recovery sites, including approximately 377 mining claims, 22 aggregate pits, and 1 gas well (described in Section 3.14.1.2). These features are not analyzed in detail because they are not likely to be considered important to the supply of mineral resources because the mineral recovery activities are generally minor and not of major industrial scale or duration; the sites do not include major infrastructure for mineral resource recovery; and/or the sites include aggregate materials that could be obtained from adjacent surrounding areas. Impacts from both construction and operations and maintenance on minor mineral recovery sites (i.e., active mining claims and aggregate pits) would be less than significant.

Construction

LESS THAN SIGNIFICANT WITH MITIGATION. Construction of the Proposed Project has the potential to temporarily interfere with existing mining operations where staging areas, structure work areas, and access roads would be located within or adjacent to active mining areas and associated facilities. Detailed maps are presented in Appendix A and Material Yard maps are shown in Figure 2-6a through Figure 2-6f (Material Yards).

Structure work areas and access roads would be within potentially active areas of Red Hill Quarry and the Rand Mining Complex, as visible through recent aerial imagery (2018). Construction of the Proposed Project could result in temporary impacts on existing mining operations due to potential conflicts with hauling of materials during construction over a mining access road at these facilities but would not result in the loss of availability of any mineral resources. Construction conflicts with material hauling for the ongoing mining operations at these facilities could result in temporary, but significant impacts on their mineral recovery function during conductor stringing or equipment travel on access roads. Mitigation Measure MR-2a (Coordinate with mining facility management) requires pre-construction coordination with mining operators to reduce the potential for project interference with mining operations to a less-than-significant level. Impacts would be less than significant with implementation of this measure.

Mitigation Measure for Impact MR-2

MR-2a **Coordinate with mining facility management.** At least 30 days prior to construction within active mining areas (i.e., mining property or lease boundaries), including the Red Hill Quarry and Rand Mining Complex, SCE shall coordinate with mining facility management regarding the timing and locations of construction activities for the Project, and shall submit documentation of coordination to the CPUC. Maps of the project work areas and access roads within the facility shall be provided to the CPUC and mine operators for notification purposes and to minimize conflicts with the active mining operations. The goal of the coordination will be to minimize the potential for interference on material haul routes at the time of construction and seek feasible opportunities to plan work activities to limit disruptions and ensure safety.

Operations and Maintenance

LESS THAN SIGNIFICANT. As described under Impact MR-1, the Proposed Project would involve rebuilding existing subtransmission lines in Segments 1 and 2 and modifying existing subtransmission lines in Segments 3N and 3S. The existing project infrastructure has been in place for more than 60 years (SCE, 2020). SCE is currently conducting operation and maintenance activities for the existing infrastructure, including inspections, along the subtransmission lines that would be rebuilt or modified by the Proposed Project. Mineral recovery activities have and continue to occur in proximity to the existing subtransmission lines, such as at Red Hill Quarry and the Rand Mining Complex. Approximately 1.7 miles of the Proposed Project in Segment 1 is within or adjacent to Red Hill Quarry. Approximately 3.2 miles of the Proposed Project are within or adjacent to the Rand Mining Complex. The Proposed Project would involve changes to the location of the existing subtransmission line structures that could impede access or potential future expansion of mining operations where new structures would be installed; however, any impacts on access or potential expansion from new structures would be minor and the impact would be offset by the removal of the adjacent similar existing subtransmission structures. The rebuilt and modified subtransmission lines would, therefore, not prevent mineral resource recovery or future expansion of mining areas beyond baseline conditions. Permanent impacts on mining operations would not be significant. Operations and maintenance of the Proposed Project would not result in the loss of availability of important mineral resource recovery sites. Impacts would be less than significant.

3.14.4. Mitigation Monitoring, Compliance, and Reporting

Table 3.14-4 presents the mitigation monitoring, compliance, and reporting information for mineral resources.

Table 3.14-4. Mitigation Monitoring Program – Mineral Resources

Mitigation Component	Text or Description
Mitigation Measure MR-2a	**Coordinate with mining facility management.**
Location	Where Project construction could affect active mining areas, including the Red Hill Quarry (Segment 1) and Rand Mining Complex (Segment 2)
Monitoring / Reporting Action	Review coordination documentation and maps
Effectiveness Criteria	Construction activities are coordinated with active mining to minimize conflict
Responsible Agency	CPUC
Timing	30 days before construction (for coordination) and during construction to ensure

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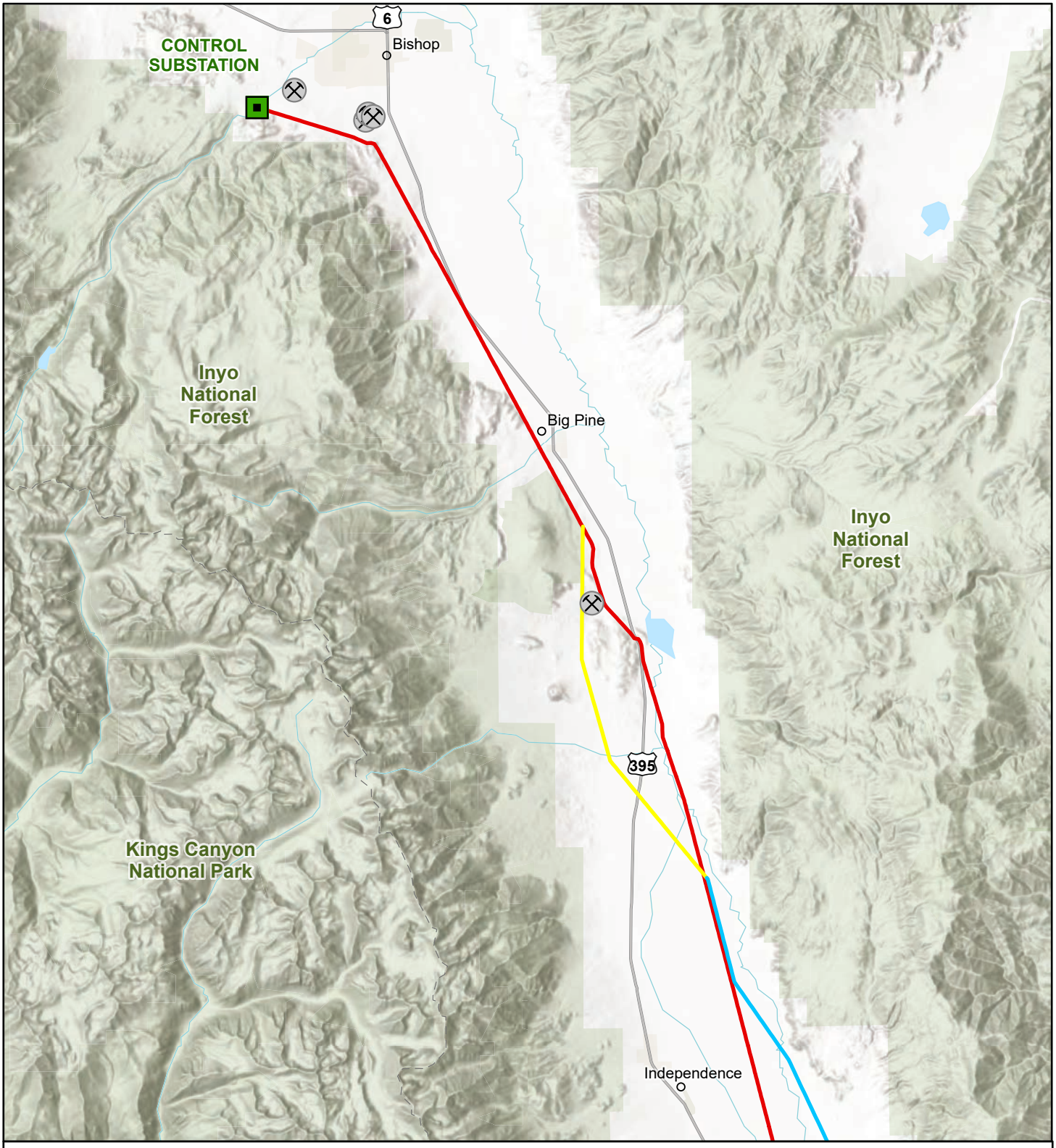

Source: Aspen, 2024; BLM, 2024; Esri, 2024; SCE, 2024.

Figure 3.14-1a

Active Mineral Resource Recovery Sites in Project Vicinity Segment 1 North

Ivanpah-Control Proposed Project Segments
- Segment 1: Control-Haiwee-Inyokern

Ivanpah-Control Project Alternatives
- Crater Mountain Realignment Alternative
- Manzanar Realignment Alternative

- Substation

Active Mines
- Aggregate Mine/Pit

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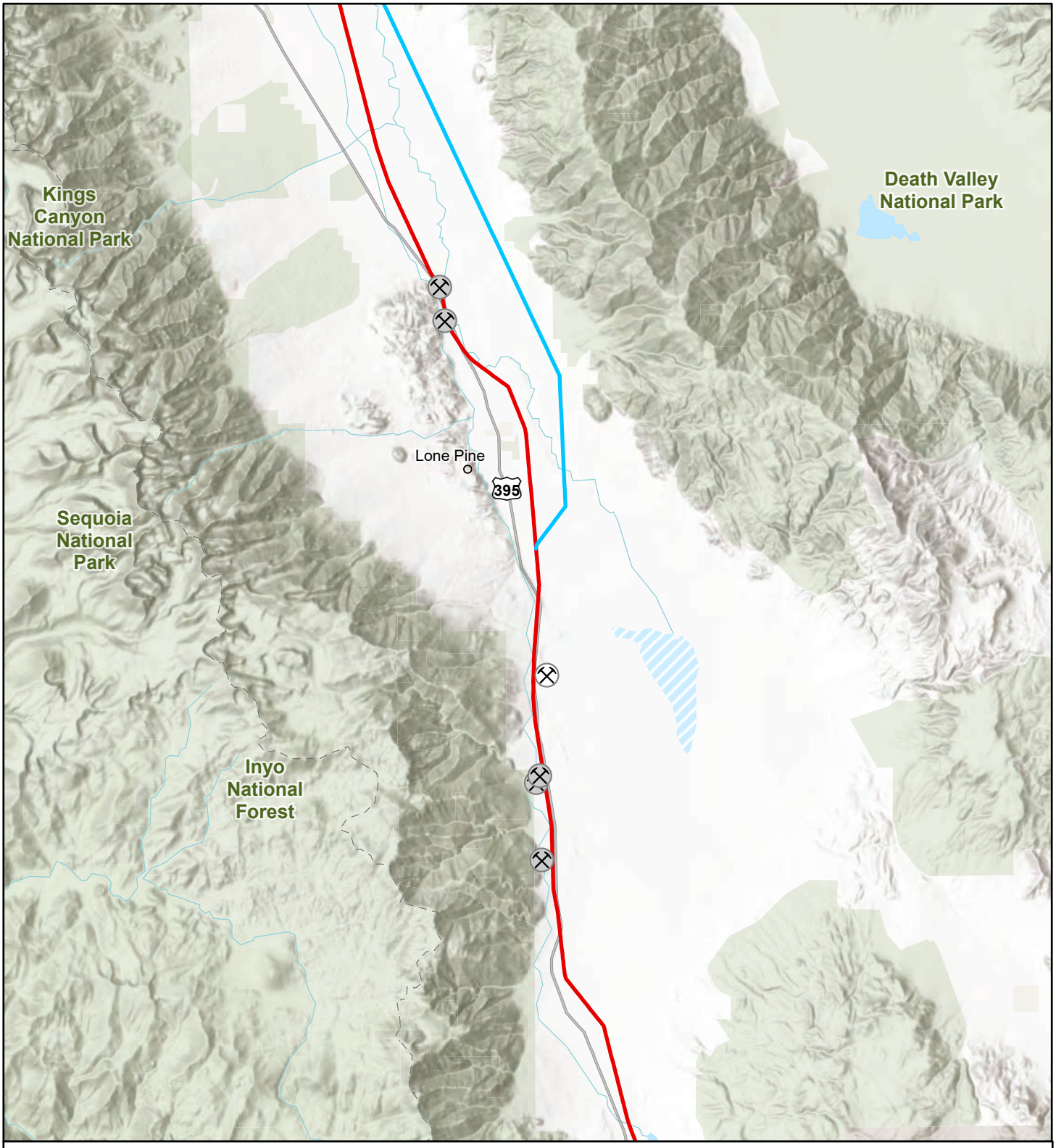
N 0 5 miles



Source: Aspen, 2024; BLM, 2024; Esri, 2024; SCE, 2024.

Figure 3.14-1b

Active Mineral Resource Recovery Sites in Project Vicinity Segment 1 Central

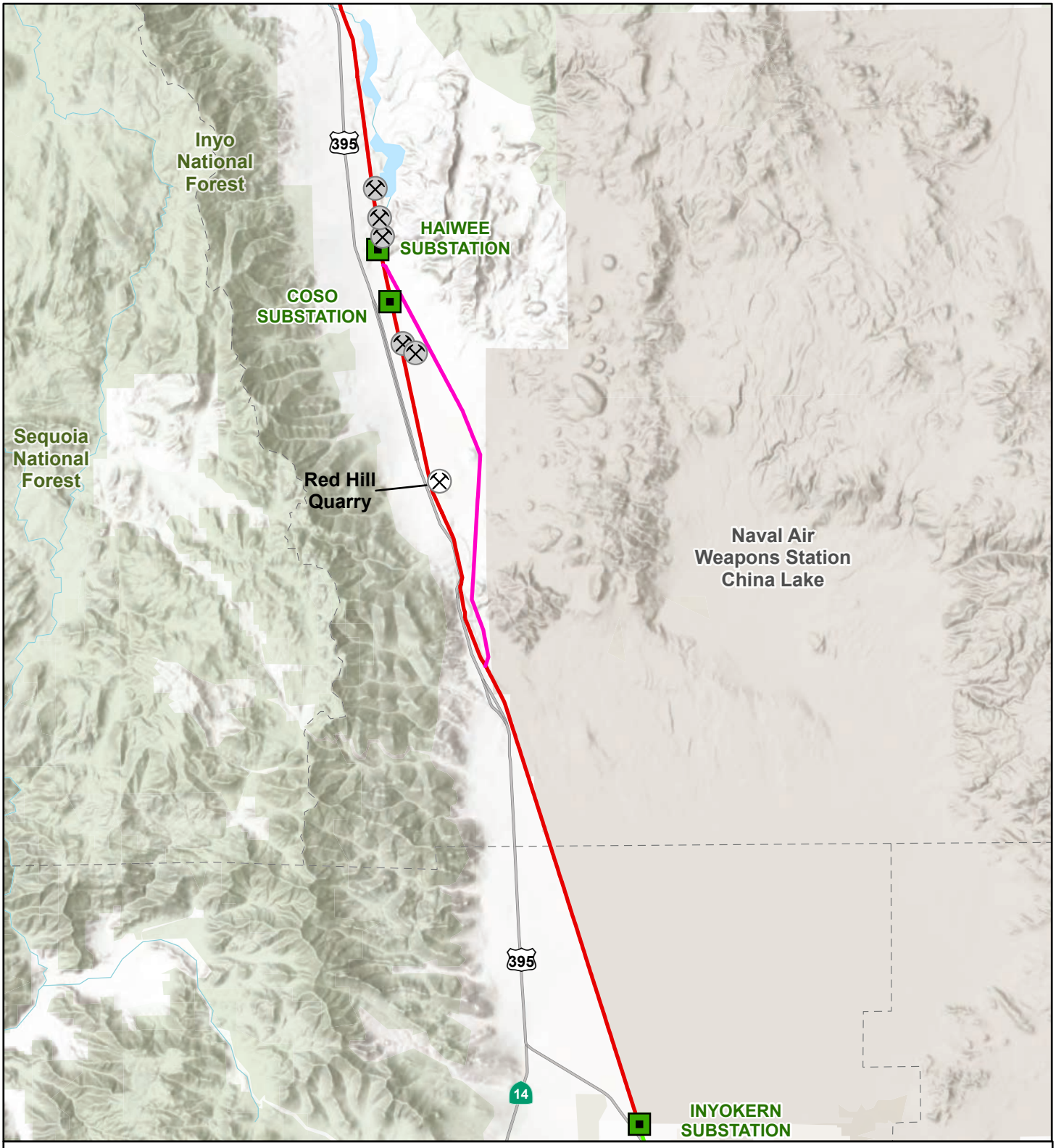
Ivanpah-Control Proposed Project Segments
- Segment 1: Control-Haiwee-Inyokern

Ivanpah-Control Project Alternatives
- Manzanar Realignment Alternative

Active Mines
- Aggregate Mine/Pit
- Major Mining Operation

1:316,800

N 0 5 miles



Source: Aspen, 2024; BLM, 2024; Esri, 2024; SCE, 2024.

Figure 3.14-1c

Active Mineral Resource Recovery Sites in Project Vicinity Segment 1 South

Ivanpah-Control Proposed Project Segments
- Segment 1: Control-Haiwee-Inyokern
- Segment 2: Inyokern-Kramer

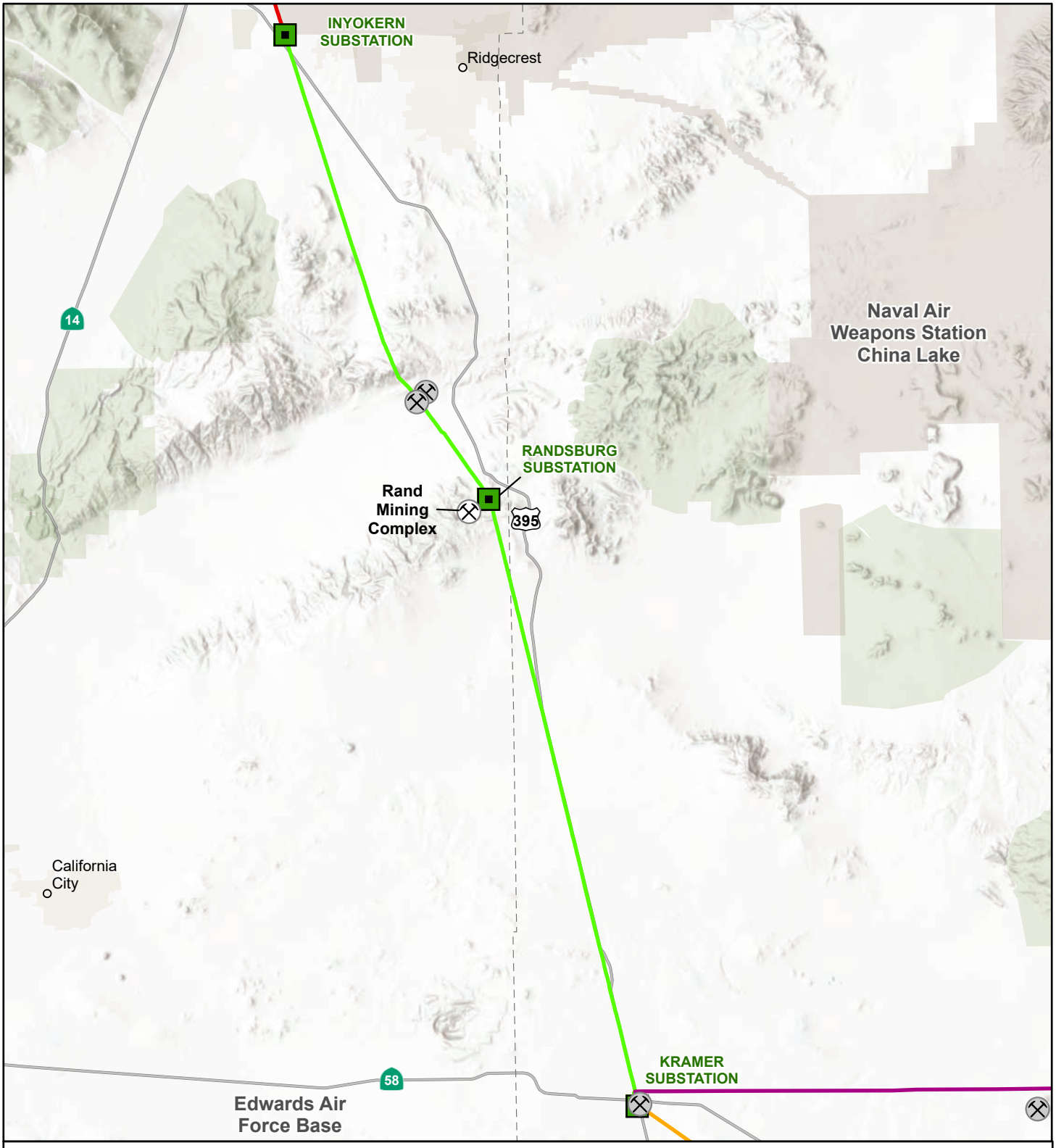
Ivanpah-Control Project Alternatives
- Fossil Falls Realignment Alternative

- Substation

Active Mines
- Aggregate Mine/Pit
- Major Mining Operation

1:316,800

N 0 5 miles



Source: Aspen, 2024; BLM, 2024; Esri, 2024; SCE, 2024.

Figure 3.14-1d

Active Mineral Resource Recovery Sites in Project Vicinity Segment 2

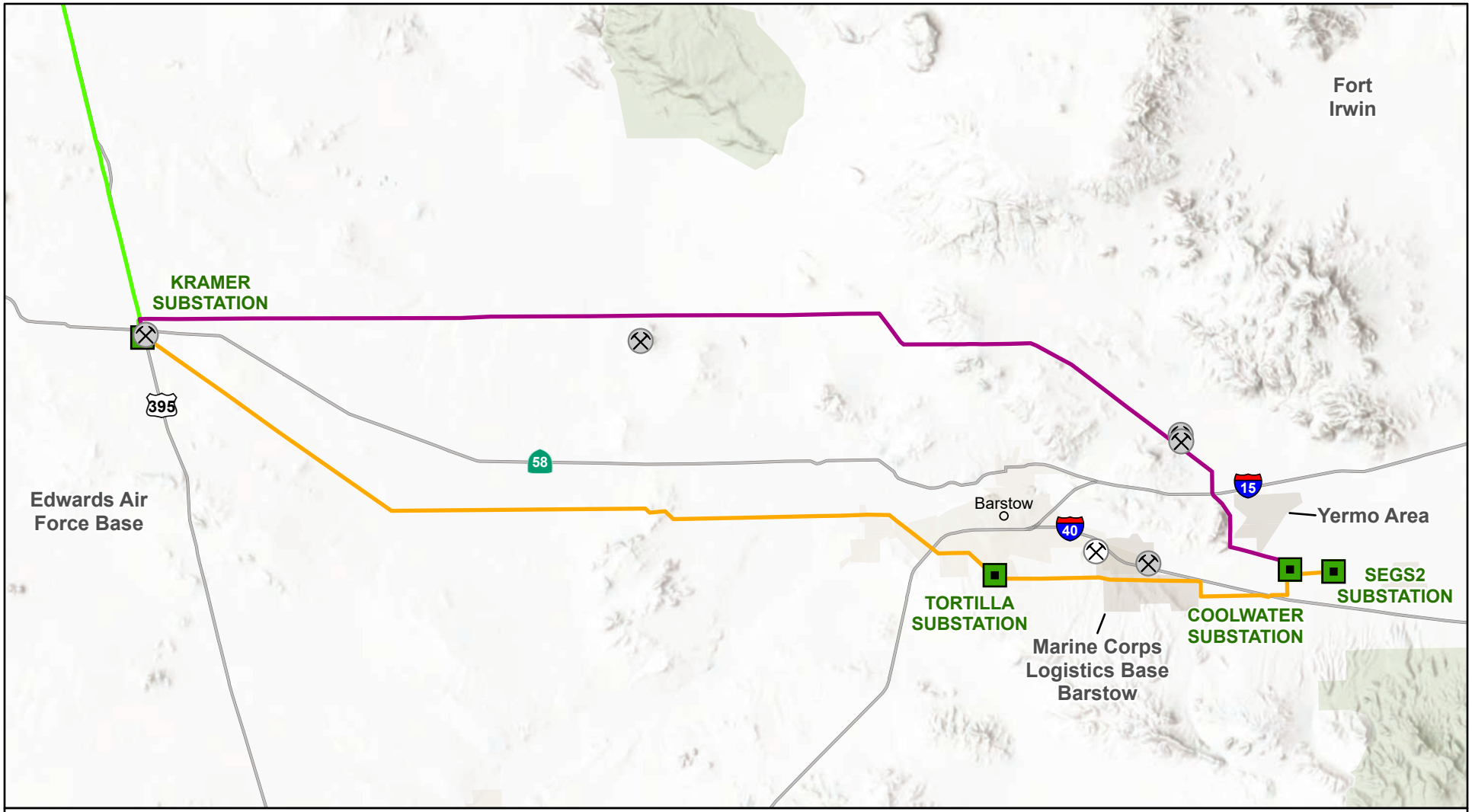
Ivanpah-Control Proposed Project Segments
- Segment 1: Control-Haiwee-Inyokern
- Segment 2: Inyokern-Kramer
- Segment 3N: Kramer-Coolwater
- Segment 3S: Kramer-Tortilla-Coolwater

Substation

Active Mines
- Aggregate Mine/Pit
- Major Mining Operation

1:375,000

N 0 5 miles



Source: Aspen, 2024; BLM, 2024; Esri, 2024; SCE, 2024.

Figure 3.14-1e

Active Mineral Resource Recovery Sites in Project Vicinity Segments 3N and 3S

3.15. Noise

This section describes existing noise environmental conditions and anticipated impacts that would result from the Proposed Project. This section addresses noise concepts, existing noise levels, applicable regulations, environmental impacts, and mitigation measures to reduce or avoid significant effects if applicable.

The environmental setting for Noise is presented in Section 3.15.1 and relevant regulations and standards are summarized in Section 3.15.2. Section 3.15.3 describes the impacts on the environment associated with implementation of the Proposed Project. Where applicable, these impact discussions introduce mitigation measures that would reduce or avoid significant adverse environmental impacts. Section 3.15.4 presents the mitigation monitoring, compliance, and reporting information, and Section 3.15.5 lists references cited in this section. Chapter 4 describes the environmental impacts of the alternatives to the Proposed Project. Cumulative impacts for all disciplines are considered in Chapter 5.

There were no comments received during the scoping period that addressed noise-related impacts.

3.15.1. Environmental Setting

3.15.1.1. Regional Setting

The Proposed Project is located in unincorporated Inyo County, Kern County, and San Bernardino County, and in the City of Barstow. Land uses near the Proposed Project area are primarily undeveloped open space with scattered residential uses. Ambient noise levels with the Proposed Project vicinity are influenced primarily by vehicular and air traffic, the surrounding land uses, and existing SCE facilities including transformers within substations.

The environmental setting for noise is based on a review of local, State, and federal regulations, policies, and ordinances, and information gathered by the applicant, as well as other sources, including:

- United States (U.S.) Environmental Protection Agency (EPA)
- California Department of Transportation (Caltrans)
- Plans, policies, and ordinances adopted by local jurisdictions, and
- Other information found in the Proponent's Environmental Assessment (PEA)

Local land uses and the sensitivity of those uses to noise are discussed, and existing laws and regulations relevant to noise control are described below.

3.15.1.2. Environmental Setting by Segment

Community Noise Fundamentals

A measurement scale that simulates human perception is used to describe environmental noise and to assess project impacts on areas that are sensitive to community noise. The A-weighted scale of frequency sensitivity accounts for the sensitivity of the human ear, which is less sensitive to low frequencies, and correlates well with human perceptions of the annoying aspects of noise. The A-weighted decibel scale (dBA) is cited in most noise criteria. Decibels (dB) are logarithmic units that can be used to conveniently compare wide ranges of sound intensities.

Community noise levels can be highly variable from day to day as well as between day and night. For simplicity, sound levels are usually best represented by an equivalent level over a given time period (Leq) or by an average level occurring over a 24-hour day-night period (Ldn). The Leq, or equivalent sound level, is a single value (in dBA) for any desired duration, which includes all of the time-varying sound energy in the measurement period, usually one hour. The Ldn, or day-night average sound level, is equal to the 24-hour A-weighted equivalent sound level with a 10-decibel penalty applied to nighttime sounds occurring between 10:00 p.m. and 7:00 a.m.

Community Noise Equivalent Level (CNEL) is another metric that is the average equivalent A-weighted sound level during a 24-hour day, obtained after adding 5 dBA to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and adding 10 dBA to sound levels in the night from 10:00 p.m. to 7:00 a.m. To easily estimate the day-night level caused by any noise source emitting noise steadily and continuously over 24 hours, the Ldn is 6.4 dBA higher than the source's Leq. For example, if the expected continuous noise level from equipment is 50.0 dBA Leq for every hour, the day-night noise level would be 56.4 dBA Ldn.

Community noise levels usually are closely related to the intensity of human activity. Noise levels generally are considered low when below 45 dBA, moderate in the 45 to 60 dBA range, and high above 60 dBA. In wilderness areas, the Ldn noise levels can be below 35 dBA. In small towns or lightly used residential areas, the Ldn is more likely to be approximately 50 to 60 dBA. Levels around 75 dBA are more common in busy urban areas, and levels up to 85 dBA occur near major freeways and airports. Although people often accept the higher levels associated with very noisy urban residential and residential-commercial zones, they nevertheless are considered to be adverse to public health.

Surrounding land uses dictate what noise levels would be considered acceptable or unacceptable. Noise levels in rural or suburban areas are expected to be lower than what would be expected for commercial or industrial zones. Nighttime ambient noise levels in urban environment are about 7 decibels lower than the corresponding daytime noise levels. In rural areas away from roads and other human activity, the day-to-night difference is noise can be considerably less. Areas with full-time human occupation and residency are often considered incompatible with substantial nighttime noise because of the likelihood of disrupting sleep. Noise levels above 45 dBA at night can result in the onset of sleep interference. At 70 dBA, sleep interference effects become considerable (U.S. EPA, 1974). Table 3.15-1 shows typical sound levels of various environmental noise sources.

Table 3.15-1. Typical Noise Levels in the Environment

Noise Source and Distance	A-Weighted Sound Level (dBA)	Subjective Impression
Civil defense siren (100 ft.)	**130**	Pain threshold
Jet takeoff (200 ft.)	**120**	
Rock music concert (50 ft.)	**110**	
Pile driver (50 ft.)	**100**	Very loud
Ambulance siren (100 ft.)	**90**	
Diesel locomotive (25 ft.)	**85**	Loud
Pneumatic drill (50 ft.)	**80**	
Freeway (100 ft.)	**70**	Moderately loud
Vacuum cleaner (10 ft.)	**60**	
Light traffic (100 ft.)	**50**	
Large transformer (200 ft.)	**40**	Quiet
Soft whisper (5 ft.)	**30**	Threshold of hearing

Existing Noise Conditions

Conditions in the Proposed Project area are primarily influenced by noise from airplanes and vehicle traffic, the surrounding residential environment, and existing SCE facilities. The majority of the Proposed Project area is located in open wilderness and rural residential areas. According to the EPA, outdoor noise levels are generally near 35 dBA Ldn in wilderness areas and near 40 dBA Ldn in rural residential areas (U.S. EPA, 1978). Heavy traffic at a distance of 300 feet generates noise near 60 dBA (Caltrans, 1998; 2009). Based on these levels, existing noise levels in the vicinity of the Proposed Project are estimated to range from approximately 35 dBA in areas of open wilderness to 40 dBA in most communities along the

proposed alignment. Noise levels may reach up to 60 dBA in more densely populated areas where heavily traveled highways exist, such as the City of Barstow.

Where subtransmission lines exist, the noise from corona discharge (electrical discharge caused by the ionization of a fluid surrounding a conductor that is electrically charged) and similar associated electrical phenomena can occasionally be heard as a crackling or hissing sound. Substations also generate audible noise in the immediate vicinity. Transformers are generally the major sources of audible noise within a substation. Transformer noise sources are core (e.g., non-load) noise, load noise (i.e., when electrical load is connected to a secondary winding in a transformer), cooling pump noise, and fan noise. The predominant noise from a transformer is a hum that emanates from the core of the transformer that is perceptible by the human ear.

Table 3.15-2 shows airports, heliports, and airstrips within 2 miles of the Proposed Project. Three airports are located within 2 miles from the Proposed Project (Table 3.15-2), and noise from air traffic is expected to affect the project area. In addition, the Proposed Project is adjacent to the Naval Air Weapon Station China Lake within Segment 1 and portions of the Proposed Project in Segments 1, 2, and 3N are located within military air space where military training flights frequently occur.

Table 3.15-2. Airports, Heliports, and Airstrips

Facility	Distance (mile/direction)
Lone Pine Airport	0.9/West to Segment 1
Inyokern Airport	1.75/West to Segment 1 1.75/Northwest to Segment 2
Barstow-Daggett Airport	2/ North to Segment 3
SCE Ridgecrest Service Center Heliport	6.1/West to Segment 2 (Within Material Yard ICKI SA 1-3 East Upjohn Ave)

Noise-Sensitive Receptors

Noise-sensitive receptors are land uses where an excessive amount of noise would interfere with normal activities. Noise sensitive land uses are defined by the State of California Office of Noise Control to include schools, hospitals, rest homes, long-term care and mental care facilities. Many jurisdictions also consider residential uses as noise sensitive because families and individuals expect to use time in the home for rest and relaxation, and noise can interfere with those activities. The definition of a sensitive receptor varies by jurisdiction.

Figure 3.15-1a through Figure 3.15-3c (Noise-Sensitive Receptors) present examples of the noise-sensitive receptors located within 1,000 feet of the Proposed Project. A distance of 1,000 feet was used as the basis for analysis as most construction noise dissipates to background levels at a distance greater than 1,000 feet. The nearest sensitive receptor is a residence in Segment 1 located approximately 35 feet from the Proposed Project. Residences are also located within 50 feet of the Proposed Project in Segment 3N. Each segment's receptors are described in the following sections.

Segment 1: Bishop to Inyokern

Ambient Noise Levels

Ambient noise levels within Segment 1 vary depending on the surrounding land use and proximity to US 395. Areas of undeveloped open space likely experience noise levels between 35 and 45 dBA Ldn. Locations near developed residential areas, such as the communities of Independence, Lone Pine, and Inyokern, are likely to experience noise levels closer to 50 dBA Ldn due to influences from vehicles and other residential noises. Lone Pine Airport is located less than 1 mile from Segment 1 work areas (i.e., areas where construction activities would occur for Segment 1) and experiences a low volume of air traffic

(AirNav, 2020). Inyokern Airport is located within 2 miles west of Segment 1. Segment 1 is approximately 1 mile outside the 60 CNEL noise contour of the Inyokern Airport (Wieland Acoustics, 2011). Due to the distance from nearby airports. air traffic noise is likely to have a relatively small or infrequent influence on average ambient noise levels in the project vicinity, although military flight operations are routine along Segment 1.

Segment 1 Noise-Sensitive Receptors

Low to medium-density housing surrounds Segment 1 primarily located in the communities of Wilkerson, Big Pine, Cartago, Bradys, Indian Wells, and Inyokern. No other sensitive noise receptors such as schools, religious institutions, hospitals, libraries, or nursing homes occur within 1,000 feet of Segment 1 work areas. There are isolated residences in several areas along Segment 1, including residences that are located immediately adjacent to Project work areas. Groups of residences are located along Segment 1 in the following areas:

- Just west of Sunland Drive, about 3 miles south of Bishop (see Figure 3.15-1a, Noise-Sensitive Receptors Sundland Drive South of Bishop)
- South of and within the community of Wilkerson, about 5.5 miles south of Bishop (see Figure 3.15-1b, Noise-Sensitive Receptors Community of Wilkerson)
- Just over 1 mile northwest of the community of Big Pine (see Figure 3.15-1c, Noise-Sensitive Receptors Northwest of Big Pine)
- At the southwest corner of the community of Big Pine (see Figure 3.15-1d, Noise-Sensitive Receptors Southwest of Big Pine)
- West of the area called Fish Springs, about 6.5 miles south of Big Pine (see Figure 3.15-1e, Noise-Sensitive Receptors Fish Springs)
- East and southeast of the town of Cartago (see Figure 3.15-1f, Noise-Sensitive Receptors East of Cartago) and Figure 3.15-1g (Noise-Sensitive Receptors South of Cartago)
- In Kern County, the southernmost approximately 10 miles of Segment 1 runs along the eastern edge of residential areas except where active agricultural activities are located (see Figure 3.15-1h, Noise-Sensitive Receptors North of Inyokern).

Segment 2: Inyokern to Kramer Junction

Ambient Noise Levels

Ambient noise levels within Segment 2 are expected to range from near 35 dBA Ldn in undeveloped open space to 45 dBA in residential areas of Inyokern and Randsburg. Daytime ambient noise levels recorded in the vicinity of Inyokern Substation ranged from 40 to 44 dBA (BLM and CEC, 2010). Inyokern Airport is located within 2 miles west of Segment 2; however, Segment 2 work areas are approximately 1.5 miles outside the 60 CNEL noise contour of the Inyokern Airport (Wieland Acoustics, 2011). Due to the distance from Inyokern Airport, air traffic noise is likely to have a relatively small influence on average ambient noise levels in the project vicinity.

Segment 2 Noise-Sensitive Receptors

Low to medium-density housing surrounds Segment 2 in the communities of Inyokern and Randsburg. Numerous residences, churches and a library are located within 1,000 feet of Segment 2. The following receptors in the community of Randsburg are located within 1,000 feet of Project work areas:

- Randsburg United Methodist Church (about 600 feet from work area Pull Site 121165)
- Church of St. Barbara (about 280 feet from Pull Site 121165)
- Randsburg Library (about 600 feet from Pull Site 121165)

In addition, numerous residences exist within 1,000 feet of Segment 2 work areas, primarily in the following locations

- Within two miles south of the Inyokern Substation (on Highway 178; see Figure 3.15-2a, Noise-Sensitive Receptors South of Inyokern Substation)
- Within the community of Randsburg where the existing subtransmission line and Proposed Project would pass along the eastern edge of the residential area (see Figure 3.15-2b, Noise-Sensitive Receptors Randsburg)

Segment 3N: Kramer Junction to Daggett

Ambient Noise Levels

Ambient noise along Segment 3N is expected to be approximately 45 dBA Ldn due to the undeveloped and rural residential uses in the area. Daytime noise was measured at 42 dBA Leq west of Harper Lake (CEC, 2010). Land along Segment 3N is mostly undeveloped open space. Noise levels are influenced by vehicle and locomotive traffic on the eastern end of Segment 3N, near Daggett.

Segment 3N Noise-Sensitive Receptors

Segment 3N passes primarily through undeveloped BLM-administered public lands from the Kramer Substation to its crossing of Fort Irwin Road, about 5 miles northwest of the Coolwater Substation. Within the southeastern portion of this segment, the Proposed Project passes within 1,000 feet of Silver Valley High School (see Figure 3.15-3a, Noise-Sensitive Receptors Silver Valley Highschool and Dagget-Yermo Road). In addition, a one-mile-long segment passes immediately west of numerous residences along the west side of Daggett-Yermo Road in the community of Daggett, within 50 feet of some structures.

Segment 3S: Kramer Junction to Barstow to Daggett

Ambient Noise Levels

Ambient noise levels along Segment 3S reflect residential noise levels within Barstow and rural or open space noise levels outside of Barstow. Noise levels in Segment 3S are influenced by vehicle traffic on Interstate 15 (I-15) and Interstate 40 (I-40), and locomotive noise on the Burlington Northern Santa Fe (BNSF) railroad. Ambient noise measurements collected for the Barstow 2014 General Plan Revision Project recorded Leq levels up to 64.4 dBA (Vista Environmental, 2014).

Segment 3S Noise-Sensitive Receptors

Segment 3S passes through over 20 miles of undeveloped land and enters a low-density residential area south of the community of Hinkley and the Grandview area northwest of the City of Barstow.

Replacement structures are not proposed along much of the section where the Project is closest to residences in Barstow Heights, an unincorporated area of Barstow, but the entire line segment would be reconductored. Construction activities along Bonanza Road would include the following:

- There would be a replacement structure at both the east and west ends of the residential section of Bonanza Road (see Figure 3.15-3b, Noise-Sensitive Receptors Bonanza Road (Barstow Heights)
- At the west end, just west of P Street, an existing structure would be replaced with a new one within about 50 feet of an existing residential property
- At the east end of Bonanza Road, just east of H Street, a structure would be replaced about 140 feet from a residence
- Pull sites are defined at 16 locations along the one-mile residential section of Bonanza Road

In addition to residential areas, the Rimrock Villa Convalescent Hospital and Kingdom Hall of Jehovah's Witness are located at N Street and Rimrock Road, about 800 feet north of a structure where reconductoring would be completed.

There are additional residences within 1,000 feet of Project structure work areas along National Trails Highway just south of the Coolwater Substation.

3.15.2. Applicable Regulations, Policies, and Standards

3.15.2.1. Federal Regulations, Policies and Standards

U.S. Environmental Protection Agency

Regulating environmental noise is generally the responsibility of local government. The U.S. EPA has developed and published criteria for environmental noise levels with a directive to protect public health and welfare with an adequate margin of safety. This U.S. EPA criterion (Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety) was developed to be used as an acceptable guideline when no other local, county, or state standard has been established; however, the U.S. EPA criterion is not meant to substitute for agency regulations or standards in cases where states and localities have developed criteria according to their individual needs and situations.

There are no federal noise standards that directly regulate environmental noise caused by the types of sources affiliated with the Proposed Project. Federally sponsored highway projects, aviation, and transit are subject to noise analysis procedures and abatement requirements. None of these federally sponsored projects are proposed as part of the Proposed Project. The protective noise levels recommended by U.S. EPA are shown in Table 3.15-3.

Table 3.15-3. Protective Noise Levels Recommended by U.S. EPA

Effect	Maximum Level	Exterior or Interior Area
Hearing loss	70 dB Leq (24)	All areas.
Outdoor activity interference and annoyance	55 dB Ldn	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.
	55 dB Leq (24)	Outdoor areas where people spend limited amounts of time, such as schoolyards, playgrounds, etc.
Indoor activity interference and annoyance	45 dB Ldn	Indoor residential areas.
	45 dB Leq (24)	Other indoor areas with human activities such as schools, etc.

Leq (24) is the sound energy averaged over a 24-hour period
Ldn is the Leq with a 10 dB nighttime penalty
Source: U.S. EPA, 1974 (Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety, Table 1).

Occupational Safety and Health Act of 1970

The Occupational Safety and Health Act of 1970 governs worker exposure to noise levels. Title 29 of CFR Section 1910.95 limits worker exposure to noise levels of 85 dBA or lower over an 8-hour period. Additionally, this regulation also establishes maximum impulse or impact noise (e.g., blasting noise) of 140 dB peak sound pressure level.

3.15.2.2. State Regulations, Policies and Standards

There are no state regulations regarding vibration that are relevant to the Proposed Project. Caltrans provides guidance for analysis of groundborne vibration. The Proposed Project is not subject to Caltrans regulations; however, these guidelines serve as a useful tool to evaluate vibration impacts on structures

and residents. Table 3.15-4 provides the thresholds for evaluating the potential for groundborne vibration to damage structures and describes the reactions of people who are exposed to continuous vibration.

Table 3.15-4. Groundborne Vibration Impact Thresholds

Parameter	Maximum PPV (in/sec)	
	Transient Sources[1]	Continuous/Frequent Intermittent Sources[2]
Structural Damage		
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5
Human Response		
Severe	2.0	0.4
Strongly perceptible	0.9	0.10
Distinctly perceptible	0.25	0.04
Barely perceptible	0.04	0.01

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

Source: (Caltrans, 2004)

California Noise Exposure Regulations

The State of California addresses worker exposure to noise levels through the California Noise Exposure Regulations and Title 8 of the California Code of Regulations (CCR), Section 5095. These regulations limit worker exposure to noise levels of 85 dB or lower over an 8-hour period. The State has not established noise levels for non-work-related environments.

3.15.2.3. Local Regulations, Policies and Standards

Pursuant to General Order 131-E, the Project is not subject to local land use authority because the CPUC has exclusive jurisdiction over the siting, design and construction of electric power line projects, distribution lines, substations, and electric facilities constructed by public utilities subject to CPUC jurisdiction. Local ordinance policies and requirements are summarized here only where these requirements are used as the basis for impact analysis.

Inyo County Code of Ordinances

The Inyo County Code of Ordinances does not contain any noise standards or regulations.

Inyo County General Plan – Public Safety Element

The Public Safety Element of the Inyo County General Plan contains the following definition, policies and implementation measure:

- Noise Sensitive Land Uses (Receptors). Noise sensitive land uses (receptors) are defined to include residential areas, hospitals, convalescent homes and extended care facilities, schools, libraries, daycare centers, and other similar land uses as determined by the County.
- Policy NOI-1.7 Noise Controls During Construction. Contractors will be required to implement noise-reducing mitigation measures during construction when residential uses or other sensitive receptors are located within 500 feet.

- Implementation Measure 5.0: Construction activities within 500 feet of existing noise sensitive uses shall be limited to the hours of 7:00 a.m. to 7:00 p.m. Monday through Saturday. No construction shall occur on Sunday or on federal holidays without a special permit from the County for unusual circumstances.

Kern County Code of Ordinances

Title 8, Health and Safety, Chapter 8.36 – Noise Control, details prohibitions on the generation of construction noise in unincorporated Kern County:

> Section 8.36.020 – Prohibited sounds.
>
> It is unlawful for any person to do, or cause to be done, any of the following acts within the unincorporated areas of the County:
>
> H. To create noise from construction, between the hours of nine (9:00) p.m. and six (6:00) a.m. on weekdays and nine (9:00) p.m. and eight (8:00) a.m. on weekends, which is audible to a person with average hearing faculties or capacity at a distance of one hundred fifty (150) feet from the construction site, if the construction site is within one thousand (1,000) feet of an occupied residential dwelling except as provided below:
>
> 1. The development services agency director or his designated representative may for good cause exempt some construction work for a limited time.
> 2. Emergency work is exempt from this section.

Kern County General Plan – Noise Element

The primary purpose of the Noise Element is to: 1) establish reasonable standards for maximum desired noise levels in Kern County; and 2) develop an implementation program which could effectively deal with the noise problem. The Kern County General Plan includes the following implementation measure for managing noise:

- 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.

The Noise Element does not establish standards for construction activities. The Noise Element identifies the following as noise sensitive land uses: residential areas, schools, convalescent and acute care hospitals, parks and recreational areas, and churches.

San Bernardino County General Plan – Noise Element

The Noise Element in the County of San Bernardino 2007 General Plan contains specific goals and policies focused on reducing noise to a level consistent with health and quality of life goals. The following policies related to noise are relevant to the Proposed Project:

> GOAL N 1. The County will abate and avoid excessive noise exposures through noise mitigation measures incorporated into the design of new noise-generating and new noise-sensitive land uses, while protecting areas within the County where the present noise environment is within acceptable limits.
>
> POLICY N 1.5. Limit truck traffic in residential and commercial areas to designated truck routes; limit construction, delivery, and through-truck traffic to designated routes; and distribute maps of approved truck routes to County traffic officers.
>
> POLICY N 1.6. Enforce the hourly noise-level performance standards for stationary and other locally regulated sources, such as industrial, recreational, and construction activities as well as mechanical and electrical equipment.

San Bernardino County Development Code

Section 83.01.080 (Noise) of San Bernardino County Development Code establishes standards concerning acceptable noise levels for both noise-sensitive land uses and for noise-generating land uses. Standards include definitions for noise measurement, noise impacted areas, and noise standards for stationary noise sources and adjacent mobile noise sources, and exempt noise. Under the standard of Section 83.01.080, the noise standards for stationary noise sources are shown in Table 3.15-5. The noise standards for adjacent mobile noise sources are shown in Table 3.15-6.

Table 3.15-5. San Bernardino County Noise Standards for Stationary Noise Sources

Affected Land Uses (Receiving Noise)	7:00 a.m. – 10:00 p.m. Leq	10:00 p.m. – 7:00 a.m. Leq
Residential	55 dBA	45 dBA
Professional Services	55 dBA	55 dBA
Other Commercial	60 dBA	60 dBA
Industrial	70 dBA	70 dBA

Source: (San Bernardino County, 2019)

Table 3.15-6. San Bernardino County Noise Standards for Adjacent Mobile Noise Sources

Categories	Uses	Interior[1] Ldn (or CNEL) dBA	Exterior[2] Ldn (or CNEL) dBA
Residential	Single and multi-family, duplex, mobile homes	45	60[3]
Commercial	Hotel, motel, transient housing	45	60[3]
	Commercial retail, bank, restaurant	50	-
	Office building, research and development, professional offices	45	65
	Amphitheater, concert hall, auditorium, movie theater	45	-
Institutional/ Public	Hospital, nursing home, school classroom, religious institution, library	45	65
Open Space	Park	-	65

1. The indoor environment shall exclude bathrooms, kitchens, toilets, closets and corridors.
2. The outdoor environment shall be limited to hospital/office building patios, hotel and motel recreation areas, mobile home parks, multi-family private patios or balconies, park picnic areas, private yard of single-family dwellings, and school playground.
3. An exterior noise level of up to 65 dBA (or CNEL) shall be allowed provided exterior noise levels have been substantially mitigated through a reasonable application of the best available noise reduction technology, and interior noise exposure does not exceed 45 dBA (or CNEL) with windows and doors closed. Requiring that windows and doors remain closed to achieve an acceptable interior noise level shall necessitate the use of air conditioning or mechanical ventilation.

Source: (San Bernardino County, 2019)

The following sources of noise are exempt from the regulations of Section 83.01.080:

- Motor vehicles not under the control of the commercial or industrial use.
- Emergency equipment, vehicles, and devices.
- Temporary construction, maintenance, repair, or demolition activities between 7:00 a.m. and 7:00 p.m., except Sundays and Federal holidays.

Section 83.01.090 (Vibration) defines vibration standard, vibration measurement, and exempt vibration sources. The followings standard and exemption related to noise are relevant to the Proposed Project.

> (a) Vibration standard. No ground vibration shall be allowed that can be felt without the aid of instruments at or beyond the lot line, nor shall any vibration be allowed which produces a particle velocity greater than or equal to two-tenths (0.2) inches per second measured at or beyond the lot line.

(c) Exempt vibrations. The following sources of vibration shall be exempt from the regulations of this Section.

(2) Temporary construction, maintenance, repair, or demolition activities between 7:00 a.m. and 7:00 p.m., except Sundays and Federal holidays.

City of Barstow General Plan – Noise Element

The City of Barstow's Noise Element establishes policies and programs designed to reduce noise levels in the long term. The goals and policies and strategies contained in the General Plan Noise Element are intended to ensure that the interior and exterior noise standards established by the State of California are adhered to in considering proposals for new residential, commercial and industrial development. The interior and exterior noise standards for the City of Barstow are shown in Table 3.15-7.

The City of Barstow Noise Element includes the following goals, policies, and strategies that are applicable to the Proposed Project:

GOAL 2: Minimize adverse noise impacts of development anticipated under the General Plan.

POLICY 2.B: Minimize noise and ground vibration associated with project construction.

STRATEGY 2.B.1: Exempt construction activities from the operational noise standards set forth in [General Plan] Table N-1 (3.15-7) between the hours of 7:00 a.m. and 7:00 p.m. and enforce the standards outside of these hours.

STRATEGY 2.B.2: Pursuant to San Bernardino County Ordinance 87.0910 vibration levels shall be limited to 0.2 inches per second at the property line (or nearest sensitive receptor).

Table 3.15-7. City of Barstow Interior and Exterior Noise Standards

		CNEL (dBA)	
Categories	**Uses**	**Interior[1]**	**Exterior[2]**
Residential	Single-family, Duplex, Multi-family	45[3]	65
	Mobile Homes	-	65[4]
Commercial Industrial	Hotel, Motel, Transient Lodge	45	65[5]
	Commercial Retail, Bank, Restaurants	55	-
	Office Building, R & D, Professional & Government Offices	50	-
	Amphitheater, Concert Hall, Auditorium, Meeting Hall	45	-
	Gymnasium (Multipurpose)	50	-
	Sports Club	55	-
	Manufacturing, Warehousing, Wholesale, Utilities	65	-
	Movie Theaters	45	-
Institutional	Hospital, Schools, Classrooms	45	65
	Church, Library	45	-
Open Space	Parks and Outdoor Active and Passive Recreation Facilities	-	65

1. Indoor environment excluding bathrooms, toilets, closets, and corridors.
2. Outdoor environment limited to private yard of single-family residence, multi-family private patio or balcony which is served by a means of exit from inside, mobile home park, hospital patio, park's picnic area, school's playground, hotel and motel recreation area.
3. Noise level requirements with closed windows. Mechanical ventilation or other means of natural ventilation shall be provided as per Chapter 12, Section 1205 of the Uniform Building Code.
4. Exterior noise level should be such that interior noise level will not exceed 45 dBA CNEL.
5. Except those areas affected by aircraft noise.

Source: (City of Barstow, 2015)

City of Barstow Municipal Code

The City of Barstow's Municipal Code does not establish noise standards that limit construction or operation noise levels.

3.15.3. Environmental Impacts of the Proposed Project

3.15.3.1. Impact Analysis Approach

This impact analysis considers whether implementation of the Proposed Project would result in significant noise impacts. The analysis focuses on reasonably foreseeable effects of the Proposed Project as compared with applicable local noise standards and baseline conditions. The analysis uses significance criteria based on the CEQA Appendix G Guidelines. The potential direct and indirect effects of the Proposed Project are addressed; cumulative effects are addressed in Chapter 5. Effects that would result from operations and maintenance of the Proposed Project are also addressed. Applicable APMs (Table 3.15-8) are discussed in the impact analysis. Mitigation is included where necessary to avoid or reduce significant noise impacts.

Noise and vibration levels associated with construction and operation of the Proposed Project are analyzed for impacts to noise sensitive receptors. Proposed Project noise levels are predicted using combined average hourly noise levels (Leq) for construction phases. Individual equipment and combined construction phase noise levels are predicted using a national model and construction equipment database in Version 2.0 the Roadway Construction Noise Model (RCNM) from the Federal Highway Administration (FHWA). The applicant provided a list of construction equipment that are anticipated to be used during each construction phase, as shown in Chapter 2, Table 2-9. Construction noise is calculated for each phase of construction using the two loudest pieces of ground-based equipment (e.g., manlift and grader) that could be operating simultaneously within the work area. Noise level estimates consider a reference maximum noise level for each piece of equipment, a usage factor percentage (percent of time the equipment would be operating each work hour on average), and the distance to a receptor. The results are the sum of noise levels that would be experienced by typical receptors at a given distance. Construction noise levels are estimated at the nearest receptor and reference distances to predict noise attenuation for receptors located at varying distances from a work area.

Helicopter noise is calculated independent of ground-based equipment because the nature and duration of helicopter noise is substantially different from that of ground-based equipment. Helicopter noise is calculated at receptor locations using a maximum noise level at a reference distance and a standard attenuation rate of 6 dBA per doubling of distance.

SCE proposes to implement one APM pertaining to noise to ensure the Proposed Project would be constructed and operated with minimal environmental impacts in a manner consistent with applicable rules and regulations. Implementation of this APM is considered part of the Proposed Project for purposes of the evaluation of environmental impacts. Table 3.15-8 summarizes the Applicant Proposed Measure relevant to noise.

Table 3.15-8. Applicant Proposed Measures – Noise

APM	Description
APM NOI 1: Implement Best Management Practices for Construction Noise	SCE shall employ the following noise-control techniques, at a minimum, to reduce construction noise exposure at noise sensitive receptors during construction: ■ To the extent feasible, construction activities shall be confined to daytime, weekday and weekend established by the applicable local jurisdiction. 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 not less effective than those originally installed by the manufacturer.

APM	Description
	■ Construction traffic and helicopter flight shall be routed away from residences and schools, where feasible. 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.

3.15.3.2. Impact Significance Criteria

Significance Criteria

The significance criteria listed below are based on Appendix G of the CEQA Guidelines. A noise impact would be considered significant, and mitigation would be required if construction or operations and maintenance would:

- Impact N-1: 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,
- Impact N-2: Generate excessive groundborne vibration or groundborne noise levels, or
- Impact N-3: Expose people residing or working in the project area to excessive noise levels[1]

Factors to be considered in determining the significance of an adverse impact caused by an intermittent source include: (1) the resulting noise level, (2) the duration and frequency of the noise, (3) the number of people affected, and (4) the land use designation of the affected receptor sites.

3.15.3.3. Impacts and Mitigation Measures

The Cal City Options defined in Section 2.1.1 and illustrated in Figure 2-2 would have impacts no different from those defined for Impacts N-1 through N-3, because the extent of equipment use and ground disturbance required for the Proposed Project would be the same as that required for any of the Cal City Options. The activity would not affect any sensitive receptors.

Impact N-1: Expose persons to or generate a substantial temporary or permanent increase in noise levels in excess of established standards.

Construction

Summary of Construction Noise Levels

Proposed Project construction would require the use of heavy equipment, including graders, excavators, cranes, dozers, and dump trucks, which have the potential to generate excessive noise in the project vicinity. Table 3.15-9 lists the typical equipment used in subtransmission line construction and the associated noise levels at a reference distance of 50 feet from the noise source. Proposed Project construction would last for approximately 39 months with concurrent construction of multiple Proposed Project components throughout the construction period. Table 2-9 in Chapter 2 (Project Description) presents the equipment required for each phase of construction.

Noise associated with construction of the Proposed Project would temporarily increase ambient noise levels in the project vicinity. The magnitude of the increase would vary depending on the activity and distance to noise-sensitive receptors. Noise standards for construction workers is regulated by OSHA and is not subject to local standards. The construction would need to comply with OSHA and California Noise Exposure Regulations for protection of worker safety.

[1] Pursuant to CEQA Guidelines Appendix G, this is the applicable threshold when, as here, the Project is located within two miles of a public airport.

Table 3.15-9. Noise Levels Generated by Construction Equipment

Equipment	Acoustical Usage Factor (%)[1]	Lmax (dBA) at 50 feet	Leq (dBA) at 50 feet
Backhoe	40	79	74
Concrete mixer truck	40	79	75
Concrete pump truck	20	82	74
Crane, Mobile	16	81	73
Dozer	40	82	78
Excavator	40	81	77
Generator	50	81	78
Grader	40	85	81
Man lift	20	85	75
Loader	40	80	75
Paver	50	78	74
Roller	20	80	73
Scraper	40	84	80
Trucks	40	80-84	71 – 73

Note: Acoustical usage factor is the proportion of time the equipment is operating at full power during construction hours.
Source: (FHWA, 2017)

The Proposed Project would occur within unincorporated areas of Inyo, Kern, and San Bernardino counties, as well as the City of Barstow. Table 3.15-10 identifies the construction noise standards for each jurisdiction. Each jurisdiction exempts construction noise from noise level limits as long as construction occurs within the jurisdiction's allowable construction hours, as identified in Table 3.15-10.

Table 3.15-10 provides a summary of the maximum predicted construction noise levels by Proposed Project component. Table 3.15-11 provides the modeled noise levels by construction activity.

Table 3.15-10. Summary of Modeled Construction Noise Levels by Project Segment

Project Components	Nearest Sensitive Receptor Distance (feet)	Receptor Jurisdiction	Jurisdiction Construction Noise Standard	Typical Construction Noise Level at Receptors	
				Lmax (dBA)	Leq (dBA)
Segment 1	35	Inyo County	Construction noise exempt between 7:00 a.m. and 7:00 p.m. except Sundays and federal holidays.	84	77
Segment 1	200	Kern County	Construction noise exempt between 6:00 a.m. and 9:00 p.m. weekdays; 8:00 a.m. and 9:00 p.m. weekends.	72	65
Segment 2	280	Kern County	Construction noise exempt between 6:00 a.m. and 9:00 p.m. weekdays; 8:00 a.m. and 9:00 p.m. weekends.	69	62
Segment 3N	50	Unincorporated San Bernardino County	Construction noise exempt between 7:00 a.m. and 7:00 p.m. No work allowed Sundays and federal holidays.	84	77
Segment 3S	40	City of Barstow	Construction noise exempt between 7:00 a.m. and 7:00 p.m.	86	79

Table 3.15-11. Modeled Noise Levels by Construction Activity

Construction Activity	Modeled Leq (dBA) Noise Levels[1]								
	20 feet[2]	40 feet	50 feet	100 feet	200 feet	400 feet	800 feet	1,000 feet	1200 feet
Survey	74	68	66	61	55	49	43	41	39
Material Yards	84	78	76	70	64	58	52	50	48
Road Work	91	85	83	77	71	65	59	57	55
Existing Pole Removal	84	78	76	70	64	58	52	50	48
Existing Lattice Structure/TSP Removal	86	80	78	72	66	60	54	52	50
TSP/LSW Installation	87	81	79	73	67	61	55	53	51
Install/Remove Guard Structures	87	81	79	73	67	61	55	53	51
Telecommunications Infrastructure Installation	87	81	79	73	67	61	55	53	51
Restoration	91	85	83	77	71	65	59	57	55

Note:
1 Noise levels include non-helicopter construction equipment for each work activity. Helicopter noise is assessed separately.
2 Refer Table 3.15-3 for distances to nearest receptors.

Segments 1 and 2

LESS THAN SIGNIFICANT. Construction activities in Segments 1 and 2, located in Inyo and Kern Counties (Table 3.15-10), would involve rebuilding the subtransmission line between Control Substation and Kramer Substation. Rebuilding the subtransmission line involves construction of new subtransmission structures and removal of existing subtransmission structures. The construction activities would occur near noise-sensitive receptors where the Proposed Project is in proximity to noise-sensitive land uses. Intermittently elevated noise levels would occur in the vicinity of existing and proposed subtransmission structure locations, as well as within existing substations along the alignment. Activities at material yards and helicopter landing areas would also increase noise levels in the vicinity of the construction activity. In addition to the project worksites, construction-related traffic along local roadways and access roads would increase traffic noise along region-serving roadways, highways, and access and spur roads.

Construction activities along the entire Proposed Project would last for approximately 39 months; however, construction would proceed along the 262-mile-long line. Construction at each location would last a few days and would be completed over multiple phases as listed in Table 3.15-11. The total duration of all work activities at each location along the line would be a couple of weeks, with the exception of material yards and helicopter landing zones where activities would occur for several months. The construction noise levels would be intermittent and highly variable, depending on the proximity of the construction equipment to any noise-sensitive receptor and the intensity of the construction activity. Construction noise is made up of intermittent peaks and lower levels of continuous or residual noise from equipment movements or sporadic activity. Over a typical day, average noise levels (Leq) from construction would be lower than the intermittent peaks (Lmax) because most equipment would not be operated steadily or continuously at peak levels and equipment would be mobile and moving from one work area to the next along the line. All construction noise would diminish over distance and would be reduced by any intervening structures, topography, or vegetation.

Aggregated peak noise levels of up to approximately 86 dBA Lmax would occur at locations within 50 feet from construction activities (Table 3.15-10). The maximum noise level at the nearest sensitive receptor (35 feet) would be 91 dBA Leq occurring, however, peak construction noise exposure would not be continuous over the day and would last for a few days during each phase of construction as listed in Table

3.15-11. At distances over 1,200 feet, sustained noise levels would be under 55 dBA—the level that would interfere with outdoor activities (Table 3.15-3). Construction noise that does not exceed 55 dBA would tend to fade into daytime background noise levels in residential areas, such as the communities of Lone Pine, Cartago, and Randsburg. Sensitive receptors, including places of worship, libraries, and residences that occur within 1,200 feet of Proposed Project work areas would experience a temporary increase in noise levels of up to 40 dBA above ambient noise levels when construction activities are occurring in the vicinity. No schools or hospitals are located within 1,200 feet of Proposed Project work areas within Segment 1 or 2.

SCE would implement APM NOI-1, which requires construction equipment to use noise reduction features (e.g., mufflers and engine shrouds) and minimizes unnecessary idling times. As stated in the Project Description, construction would generally be performed from 7:00 a.m. and 7:00 p.m., Monday through Saturday; however, at limited times some construction may be required or finished after these hours, and on Sundays. The need for night work is dependent on several factors which include outage restrictions, and permit conditions, which are unknown at this time. SCE assumes that cutovers at each substation and each major highway could require night work.

The duration of this work is scope and location specific but would generally fall within a period of 8 to 12 hours. The temporary increase in noise levels would be very short in duration (a few days) and would generally occur during allowed construction hours consistent with the standards in the local general plan or noise ordinance. Due to the very short and limited use of night work outside of the locally approved construction hours, the project construction noise would not exceed the standards in the local general plan or noise ordinance. Construction noise impacts within Segments 1 and 2 would therefore be less than significant. No mitigation is required.

Segments 3N and 3S

LESS THAN SIGNIFICANT. Segments 3N and 3S, located in the unincorporated areas of San Bernardino County and the City of Barstow (Table 3.15-10), would involve reconductoring and replacing some existing structures of the subtransmission line between Kramer Substation and Coolwater Substation. Noise levels at sensitive receptors (50 feet from work sites) could reach 78 dBA Leq during removal of existing structures and 79 dBA Leq during TSP, LWS and telecommunication infrastructure installation (Table 3.15-11). Construction equipment could generate a maximum noise level ranging from 74 dBA to 86 dBA at the nearest sensitive receptors in Segments 3N and 3S (Table 3.15-10).

The majority of sensitive receptors within Segments 3N and 3S occur within the City of Barstow, along Segment 3S. Typical construction noise levels at these receptors would reach 79 dBA Leq at the nearest receptor, with maximum noise levels reaching 86 dBA Lmax during the loudest construction activities (Table 3.15-11). Segment 3S and 3N are located in more developed areas with higher ambient noise levels. The Proposed Project noise would generate an increase in ambient noise levels of approximately 20 dBA at the nearest receptor.

As stated in the Project Description, construction would generally be performed from 7:00 a.m. and 7:00 p.m., Monday through Saturday; however, at limited times some construction may be required or finished after these hours, and on Sundays. The need for night work is dependent on several factors which include outage restrictions, and permit conditions, which are unknown at this time. SCE assumes that cutovers at each substation and each major highway could require night work. The duration of this work is scope and location specific but would generally fall within a period of 8 to 12 hours. The temporary increase in noise levels would be very short in duration (a few days) and would generally occur during allowed construction hours of 7 a.m. to 7 p.m., which is consistent with the standards in the local general plan or noise ordinance. Due to the very short and limited use of night work outside of the locally approved construction hours, the project construction noise would not exceed the standards in the local general plan or noise ordinance. Construction noise within Segments 3N and 3S would be less than significant. No mitigation is required.

Helicopters

LESS THAN SIGNIFICANT WITH MITIGATION. Helicopter activities for the Proposed Project construction could include delivery of equipment and materials from material yards to structure work areas, structure placement, hardware installation, and conductor and/or OPGW stringing operations. Helicopter use could occur at any location in the Proposed Project area, but helicopters would generally take off and land or pick up materials at material yards. The applicant has also identified five additional helicopter landing zones along the proposed alignment where a material yard is not proximate to a location where helicopter assisted construction would be required. Helicopters may need to land within ROWs, which could include landing on access or spur roads. Refueling could occur in the material yards, ROWs or access or spur roads, or at local airports.

Residential receptors are located as close as 40 feet from material yards and landing zones. However, it is assumed that helicopter operations would be a minimum of 100 feet away from sensitive receptors due to setback and safety requirements. As shown in Table 3.15-12, helicopter noise at a distance of 100 feet ranges between 85 to 92 dBA for light-duty and medium-duty helicopters. Although helicopter use would typically occur in short durations at the material yard (approximately 10 minutes to obtain materials), exposure to noise levels of 90 dBA or more can cause hearing loss (Lutman, 2000). The increase in noise from helicopters up to 90 dBA or more would therefore be substantial due to its potential to cause hearing damage. While the helicopter noise would be intermittent and for brief periods during the day, helicopters could use landing zones and material yards for months causing a temporary and intermittent significant increase in noise levels.

SCE has proposed implementation of APM NOI-1, which requires construction activities to occur during daytime construction hours in accordance with the local noise standards. It also requires that helicopter flights be routed away from residences and schools, where feasible. Even with implementation of APM NOI-1, the noise from helicopter use would be substantial at receptors adjacent to material yards and landing zones where helicopter use would be continuous for months. The noise impact from helicopter use would be significant and requires mitigation to reduce its severity.

Table 3.15-12. Modeled Helicopter Noise Level at Varying Distances

Helicopter Type	Lmax at 20 feet (dBA)	Lmax at 50 feet (dBA)	Lmax at 100 feet (dBA)	Lmax at 200 feet (dBA)	Lmax at 400 feet (dBA)	Lmax at 800 feet (dBA)	Lmax at 1,000 feet (dBA)	Lmax at 2,000 feet (dBA)
Light-duty Helicopter	99	91	85	79	73	67	65	57
Medium-duty Helicopter	106	98	92	86	80	71	72	66

To reduce potential noise impacts associated with helicopter activities, Mitigation Measure N-1a (Helicopter Noise Control Strategy) requires SCE to develop and implement a helicopter noise control strategy. The Helicopter Use Plan would identify helicopter noise control strategies, including, but not limited to, the establishment of helicopter flight corridors and minimum transit elevations above ground level to avoid noise-sensitive receptors on the ground and limiting helicopter use to the hours of 7 a.m. to 7 p.m. Monday through Friday. Mitigation Measure N-1a (Helicopter Noise Control Strategy) would also prohibit helicopter hovering within 250 feet of residences since at this distance the noise level would be similar to proposed construction activities and less than significant as discussed above. Noise impacts from helicopter use would be less than significant with implementation of mitigation.

Material Yards

LESS THAN SIGNIFICANT. Noise generating activities at material yards include staging, storing, and assembling equipment; refueling vehicles, helicopters, and construction equipment; construction worker tailboard meetings; and helicopter takeoff and landing. The impacts of helicopter takeoff and landing at material yards is discussed above. Non-helicopter noise levels at material yards would vary depending on the

activity. Noise levels at the nearest receptor (approximately 45 ft) are anticipated to be approximately 77 dBA, which is an approximately 20 dBA increase from ambient noise levels. While the maximum noise level at material yards exceed ambient noise levels, the noise generated at material yards would be intermittent as materials are delivered and removed from the yard; noise would not be generated continuously throughout the day. As stated in the Project Description, construction would generally be performed from 7:00 a.m. and 7:00 p.m., Monday through Saturday; however, at limited times some construction may be required or finished after these hours, and on Sundays. The need for night work is dependent on several factors which include outage restrictions, and permit conditions, which are unknown at this time. SCE assumes that cutovers at each substation and each major highway could require night work. The duration of this work is scope and location specific but would generally fall within a period of 8 to 12 hours. The temporary increase in noise levels would be very short in duration (a few days) and would generally occur during allowed construction hours of 7 a.m. to 7 p.m., which is consistent with the standards in the local general plan or noise ordinance. Due to the very short and limited use of night work outside of the locally approved construction hours, the project construction noise would not exceed the standards in the local general plan or noise ordinance. Thus, the noise impact from construction activities at material yards would be less than significant. No mitigation is required.

Operations and Maintenance

All Segments

LESS THAN SIGNIFICANT. Operations and maintenance of the Proposed Project would be similar to existing conditions. The sub-stations that occur along the alignment would continue to produce noise associated with the transformers. The Proposed Project would not install additional transformers, and the noise level would therefore be similar to the existing noise conditions in proximity to the substations. Post-construction maintenance activities would be similar in frequency, duration, and scope to the existing maintenance activities performed on the existing subtransmission lines and would include annual inspections of the subtransmission line and maintenance of the facilities on an as-needed basis.

Corona noise occurs when energy from the transmission line escapes the conductor, through connection points or abrasions in the conductor, and interacts with dust and humidity in the air or dust built up on the conductor. Replacing the conductor as proposed would allow less energy to escape through abrasions along the conductor.

The Proposed Project would not generate a substantial temporary or permanent increase in ambient noise levels in the Proposed Project vicinity during operations and maintenance. The impact would be less than significant.

Mitigation Measure for Impact N-1

N-1a **Implement Helicopter Noise Control Strategy.** SCE shall prepare and implement a Helicopter Use Plan that includes a helicopter noise control strategy in the final Helicopter Use Plan. The noise control strategy shall include definition of helicopter flight corridors and minimum transit elevations above ground level to avoid noise-sensitive receptors on the ground. The noise control strategy shall prohibit helicopter hovering (greater than 15 minutes) within 250 feet of residences or schools in any vertical or horizontal direction. Helicopter use shall be limited to the hours of 7 a.m. to 7 p.m. Monday through Friday. The Helicopter Use Plan, including the noise control strategy, shall be provided to the CPUC for review at least 60 days prior to helicopter activities.

Impact N-2: Generate or expose persons to excessive groundborne vibration.

Overview

No vibration-sensitive land uses (e.g., high precision manufacturing facilities or research facilities with optical and electron microscopes) are located in the Proposed Project vicinity. The significance threshold for "excessive" groundborne vibration depends on whether the Proposed Project would cause groundborne vibration noise levels that would be a nuisance or annoyance or cause physical damage to a structure (Table 3.15-4). Vibration attenuates quickly and would not be readily perceptible at distances further than 50 feet from the vibration-generating equipment; therefore, the analysis below focuses on receptors located at distances closer than 50 feet. The only structures within 50 feet of the Proposed Project work areas include residences in Segment 1 and Segment 3S.

As noted in Section 3.15.2.3, Inyo County and Kern County do not have ordinances or policies that regulate construction vibration. However, San Bernardino County and the City of Barstow have ordinances or policies related to groundborne vibration. A summary for each jurisdiction is provided below:

- San Bernardino County – Construction activities are exempt from vibration requirements as long as construction activities occur between 7:00 a.m. and 7:00 p.m., except Sundays and Federal holidays.
- City of Barstow
  - POLICY 2.B: Minimize noise and ground vibration associated with project construction.
  - STRATEGY 2.B.2: Vibration levels shall be limited to 0.2 inches per second at the property line (or nearest sensitive receptor).

Construction

LESS THAN SIGNIFICANT. Construction activities along the existing and proposed subtransmission line, new telecommunications infrastructure, and at material yards would create vibration through the use of equipment such as excavators, dozers, trucks, and drill rigs or auger trucks for installing the foundation of towers and poles. The highest levels of vibration would be caused by a typical large bulldozer or by drilling with an auger for the concrete footings of structures. Vibration levels generated by a bulldozer and auger are provided in Table 3.15-13. Pile driving or the use of explosives or blasting that could cause groundborne vibration at levels capable of causing structural damage to buildings in the immediate vicinity are not anticipated to be required.

Table 3.15-13. Vibration Levels Generated by Construction Equipment

Equipment	Vibration at 20 feet (PPV)	Vibration at 40 feet (PPV)	Vibration at 50 feet (PPV)	Exceeds 0.20 PPV?
Bulldozer/Augur	0.114	0.053	0.042	Closer than 15 feet

Use of a larger dozer or other heavy equipment on uneven surfaces, and drilling for foundations to be removed or installed would each create perceptible vibration in the immediate vicinity of the equipment. The vibration can result in perceptible movement of building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. Vibration from construction equipment and activities could be perceptible at distances closer than 50 feet from construction activities. The nearest residences to the construction activities are a residence 35 feet from Segment 1 in Inyo County and a residence 40 feet from Segment 3S in the City of Barstow. Inyo County has not established a vibration threshold but has defined that construction noise would be exempt from limits between the hours of 7:00 am and 7:00 pm. As stated in the Project Description, construction would generally be performed from 7:00 a.m. and 7:00 p.m., Monday through Saturday; however, at limited times some construction may be required or finished after these hours, and on Sundays. The need for night work is dependent on several factors which include outage restrictions, and permit conditions, which are unknown at this time. SCE

assumes that cutovers at each substation and each major highway could require night work. The duration of this work is scope and location specific but would generally fall within a period of 8 to 12 hours. The temporary increase in noise levels would be very short in duration (a few days) and would generally occur during allowed construction hours of 7 a.m. to 7 p.m. Vibration levels would also be below 0.2 inches per second at the property line (or nearest sensitive receptor) in the City of Barstow as required by City of Barstow STRATEGY 2.B.2 because the vibration levels would dissipate to 0.05 at the nearest receptor. Because vibration generating activities would generally occur during the daytime construction hours approved in the local noise standards and because the vibration would not exceed the City of Barstow standards, the impact from vibration would be less than significant. No mitigation is required.

Operations and Maintenance

LESS THAN SIGNIFICANT. On-going operation of the subtransmission line would not require any equipment activity and no vibration would be produced by subtransmission line operation. Inspection and maintenance of the subtransmission line may generate brief groundborne vibrations due to trucks driving over uneven surfaces. Vibrations may be perceptible within the immediate Proposed Project vicinity but would be extremely brief and limited to the time that vehicles pass the receptor. Inspection and maintenance of the subtransmission line would involve the same maintenance activities that are currently provided for the existing subtransmission lines in the ROW and vibration impacts within the immediate vicinity would be similar to those currently experienced. Maintenance activities would be infrequent and would not generate excessive groundborne vibration or groundborne noise levels. Therefore, operations and maintenance of the Project would not expose persons to excessive groundborne vibration or groundborne noise levels and impacts would be less than significant. No mitigation is required.

Impact N-3: Be located within the vicinity of a private airstrip or an airport land use plan.

SCE Ridgecrest Service Center Heliport is a private heliport located within Material Yard ICKI SA 1-3. Three active airports (Inyokern, Lone Pine, and Baker) are located within 2 miles of the Proposed Project[2] (Table 3.15-2). The Proposed Project is not located within an airport land use plan.

Segments 3N and 3S are not located within 2 miles of any airport or airstrip. The following discussion focuses on airport related noise impacts in Segments 1 and 2 and Material Yard ICKI SA 1-3.

Construction

Segments 1 and 2

NO IMPACT. The Proposed Project would involve construction of subtransmission line and telecommunication/system protection upgrades and would not expose residents to excessive noise levels associated with airports. Construction workers may be exposed to noise generated by aircraft flying over the Proposed Project segments and helicopters accessing the Proposed Project ROW; however, the Proposed Project would be located outside the 60 dBA CNEL noise contours for all airports. No Proposed Project construction would be located in any airport land use plan area or within the noise impact zone of any nearby airport. Construction workers would not be exposed to excessive airport noise, and no impact would occur.

Material Yard ICKI SA 1-3 (Ridgecrest)

LESS THAN SIGNIFICANT. SCE Ridgecrest Service Center Heliport is located within Material Yard ICKI SA 1-3 and supports helicopter activity unrelated to the Proposed Project, in addition to proposed helicopter activities. Helicopter noise associated with the Proposed Project is discussed above in Impact N-1. Construction personnel working at Material Yard ICKI SA 1-3 may be temporarily exposed to noise generated by helicopter takeoff and landing at the SCE Ridgecrest Service Center Heliport. Noise would

[2] Segments 3N and 3S are not located within two miles of any airport. Depue Airport is located approximately 2.7 miles south of Segment 3S. Bartow-Daggett Airport is located approximately 3.75 miles east of the eastern termini of Segments 3N and 3S.

be brief and similar to noise generated by the Proposed Project activities and would be regulated by OSHA and California Noise Exposure Regulations for worker safety. The SCE Ridgecrest Service Center Heliport would not expose construction workers or nearby receptors to excessive noise levels. The impact would be less than significant. No mitigation is required.

Operations and Maintenance

NO IMPACT. Operation of the Proposed Project would not require regular staffing. Maintenance and inspections would occur occasionally; however, inspection would be no more frequent than for the current power line in the transmission corridor. Employees performing inspection duties and maintenance on the line would be exposed to the same noise from the nearby airports as in current conditions. No impact would occur.

3.15.4. Mitigation Monitoring, Compliance, and Reporting

Table 3.15-14 presents the mitigation monitoring, compliance, and reporting information for noise. The full text of the mitigation measures is presented in Section 3.15.3.3.

Table 3.15-14. Mitigation Monitoring Program – Noise

Mitigation Component	Text or Description
Mitigation Measure N-1a	**Implement Helicopter Noise Control Strategy**
Location	Entire Project where helicopter use would occur
Monitoring / Reporting Action	CPUC to review and approve SCE's Noise Control Strategy and verify that SCE implements the approved strategy
Effectiveness Criteria	Noise is reduced near sensitive receptors
Responsible Agency	CPUC
Timing	Ongoing during construction

3.15.5. References

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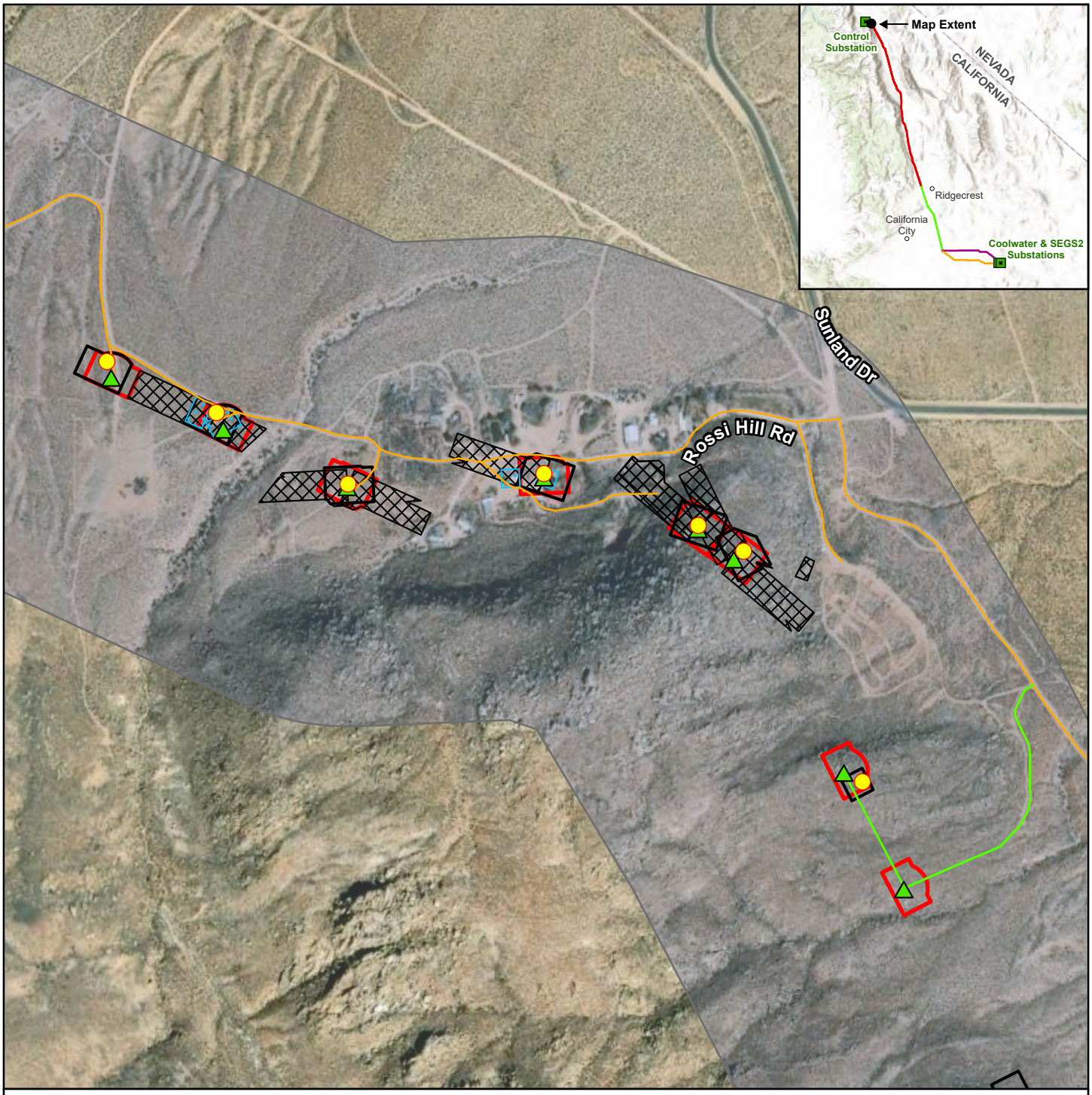
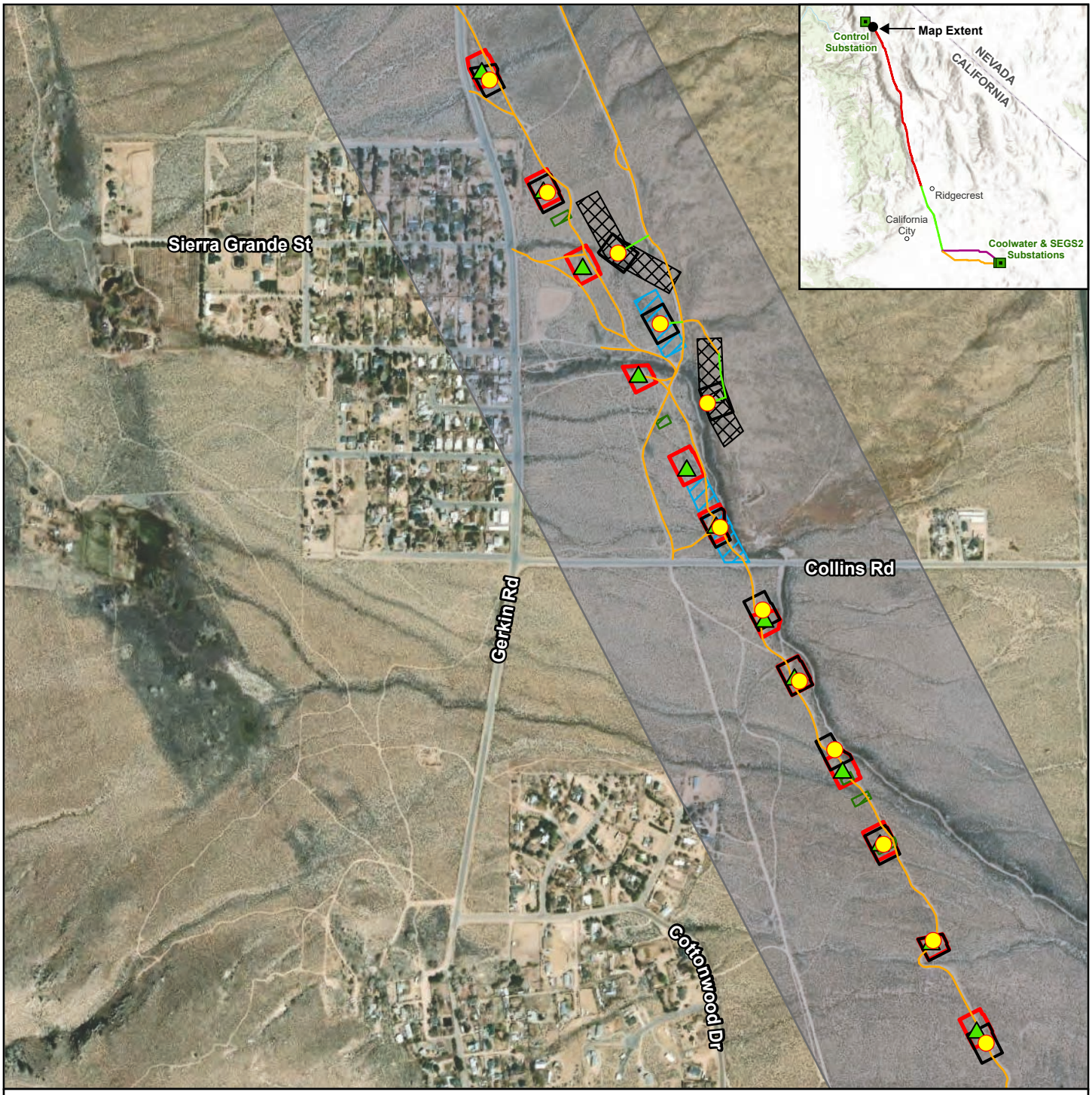


Source: Aspen, 2024; Esri, 2024; SCE, 2024.

Figure 3.15-1a
Noise-Sensitive Receptors
Sunland Drive South of Bishop



Source: Aspen, 2024; Esri, 2024; SCE, 2024.

Figure 3.15-1b
Noise-Sensitive Receptors
Community of Wilkerson

Subtransmission Structures
- Proposed New Structure
- Structure to be Removed

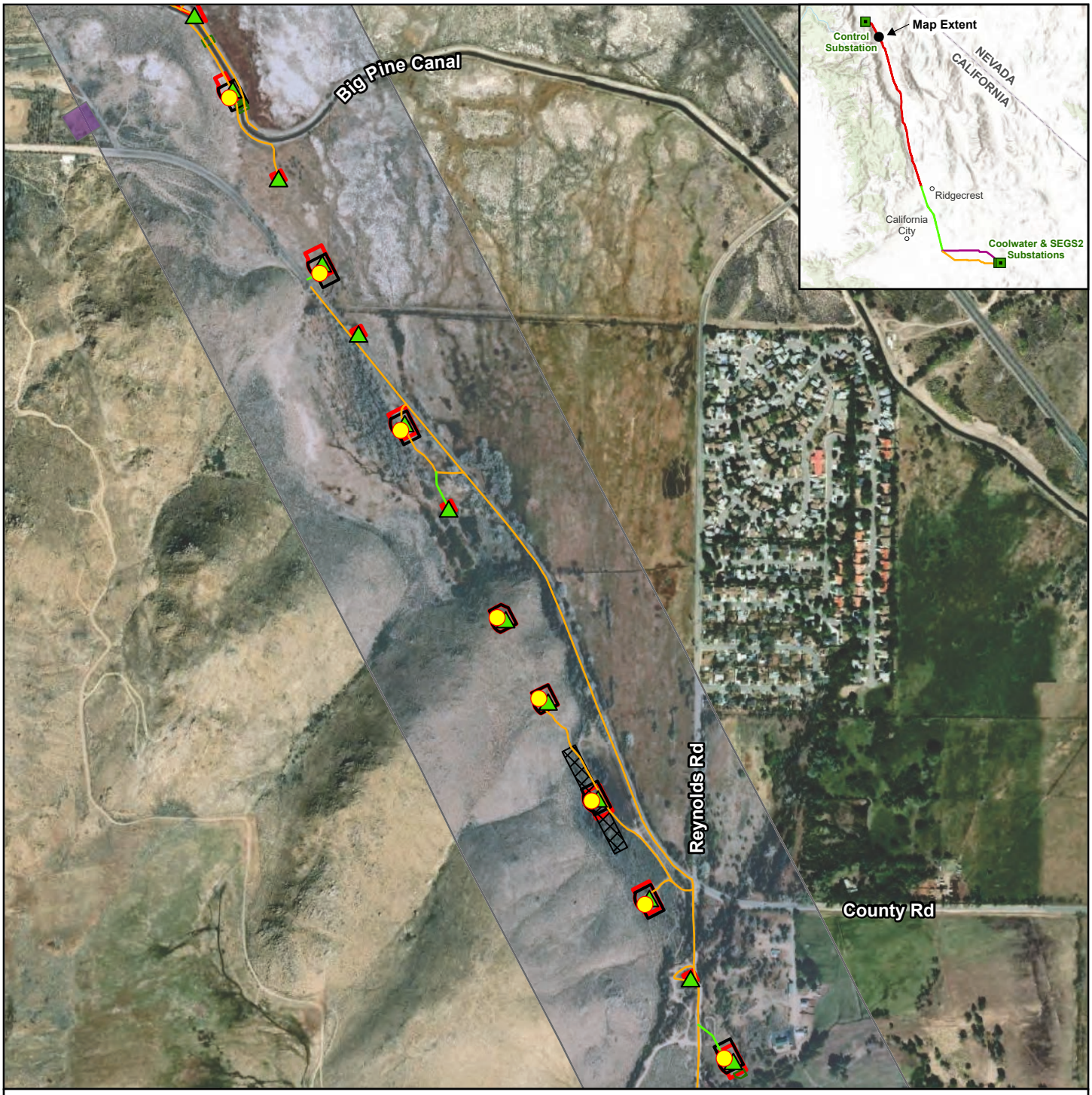
Roads
- Existing Access Road
- New Access Road

1,000-ft Buffer

Construction Areas
- Demolition Site
- General Disturbance Area
- Pull Site
- Structure Work Area
- Wire Setup

1:10,800

N 0 900 feet



Source: Aspen, 2024; Esri, 2024; SCE, 2024.

Figure 3.15-1c
Noise-Sensitive Receptors Northwest of Big Pine

Subtransmission Structures
- Proposed New Structure
- Structure to be Removed

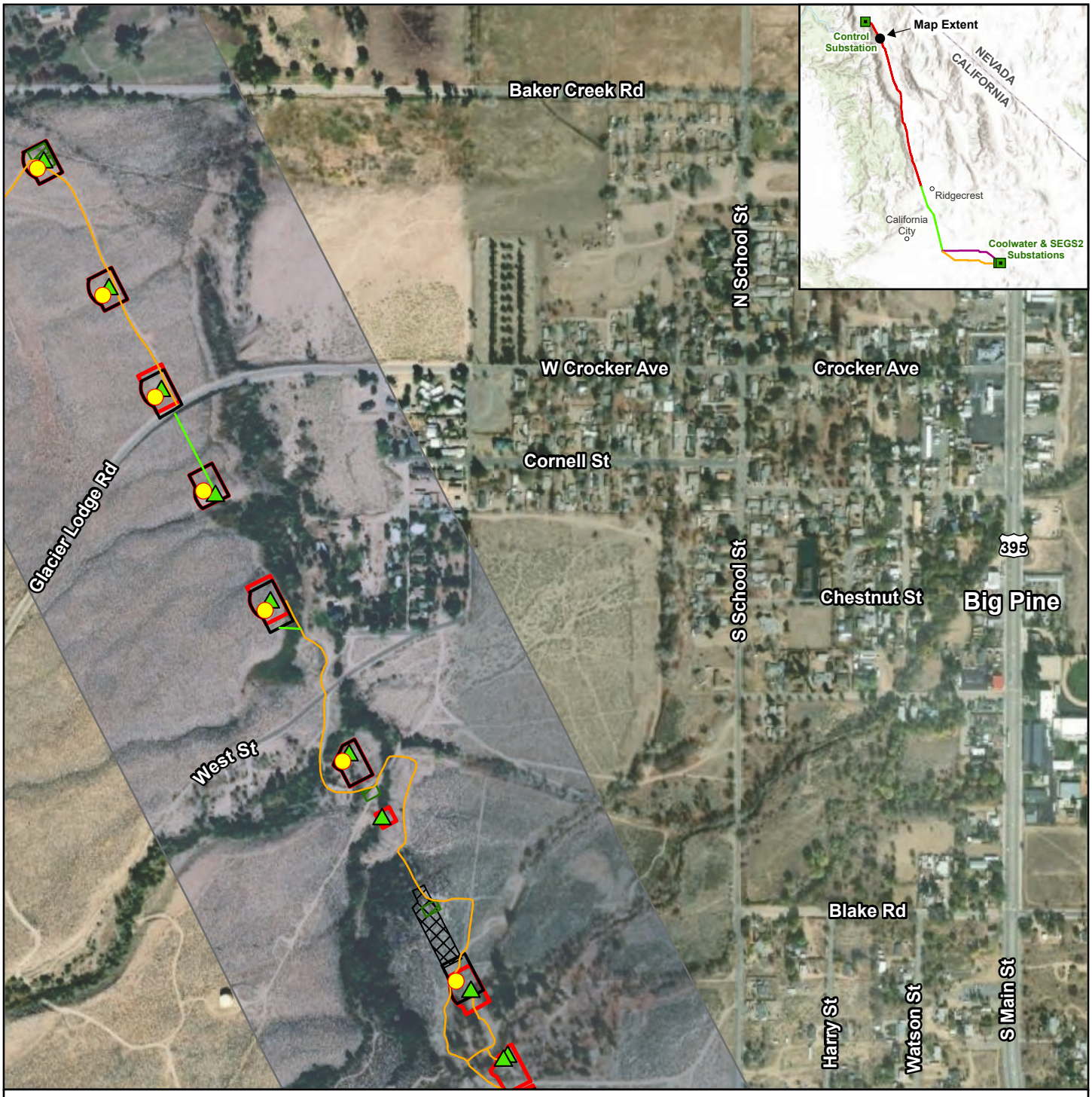
Roads
- Existing Access Road
- New Access Road

1,000-ft Buffer

Construction Areas
- Demolition Site
- General Disturbance Area
- Helicopter Landing Zone
- Pull Site
- Structure Work Area

1:12,000

N 0 1,000 feet



Source: Aspen, 2024; Esri, 2024; SCE, 2024.

Figure 3.15-1d
Noise-Sensitive Receptors Southwest of Big Pine

Subtransmission Structures
- Proposed New Structure
- Structure to be Removed

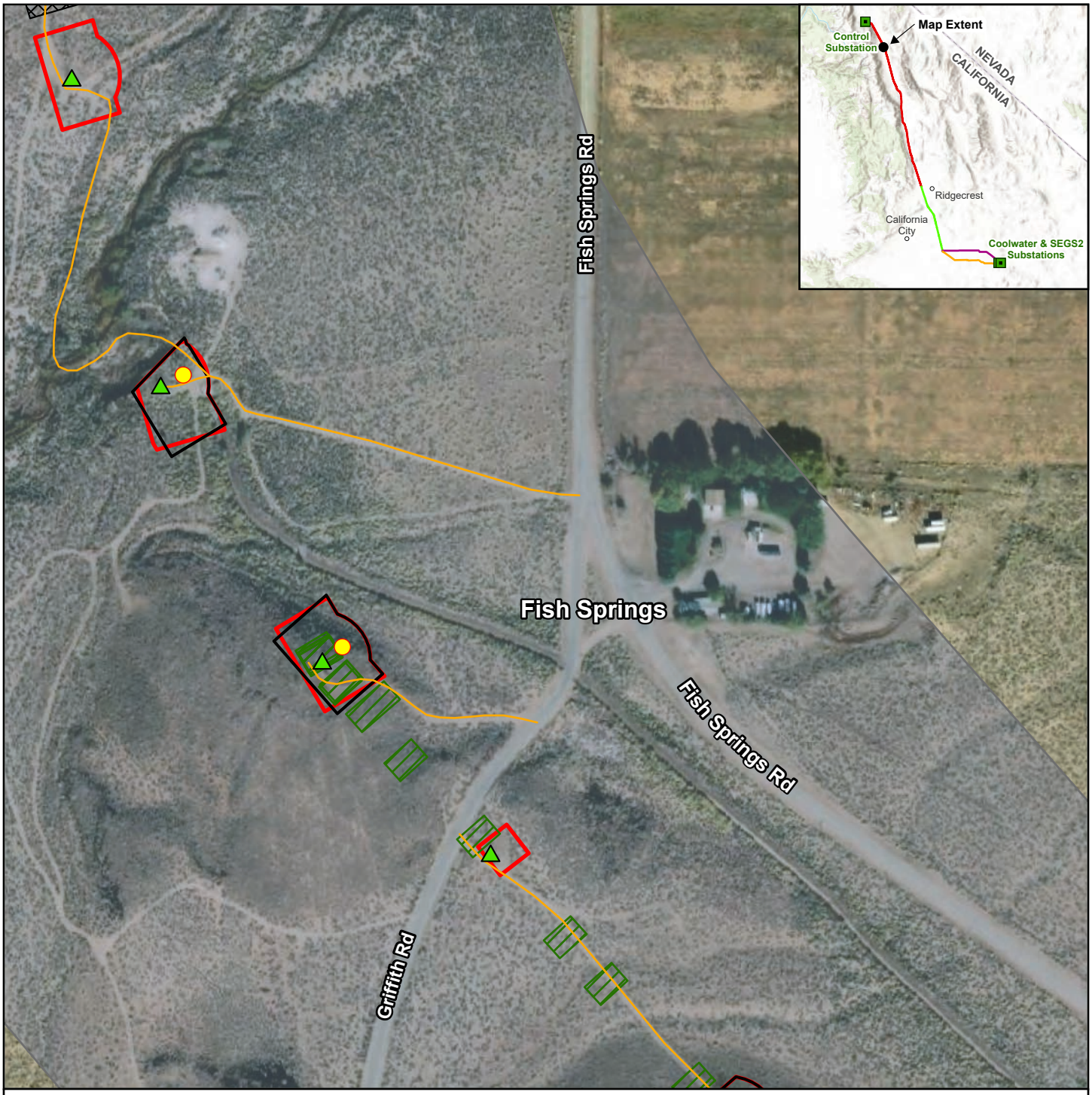
Roads
- Existing Access Road
- New Access Road

1,000-ft Buffer

Construction Areas
- Demolition Site
- General Disturbance Area
- Pull Site
- Structure Work Area

1:8,400

N 0 700 feet



Source: Aspen, 2024; Esri, 2024; SCE, 2024.

Figure 3.15-1e
Noise-Sensitive Receptors
Fish Springs

Subtransmission Structures
- Proposed New Structure
- Structure to be Removed

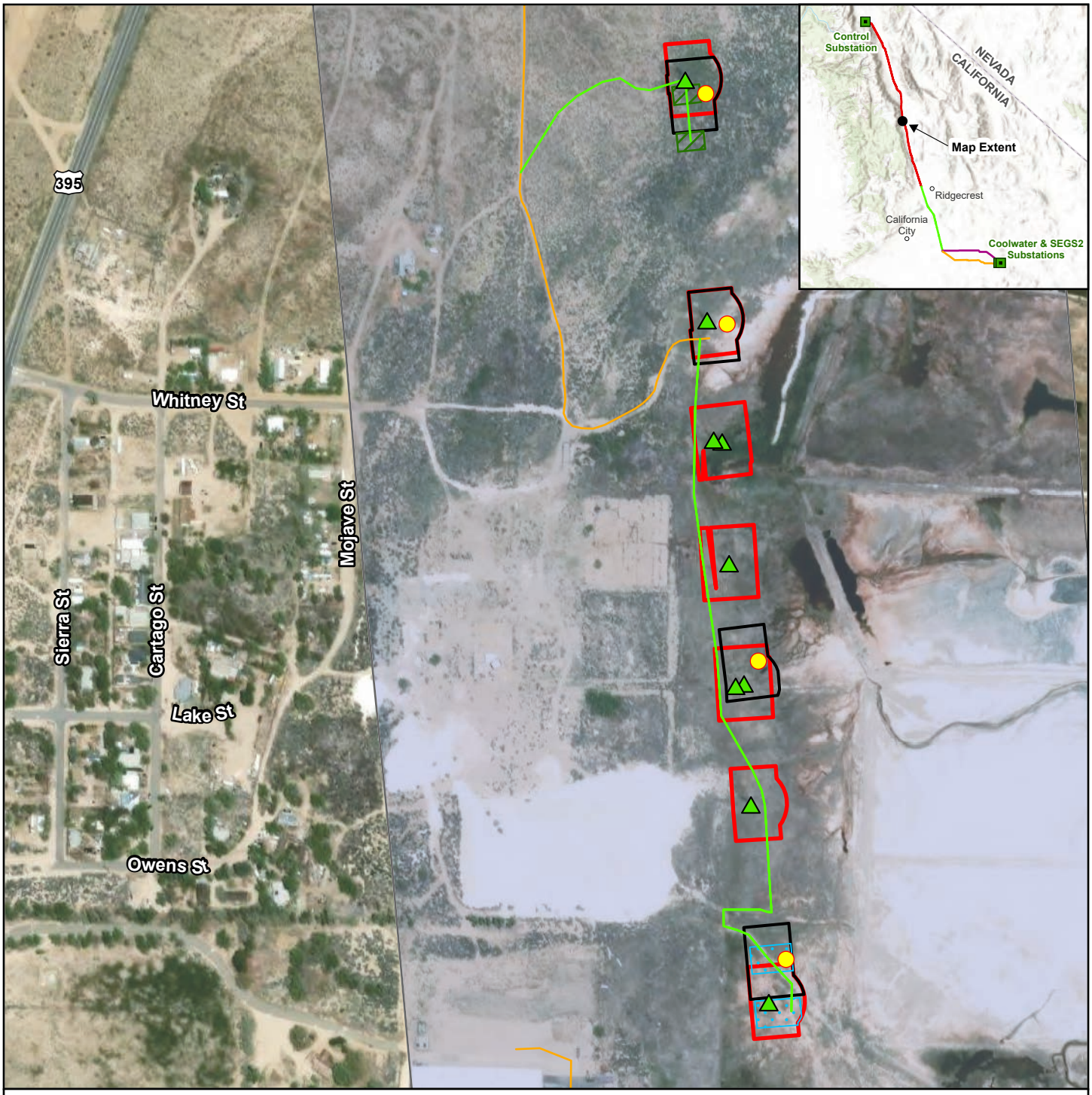
Roads
- Existing Access Road

1,000-ft Buffer

Construction Areas
- Demolition Site
- General Disturbance Area
- Pull Site
- Structure Work Area

1:3,600

N 0 300 feet



Source: Aspen, 2024; Esri, 2024; SCE, 2024.

Figure 3.15-1f
Noise-Sensitive Receptors East of Cartago

Subtransmission Structures
- Proposed New Structure
- Structure to be Removed

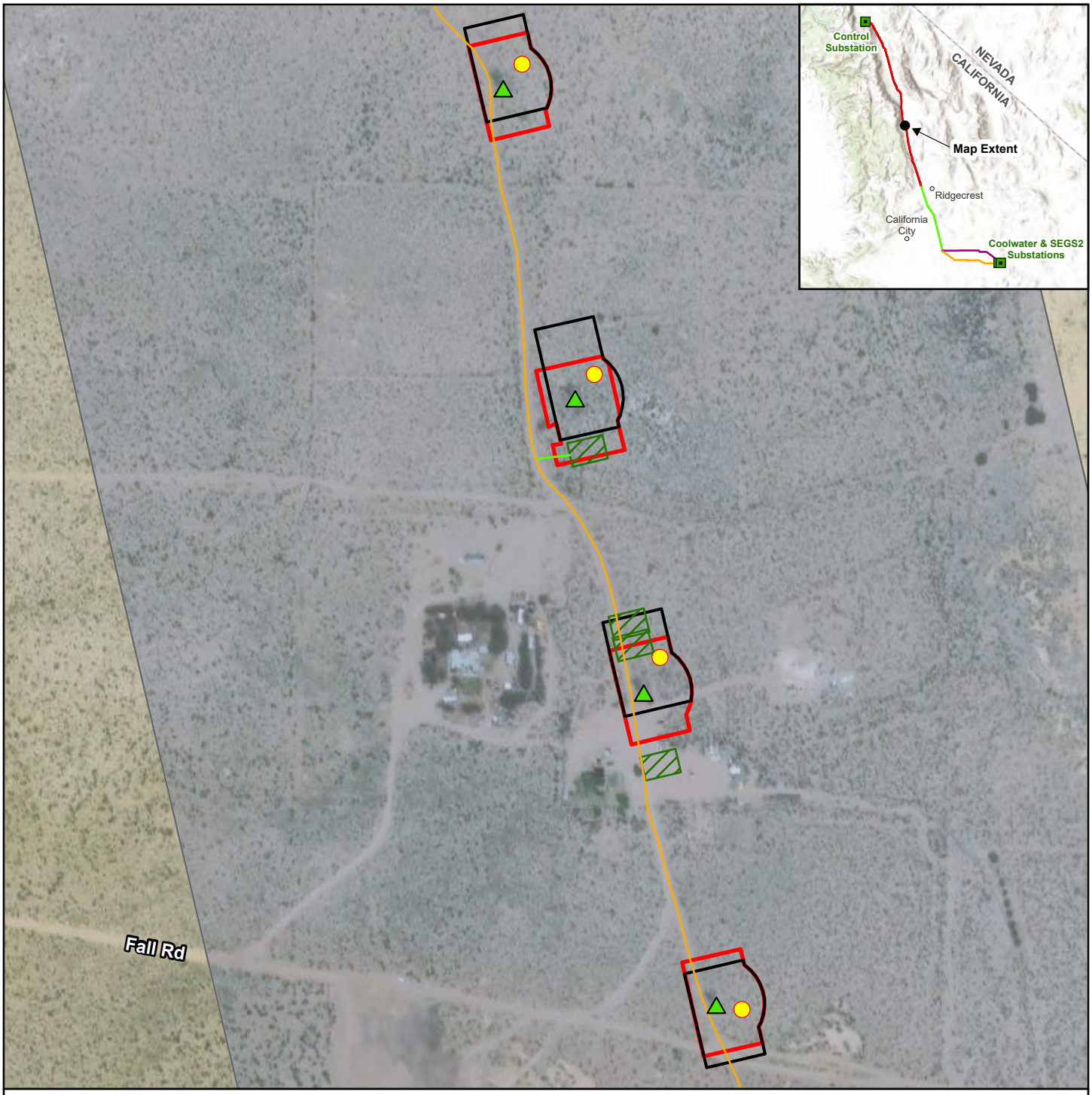
Roads
- Existing Access Road
- New Access Road

1,000-ft Buffer

Construction Areas
- Demolition Site
- General Disturbance Area
- Guard Site
- Structure Work Area

1:4,800

N 0 400 feet



Source: Aspen, 2024; Esri, 2024; SCE, 2024.

Figure 3.15-1g
Noise-Sensitive Receptors South of Cartago

Subtransmission Structures
- Proposed New Structure
- Structure to be Removed

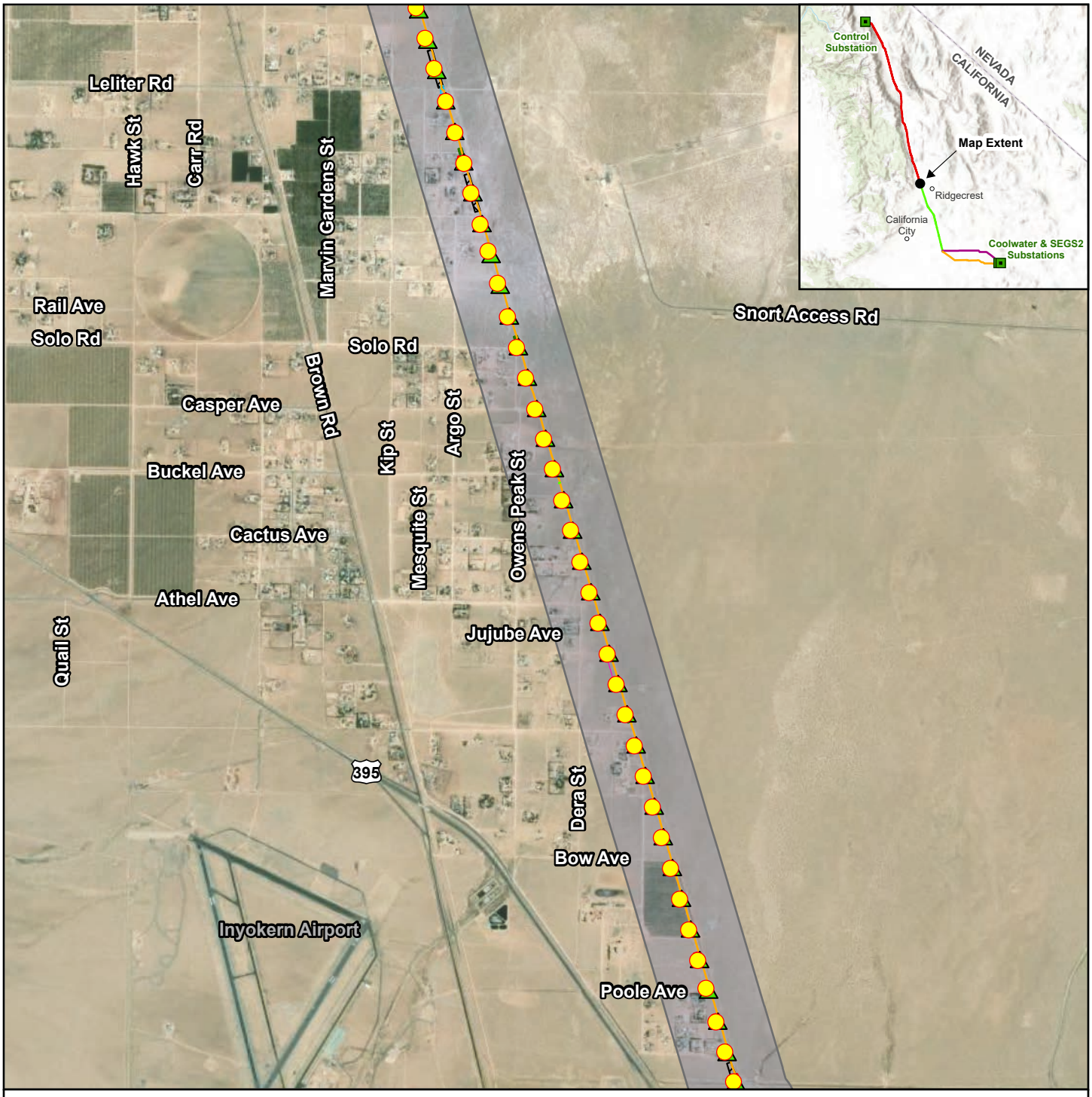
Roads
- Existing Access Road
- New Access Road

1,000-ft Buffer

Construction Areas
- Demolition Site
- General Disturbance Area
- Structure Work Area

1:3,600

N 0 300 feet



Source: Aspen, 2024; Esri, 2024; SCE, 2024.

Figure 3.15-1h
Noise-Sensitive Receptors North of Inyokern

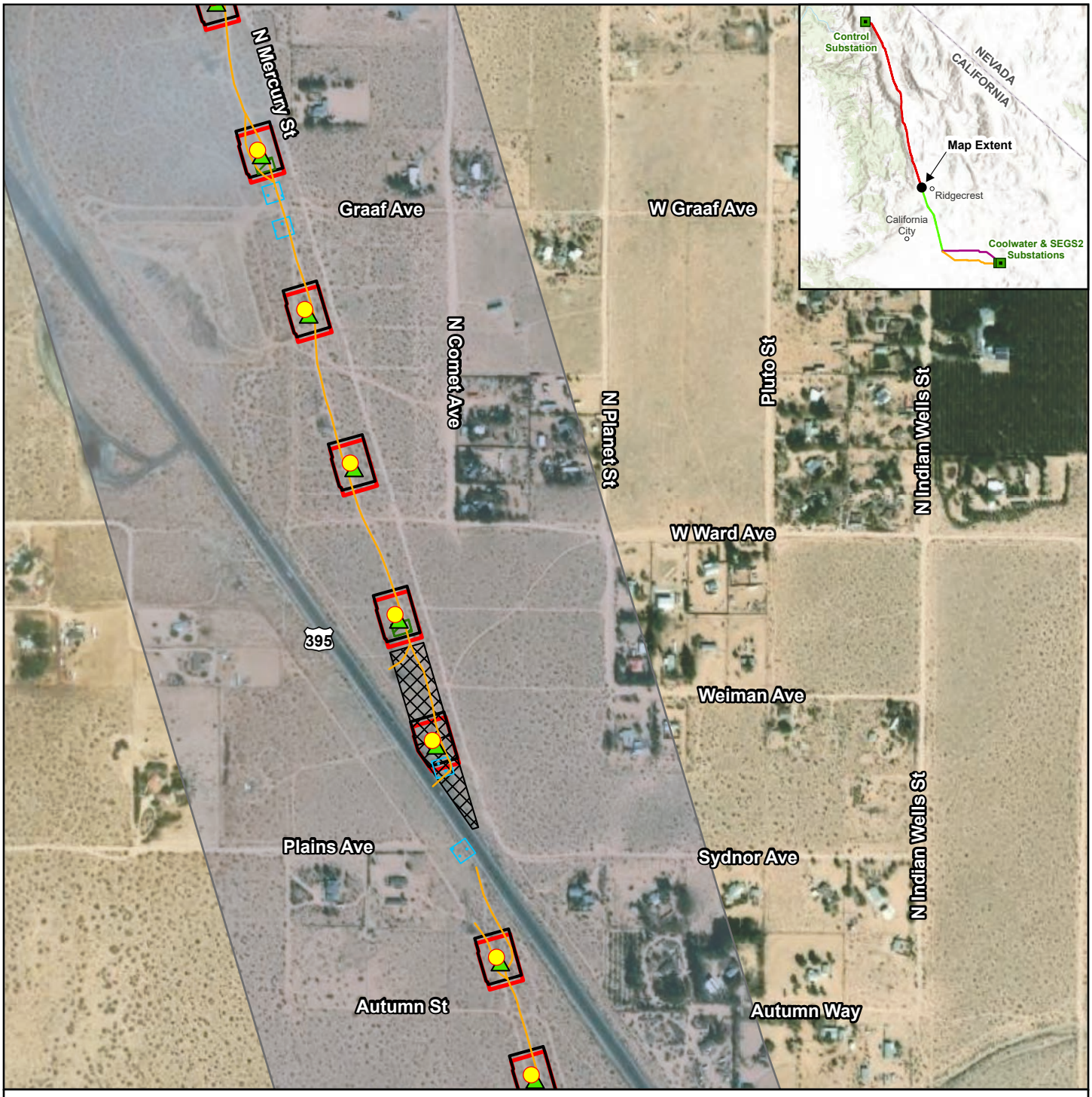
Subtransmission Structures
- Proposed New Structure
- Structure to be Removed

Roads
- Existing Access Road
- New Access Road

1,000-ft Buffer

Construction Areas
- Demolition Site
- General Disturbance Area
- Guard Site
- Pull Site
- Splice Site
- Structure Work Area

1:36,000
N
0 3,000 feet



Source: Aspen, 2024; Esri, 2024; SCE, 2024.

Figure 3.15-2a
Noise-Sensitive Receptors South of Inyokern Substation

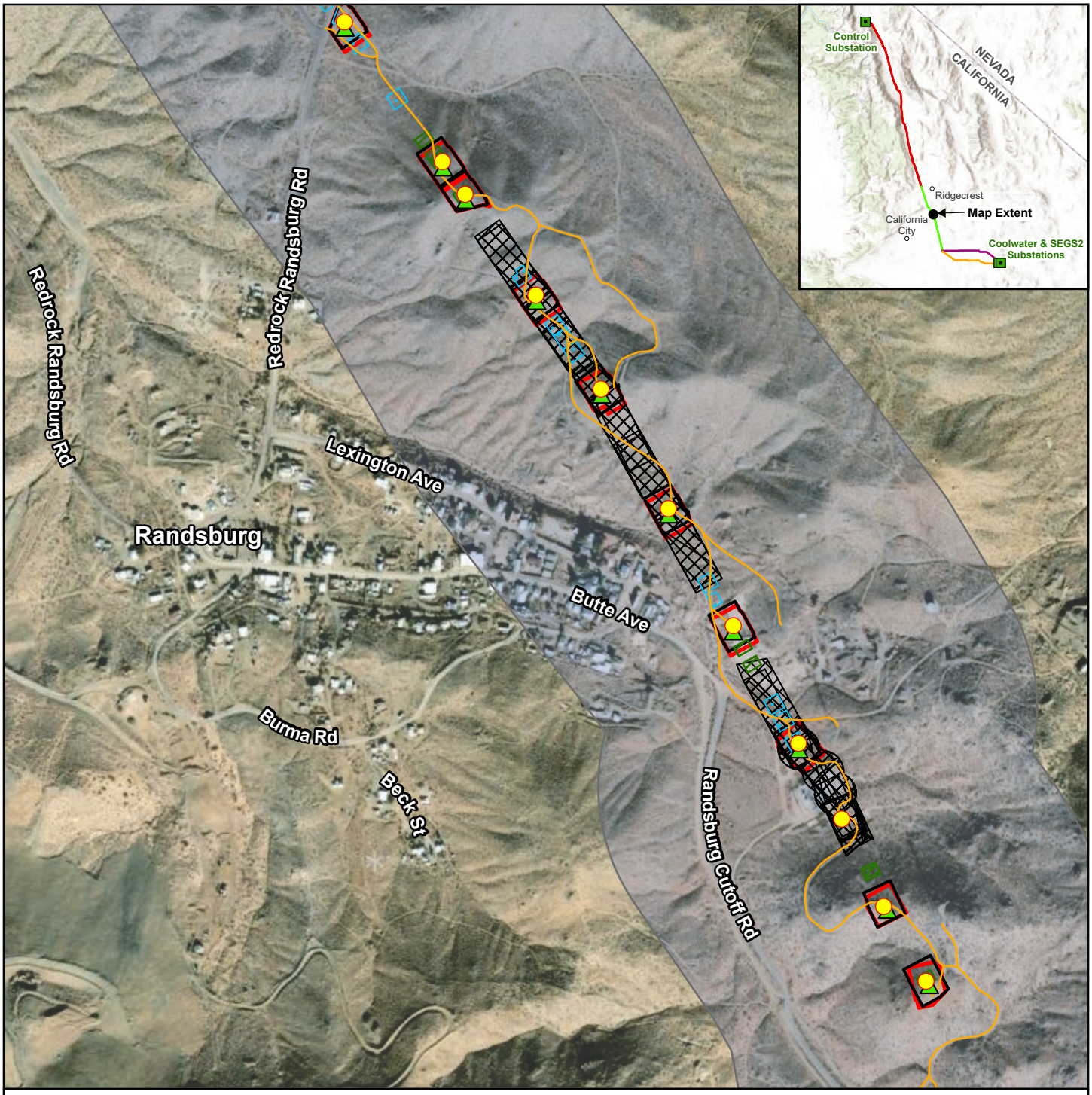
Subtransmission Structures
- Proposed New Structure
- Structure to be Removed

Roads
- Existing Access Road

1,000-ft Buffer

Construction Areas
- Demolition Site
- General Disturbance Area
- Guard Site
- Pull Site
- Structure Work Area

1:7,200
N
0 600 feet



Source: Aspen, 2024; Esri, 2024; SCE, 2024.

Figure 3.15-2b
Noise-Sensitive Receptors
Randsburg

Subtransmission Structures
- Proposed New Structure
- Structure to be Removed

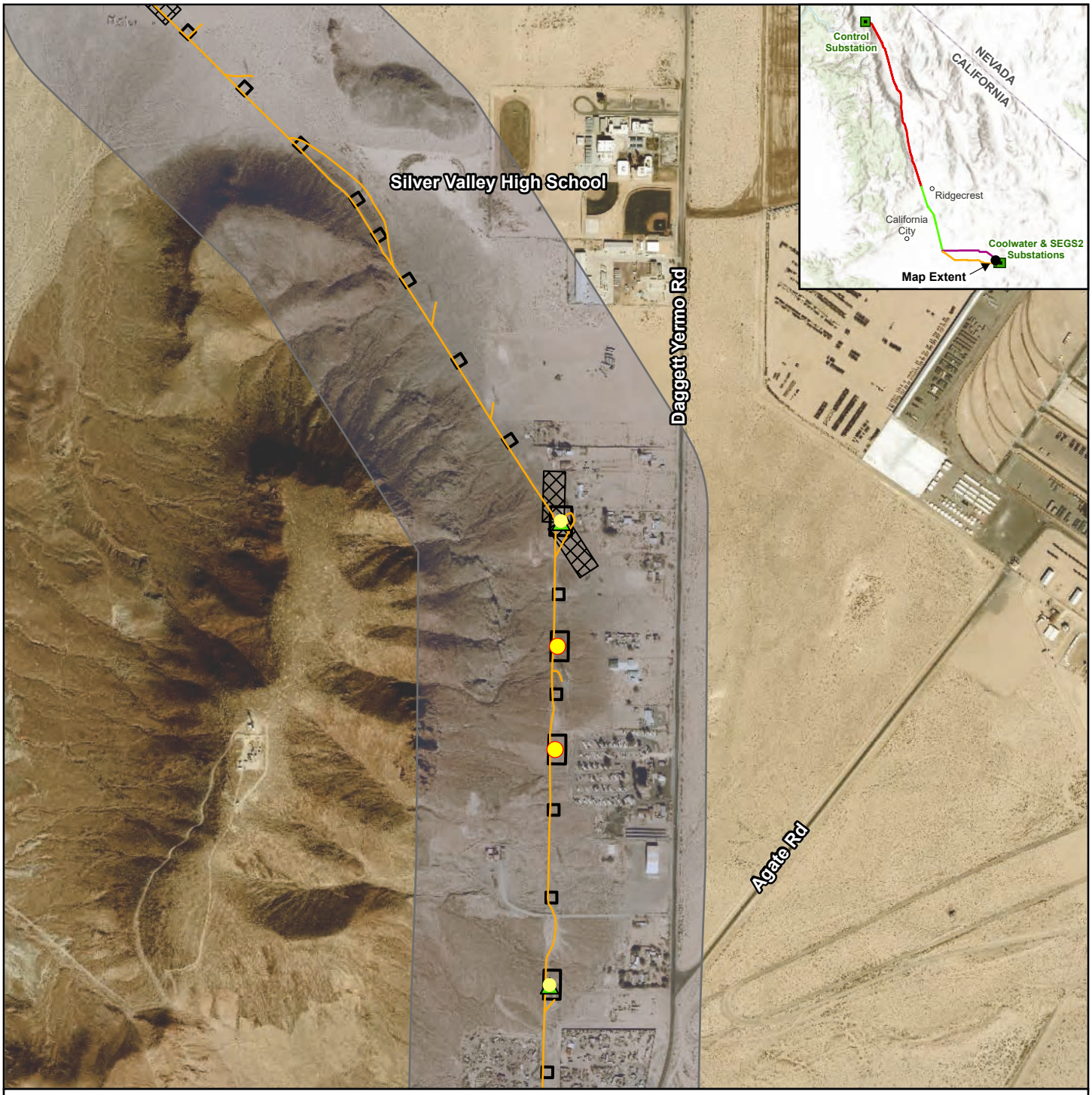
Roads
- Existing Access Road

1,000-ft Buffer

Construction Areas
- Demolition Site
- General Disturbance Area
- Guard Site
- Pull Site
- Structure Work Area

1:8,400

N 0 700 feet



Source: Aspen, 2024; Esri, 2024; SCE, 2024.

Figure 3.15-3a
Noise-Sensitive Receptors
Silver Valley High School and Daggett Yermo Road

Subtransmission Structures
- New-Remove-Existing
- Proposed New Structure
- Structure to be Removed

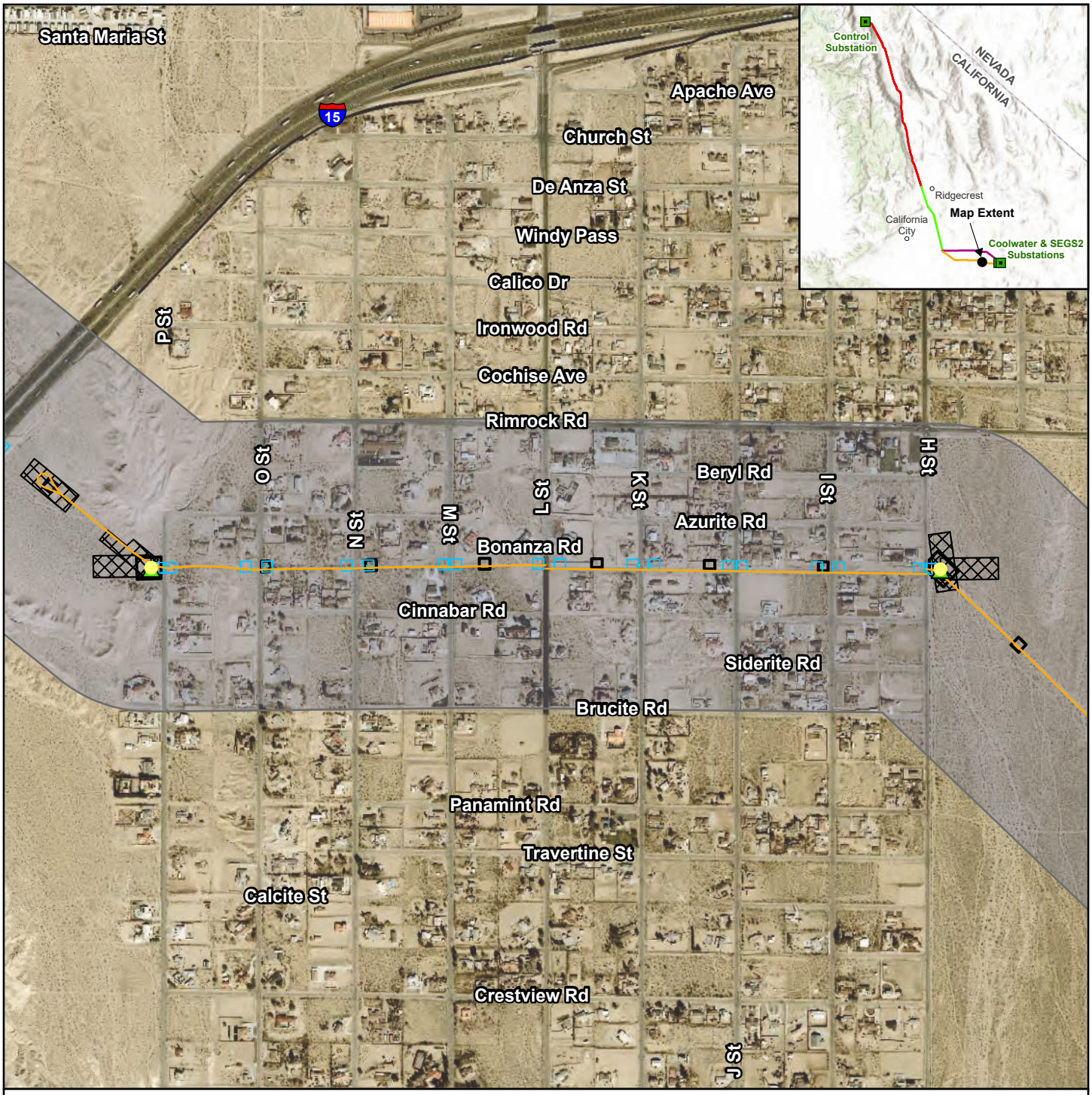
Roads
- Existing Access Road

1,000-ft Buffer

Construction Areas
- Pull Site
- Structure Work Area

1:12,000

N 0 1,000 feet



Source: Aspen, 2024; Esri, 2024; SCE, 2024.

Figure 3.15-3b
Noise-Sensitive Receptors
Bonanza Road (Barstow Heights)

Subtransmission Structures
- New-Remove-Existing
- Structure to be Removed

Roads
- Existing Access Road

1,000-ft Buffer

Construction Areas
- Guard Site
- Pull Site
- Structure Work Area

1:12,000

N 0 1,000 feet

3.16. Population and Housing

This section describes existing environmental conditions and anticipated impacts associated with the Proposed Project with regard to Population and Housing. Impacts evaluated in this section include indirect and direct impacts of population growth and displacement of housing or people causing a need for replacement housing. This section discusses the population and housing conditions within the Proposed Project area, as well as the impacts that could result from construction and operation of the Proposed Project.

The environmental setting for Population and Housing is presented in Section 3.16.1 and relevant regulations and standards are summarized in Section 3.16.2. Section 3.16.3 describes the impacts on the environment associated with implementation of the Proposed Project. As needed, these impact discussions identify mitigation measures that would reduce or avoid significant adverse environmental impacts. Section 3.16.5 presents the mitigation monitoring, compliance, and reporting information, and Section 3.16.6 lists references cited in this section. Chapter 4 describes the environmental impacts of the alternatives to the Proposed Project. Cumulative impacts for all disciplines are considered in Section 5.

No comments were received during the scoping period related to population and housing in relation to the Proposed Project.

3.16.1. Environmental Setting

The existing I-C subtransmission lines and the proposed upgrade route crosses unincorporated areas of Inyo, Kern, and San Bernardino Counties, the City of Barstow, and the following Census Designated Places (CDPs):[1] Wilkerson CDP; Big Pine CDP; Lone Pine CDP; Olancha CDP; and Inyokern CDP. The Proposed Project also would be located near, but not within, the City of Bishop, and the CDPs of West Bishop; Independence, and Pearsonville, as well as the Bishop, Big Pine, Lone Pine, and Fort Independence Reservations. The proposed route would not run through any Reservation lands.

The Proposed Project would cross through Inyo, Kern, and San Bernardino Counties, including the City of Barstow and the CDPs listed in Table 3.16-1. The northern end Segment 1 begins near the City of Bishop. Segments 1 and 2 lie within Inyo and Kern Counties. Segments 3N and 3S are located entirely within San Bernardino County. In addition, Segment 1 of the Proposed Project is located in the general vicinity of (not within) the four Reservations listed in Table 3.16-1.

3.16.1.1. Population Profile

The majority of the population in Inyo, Kern and San Bernardino counties, and all non-Reservation locations near the Proposed Project, identify as white and non-Hispanic. A majority of people within the four Native American reservations near the Proposed Project identify as American Indian and Alaska Native (AIAN).

Population data from the California Department of Finance (CDF, 2023) are presented in Table 3.16-1 (Population, Housing, and Employment). All geographic areas experienced either no change or an increase in population, except for the West Bishop and Pearsonville CDPs, which lost population over the decade from 2000 to 2010. By 2045, the population of Inyo County is expected to decrease by 5 percent from 18,094 to 17,204. The populations of Kern and San Bernardino Counties is expected to increase by 20 percent and 14 percent, respectively, from 2023 to 2045 (CDF, 2023).

[1] Census-designated places (CDPs) are communities that lack separate municipal governments, and for statistical purposes are defined by the Census Bureau in order to statistically combine and compare populated areas that physically resemble incorporated places.

3.16.1.2. Housing Profile

Data on the number of housing units and rental vacancy rates for each of the locations is presented in Table 3.16-1. Information was collected for the individual jurisdictions and census tracts potentially affected by the Proposed Project. Jurisdictional and census tract boundaries are not necessarily coincident; a jurisdiction may include many census tracts, and individual tracts may cross municipal boundaries.

As shown in Table 3.16-1, vacant rental units are available across the length of the Proposed Project. Short-term lodging along the Proposed Project is also available at hotels and motels in Bishop, Ridgecrest, and Barstow, as well as in the Big Pine and Lone Pine areas. For areas in the vicinity that the Proposed Project would cross through, the housing vacancy rate ranges from 0 to 7.6 percent. For temporary housing, there are hotels, motels, and lodges available in Bishop, Lone Pine, Big Pine, Inyokern, Ridgecrest, and the City of Barstow.

Table 3.16-1 (Population, Housing, and Employment) summarizes existing population, housing, and employment in the counties and communities crossed by the Proposed Project or located nearby.

Table 3.16-1. Population, Housing, and Employment

Location	Population	Housing Units		Employment	
	County, City, CDP	Total Units	Rental Vacancy Rate[1]	Total Employed[1]	Unemployment Rate[1]
Counties					
Inyo County	18,896[2]	9,527[2]	3.5%	8,356	2.5%
Kern County	907,476[2]	308,365[2]	4.0%	353,637	5.1%
San Bernardino County	2,182,056[2]	747,011[2]	3.3%	934,832	4.5%
Cities					
City of Barstow	24,918[2]	9,623[2]	6.0%	8,056	5.7%
City of Bishop	3,872[2]	1,958[2]	3.2%	1,971	2.2%
Census Designated Places (CDP)[3]					
West Bishop	2,607	1,229	4.2%	2,149	1.5%
Lone Pine	2,035	1,004	7.1%	1,397	5.4%
Big Pine	1,756	871	6.3%	1,208	3.2%
Independence	669	389	6.1%	523	2.0%
Wilkerson	563	265	4.3%	395	7.0%
Olancha	192	97	2.9%	222	0%
Pearsonville	17	16	0%	7	NA[4]
Inyokern	1,099	537	5.7%	529	0%
American Indians and Alaska Natives (AIAN)[3]					
Bishop Reservation	1,588	602	7.6%	NA[4]	NA[4]
Big Pine Reservation	499	202	7.3%	NA[4]	NA[4]
Lone Pine Reservation	212	102	0%	NA[4]	NA[4]
Fort Independence Reservation	93	49	0%	NA[4]	NA[4]

Sources:
1- U.S. Census Bureau, 2017-2021 ACS 5-Year Data Profile (https://www.census.gov/acs/www/data/data-tables-and-tools/data-profiles/2021/)
2- California Department of Finance, City and County Population and Housing Estimates, January 1, 2023 (https://dof.ca.gov/forecasting/demographics/estimates-e1/).
3- SCE 2020.
4- NA= Not available; separate employment data not provided for AIANs.
5- 2014 Inyo County Housing Element Update

3.16.1.3. Population Growth

Population estimates, future population projections, and average annual growth rates for Inyo, Kern, and San Bernardino Counties are summarized in Table 3.16-2 (Population Estimates and Projections). The population is expected to increase in Kern and San Bernardino Counties and is expected to decrease in Inyo County.

Table 3.16-2. Population Estimates and Projections

	Inyo County	Kern County	San Bernardino County
Population, 2023	18,094	939,622	2,234,540
Projected Population, 2025	18,055	961,629	2,273,291
Projected Population, 2035	17,864	1,075,952	2,456,262
Projected Population, 2045	17,204	1,174,771	2,611,160

Source: California Department of Finance. Demographic Research Unit. Report P-2A: Total Population Projections, California Counties, 2010-2060 (Baseline 2019 Population Projections; Vintage 2020 Release). Sacramento: California. July 2021., http://www.dof.ca.gov/Forecasting/Demographics/Projections/

3.16.2. Applicable Regulations, Policies, and Standards

3.16.2.1. Federal Regulations, Policies and Standards

There are no federal regulations, policies, or standards applicable to the Proposed Project with respect to population and housing

3.16.2.2. State Regulations, Policies and Standards

There are no California regulations, policies, or standards applicable to the Proposed Projects with respect to population and housing.

3.16.2.3. Local Regulations, Policies and Standards

Pursuant to General Order 131-E, the Project is not subject to local land use authority because the CPUC has exclusive jurisdiction over the siting, design and construction of electric power line projects, distribution lines, substations, and electric facilities constructed by public utilities subject to CPUC jurisdiction.

There are no local regulations, plans, or standards known to apply to the Proposed Project with respect to population and housing. Because this project is replacing infrastructure, local regulations, plans, or standards that are applicable to population and housing are not applicable to this Project. However, to compare the local jurisdictions' plans regarding population growth to the Project, the estimates for this are included here.

- Kern County estimates a population growth to 1,186,600 by 2045
- San Bernadino County estimates a population growth to 2,637,400 by 2040
- Inyo County estimates a population growth to 17,204 by 2045

Local plans are considered by the CPUC in determining the Proposed Project's consistency with local plans, goals, and policies. As the CPUC has preemptive jurisdiction over the construction, maintenance, and operation of public utilities on non-federal lands in the state, no local discretionary permits (e.g., conditional use permits) or local plan consistency evaluations are required for the Proposed Project. However, SCE would be required to obtain all ministerial building and encroachment permits from local jurisdictions.

3.16.3. Environmental Impacts of the Proposed Project

3.16.3.1. Impact Analysis Approach

Population data generated by the California Department of Finance (CDF) provides an estimated forecast for population demographics in the Proposed Projects' region through 2045. Population and housing data from the CDF includes population estimates information on the estimated number of housing units available as of January 1, 2023 (see Table 3.16-1). Vacancy rate estimates are provided based on U.S. Census Bureau data ACS 5-Year Data Profile from 2017-2021 (see Table 3.16-1). Using these data, potential impacts on population and housing were evaluated according to the following significance criteria as defined based on the checklist questions in Appendix G of the CEQA Guidelines.

SCE proposed no Applicant Proposed Measures (APMs) related to housing and population, and no APMs relevant to other issue areas are addressed in this section.

3.16.3.2. Impact Significance Criteria

Appendix G of the CEQA Guidelines identifies two questions to consider when evaluating population and housing impacts. These are whether the Project would:

- Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure) (Impact PH-1)
- Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere (Impact PH-2)

3.16.3.3. Impacts and Mitigation Measures

This section provides a discussion of impacts applicable to the entire Proposed Project. It is not presented by segment, because the impacts do not vary geographically by segment. The Cal City Options defined in Section 2.1.1 and illustrated in Figure 2-2 would have impacts no different from those defined for Impacts PH-1 and PH-2. The extent and area of ground disturbance required for the Proposed Project would be the same as that required for any of the Cal City Options.

Impact PH-1: Induce substantial population growth in an area, either directly or indirectly.

The Proposed Project would be considered growth-inducing if it fostered growth in population above what is assumed in local and regional land use plans or in projections made by regional planning authorities. Growth impacts also could occur if the Project provided infrastructure or service capacity above existing levels, designed to accommodate growth levels beyond those identified by local or regional plans and policies.

Construction

NO IMPACT. The Proposed Project would involve construction of replacement segments for existing sub-transmission line infrastructure between the existing substations in Inyo, Kern, and San Bernardino Counties. The Project would require construction of new facilities in Segments 1 and 2 (followed by the subsequent removal of the existing older facilities). In Segments 3N and 3S, the Project would require replacement of certain structures along the existing corridor, and installation of new or upgraded equipment at existing substations.

The construction workforce would be made up of SCE's existing staff or staff employed by contractors to SCE. Contractor employees working on a major construction effort would typically rotate in and out of the project area, working and living temporarily in the project area. Due to the short-term nature of construction activities, construction efforts are not anticipated to result in workers permanently relocating to

the area. Local construction needs (e.g., materials, hauling or recycling services, and equipment servicing) would be met with available local workforce in Inyo, Kern, and San Bernardino Counties.

The Project would not foster population growth above what is assumed in the local and regional land use plans or in projections made by regional planning authorities. As shown in Table 3.16-2 (Population Estimates and Projections), the California Department of Finance estimated the population to grow in Kern and San Bernardino Counties and decrease in Inyo County. The population estimates identified by the Inyo and Kern Counties respective regional transportation plans and the San Bernardino Countywide plan are consistent with the Department of Finance estimates. The Project would not create new housing, the need for housing, or bring permanent construction or maintenance workers. Because there would be no population growth anticipated there would be no population growth anticipated above what is already assumed in local or regional plans or projections.

The Project would not result in the construction of any housing or commercial buildings. For the reasons described above, project construction would not result in population growth. No impact would occur.

Operations and Maintenance

NO IMPACT. There would be no change in SCE's permanent staffing levels required to maintain the upgraded transmission lines or upgraded substations. Therefore, no population growth would occur as a result of the operation of the Proposed Project, and no impact would occur.

Impact PH-2: Displace a substantial number of existing people or housing.

Construction

NO IMPACT. Nearly the entire Proposed Project would be in an existing transmission ROW, designated for use by existing transmission lines and compatible uses such as parks or parking lots. With regard to displacing residences, the Proposed Project would be implemented on land unoccupied by buildings and no housing or buildings would be removed. The Proposed Project would not displace any housing and would not result in the need for new replacement housing. There would be no impact.

It is anticipated that there would be a total of approximately 200 construction workers on any given day. As described in Table 2-11 (Section 2), construction workers are employed for specific tasks and would work for short periods of time in each location along the length of the 262-mile ROW. Construction workers may temporarily occupy rental properties during the construction process. More commonly, they would stay in extended-stay hotels or trailer parks.

As shown in Table 3.16-1, in 2023, the overall rental vacancy rates in Inyo, San Bernardino and Kern Counties were 3.5, 3.3 and 4.0 percent, respectively (US Census Bureau, 2023).

In Inyo County, with a total number of housing units at 9,527, there would be over 300 vacant housing units. In Kern and San Bernardino Counties, which have 308,365 and 747,011 total housing units respectively, there would be over 12,000 vacant rental units in Kern County, and 24,000 vacant rental units in San Bernardino County. Therefore, there would be enough housing units in the vicinity of the Proposed Project that can accommodate the estimated 200 temporary construction workers required for the Proposed Project, whether they choose to rent a housing unit or stay at a hotel or trailer park.

In conclusion, the construction of the Proposed Project would not displace a substantial number of people from housing, and there would be no impact.

Operations and Maintenance

NO IMPACT. There would be no change in SCE's permanent staffing levels required to maintain the upgraded transmission lines or upgraded substations. Therefore, no displacement of people from existing housing would occur as a result of the operation of the Proposed Project. No impact would occur.

3.16.4. Mitigation Monitoring, Compliance, and Reporting

No mitigation measures are recommended for impacts to population and housing.

3.16.5. References

CDF (California Department of Finance). 2023. City and County Population and Housing Estimates. Available: https://dof.ca.gov/forecasting/demographics/estimates-e1/. Accessed January 16, 2025.

CDF. 2021. Report P-2A: Total Population Projections, California Counties, 2010-2060 (Baseline 2019 Population Projections; Vintage 2020 Release). Available: http://www.dof.ca.gov/Forecasting/Demographics/Projections/. Accessed January 16, 2025.

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U.S. Census Bureau. 2023. Quick Facts. Available: https://www.census.gov/quickfacts/fact/table. Accessed July 6, 2023.

U.S. Census Bureau. 2021. 2017-2121 ACS 5-Year Data Profile. Available: https://www.census.gov/acs/www/data/data-tables-and-tools/data-profiles/2021/. Accessed December 16, 2024.

SCE. (Southern California Edison). 2020. Ivanpah-Control Project Proponent's Environmental Assessment. https://ia.cpuc.ca.gov/environment/info/aspen/ivanpah-control/ivanpah-control.htm.

3.17. Public Services

This section describes existing environmental conditions and anticipated impacts associated with the Proposed Project related to public services. Impacts evaluated in this section include the potential need for new or additional public services including police, fire services, schools, and hospitals and whether project construction could impede the provision of these services. Section 3.18 (Recreation) evaluates potential effects to parks, and Section 3.20 (Utilities and Service Systems) evaluates potential effects on pipelines, water supplies, wastewater, and other forms of waste.

The environmental setting is presented in Section 3.17.1 and relevant regulations and standards are summarized in Section 3.17.2. Section 3.17.3 describes the impacts on the environment associated with implementation of the Proposed Project. Where applicable, these impact discussions introduce mitigation measures that would reduce or avoid significant adverse environmental impacts. Section 3.17.4 presents the mitigation monitoring, compliance and reporting information, and Section 3.17.5 lists references cited in this section. Chapter 4 describes the environmental impacts of the alternatives to the Proposed Project. Cumulative impacts for all disciplines are considered in Section 5.

One scoping comment was received during the scoping process that raised concern with safety hazards associated with the use of helicopters during construction. This comment is addressed in Section 3.17.3.

3.17.1. Environmental Setting

3.17.1.1. Regional Setting

The study area for public services includes the cities and counties located along the right-of-way where the Proposed Project is implemented. The Project is within San Bernardino, Inyo, and Kern Counties. Incorporated cities within the study area include the cities of Barstow, California City, and Ridgecrest. Unincorporated areas in the vicinity of the Proposed Project include West Bishop, Big Pine, Independence, Lone Pine, Wilkerson, Olancha, Pearsonville, Inyokern, Randsburg, and Daggett. In addition to unincorporated and city land, the Proposed Project would run through or adjacent to private land and lands managed by Bureau of Land Management (BLM) and owned by the Los Angeles Department of Water and Power (LADWP).

Regional and local public services information is presented in Section 3.17.1.2. Current information about public services was provided in SCE's Proponent's Environmental Assessment (PEA; SCE, 2020) and collected from planning documents or other published information from the jurisdictions in the study area.

3.17.1.2. Environmental Setting by County

The Proposed Project would require a total of approximately 200 construction personnel per day along the 262-mile right-of-way (ROW). Construction would be performed by either SCE construction crews or contractors. If SCE construction crews are used, they would typically be based at SCE's local facilities (e.g., service centers, substations, power plants, and transmission ROW) or at temporary material staging yards set up for the Project. Contractor construction personnel would be based out of the contractor's project yards or temporary material staging yards set up for the project, and contractors would be managed by SCE.

SCE anticipates that multiple project crews would work concurrently whenever possible, but the number of workers/crews would vary depending on project activities and other factors such as material availability, resource availability, and construction scheduling.

The project is divided into four segments (see Figure 1-1, Proposed Project Route and Segments, Chapter 1). The 262-mile route begins at the Control Substation, about 5 miles west of the city of Bishop in Inyo County and ends at the Coolwater Substation in San Bernardino County, approximately 9 miles east of Barstow. The public services in the vicinity of the Project were identified through the review of general and comprehensive plans, county and city websites, school district websites, and aerial imagery. The public

services that would support the Proposed Project are discussed for the four segments in Inyo, Kern, and San Bernardino Counties.

Inyo County (Segment 1)

Segment 1 is 126 miles long; the majority (115 miles) is within Inyo County and the southernmost approximately 11 miles are in Kern County. Table 3.17-1 identifies public services in Inyo County. Each type of service is described in the following sections. While the Project is outside of the City of Bishop, the Control Substation and the northernmost few miles of the subtransmission line are within 3 to 5 miles of the city, and emergency services may be provided by City first responders.

Table 3.17-1. Public Services in Inyo County (Segment 1)

Service Type / Service Provider	Approximate Distance to the Proposed Project Alignment
Fire Services	
USFS White Mountain Ranger Station	2.0 miles
USFS Bishop Air Tanker Reload Base	2.5 miles
City of Bishop Volunteer Fire Department – Station 2 West Ridge City of Bishop Fire Station One and Fire Station Two	2.4 miles
Big Pine Volunteer Fire Department	0.8 miles
USFS Independent Helitack Base	2.5 miles
Independence Volunteer Fire Department	2.5 miles
Lone Pine Volunteer Fire Department	0.9 miles
Olancha-Cartago Volunteer Fire Department	0.8 miles
China Lake Federal Fire Department	1.0 miles
Law Enforcement	
Inyo County Sheriff's Office, Bishop Substation	3.0 miles
Inyo County Sheriff's Office, Lone Pine Substation	1.0 miles
City of Bishop Police Department	3.0 to 5.0 miles
Schools	
Big Pine K-8 Elementary School and Big Pine High School	0.6 miles
Lone Pine High School	0.9 miles
Lo-Inyo Elementary and Middle School	0.9 miles
Lone Pine Adult School and High School	0.9 miles
Hospitals	
Northern Inyo Hospital, Bishop	3.0 miles
Southern Inyo Hospital, Lone Pine	0.6 miles

Fire Services

Volunteer Fire Departments provide fire protection services to Inyo County and the City of Bishop. Within Inyo County and in the vicinity of the project alignment, there are five fire protection districts (FPDs): Bishop FPD, Big Pine FPD, Independence FPD, Lone Pine FPD, and Olancha-Cartago FPD (MJHMP, 2017).

The Interagency Fire Management Organization (IFMO), which was formed by the BLM Bishop Field Office and the Inyo National Forest fire organization, also provides support to this area. Its management area includes the public land of the Inyo National Forest and the BLM Bishop Field Office in Inyo and Mono Counties. The IFMO maintains eight fire stations with nine engines, seven fire prevention patrol units, two

water tenders, a 10-person hand crew, 20-person hotshot crew, an air tanker reload base, and a helitack base (MJHMP, 2017).

Listed below are the primary USFS support facilities within Inyo County.

- Inyo National Forest White Mountain Ranger Station. Located in Bishop, this station has a Type 3 wildland engine, two fire prevention patrol units, one 20-person Boundary Peak Hotshot crew, a District Fire Management Officer, and an Assistant District Fire Management Officer.
- Bishop Air Tanker Reload Base. Located at the Eastern Sierra Regional Airport, this base is capable of reloading nearly all air tankers in service today, with the exception of the Very Large Air Tankers (VLATs) such as the DC-10 and Boeing 747. The base is operated on an as-needed basis but also hosts a Single Engine Air Tanker (SEAT) during the summer.
- Independence Helitack Base. Located at the north end of Independence, this base is the home of the Helicopter 525, a Type 3 ship.

Also located in Bishop are various "Fire Overhead" personnel – fire planners, Forest Fire Management Officers, Interagency Mitigation/Education Specialist, and other support personnel. These employees support the Forest Service and BLM and manage the overall direction of the interagency fire program for the area.

The China Lake Federal Fire Department (CLFD) is also located in proximity to southern Inyo County and would be available to offer fire support services if needed.

Law Enforcement

Table 3.17-1 lists the law enforcement locations in proximity to Segment 1 of the Proposed Project alignment. The Inyo County Sheriff's Office (ICSO) provides public safety services to the unincorporated areas of Inyo County. The ISCO employs approximately 100 people, with substations in Bishop and Lone Pine, between one and three miles from the Proposed Project alignment.

Schools

In Inyo County, there are five school districts, four of which are crossed by the Proposed Project alignment. Table 3.17-1 lists schools within one mile of the project alignment, including elementary schools and high schools.

Hospitals

There are two hospitals located in Inyo County in proximity to the Proposed Project alignment. The two hospitals are located in Bishop and Lone Pine.

Kern County (Segments 1 and 2)

Approximately 11 miles of Segment 1 and 26 miles of Segment 2 run through northeastern Kern County.

Fire Services

The Kern County Fire Department (KCFD) has stations located in Inyokern (Segment 1) and Randsburg (Segment 2).

Law Enforcement

The Kern County Sheriff's Office (KCSO) provides public safety services to unincorporated Kern County. The KCSO employs more than 1,400 people and has 14 substations; none of the KCSO substations are in the vicinity of the Proposed Project alignment.

Schools

Kern County has two schools located within a few miles of the Proposed Project alignment; no schools in Kern County are located within one mile of the proposed alignment.

Hospitals

There is one hospital located in Kern County in proximity to the Proposed Project alignment. Ridgecrest Regional Hospital would serve emergency needs on Segment 2; it is located about 7 miles from the Project alignment.

San Bernardino County (Segments 3N and 3S)

Fire Services

Segment 3S is routed through the San Bernardino County and the City of Barstow. Within the City of Barstow, fire services are provided by the City of Barstow Fire Protection District (CBFPD). Segments 3N and 3S cross a portion of the Marine Corps Logistics Base (MCLB) Barstow. Emergency services on MCLB are provided by the Fire and Emergency Services Division (FMSD); the FMSD serves the MCLB along with local community residents and travelers on I-40 and I-15. The San Bernardino County Fire Department (SBCFD) provides fire protection services along Segments 3N and 3S of the Proposed Project alignment. The SBCFD provides fire, safety, and emergency medical services to more than 60 communities and cities and all unincorporated areas of the county.

Table 3.17-2 provides a list of the fire stations in the vicinity of Segments 3N and 3S of the Proposed Project.

Table 3.17-2. Fire Stations in San Bernardino County Proximate to Proposed Project Alignment

Project Segment	Name	Location	Distance to the Proposed Project Alignment (miles)
3N	MCLB Barstow Fire Station 2	MCLB, Yermo	0.9
3S	MCLB Barstow Fire Station 1	MCLB, Barstow	0.9
3S	Barstow Fire Protection District	Barstow	1.7
3S	Barstow Fire Protection District, Station #363	Barstow	0.1

Law Enforcement

The San Bernardino County Sheriff's Department (SBCSD) employs 3,800 people and has 15 patrol stations and serves over 2.1 million people in San Bernardino County.

The Barstow Police Department serves 40 square miles from one police station with 40 police officers.

The Proposed Project alignment also crosses through the MCLB Barstow (Yermo and Nebo annexes) and is served by the Marine Corps Police Department. Table 3.17-3 provides a list of law enforcement stations that are proximate to the Proposed Project alignment.

Table 3.17-3. Law Enforcement Stations in San Bernardino Counties Proximate to the Proposed Project Alignment

Project Segment	Name	Location	Distance to the Proposed Project Alignment (miles)
3S	Barstow City Police Department	Barstow	~2.0
3S	Marine Corps Police Department (MCLB)	Barstow	~1.0
3S	SBCSD Barstow Patrol Office	Barstow	~2.0

Schools

San Bernardino County has 2 schools located within one mile of the Proposed Project alignment. Table 3.17-4 lists the schools within one mile of the Proposed Project alignment in San Bernardino County.

Table 3.17-4. Schools in San Bernardino County within One Mile of the Proposed Project Alignment

Project Segment	Name	Location	District	Grades	Distance to Project Alignment (miles)
3N	Silver Valley High School	Yermo	Silver Valley Unified School District	9-12	~0.4
3S	Barstow Community College	Barstow	Barstow Unified School District	Two-year college	~0.6

Hospitals

There is one hospital located in San Bernardino County in proximity to the Proposed Project alignment. Barstow Community Hospital would serve emergency needs for Segments 3N and 3S; it is located about 2 miles from the Project alignment.

3.17.2. Applicable Regulations, Policies, and Standards

3.17.2.1. Federal Regulations, Policies and Standards

43 Code of Federal Regulations (C.F.R.) §9212.2

This regulation requires the BLM to establish fire prevention orders to assist with wildland fire prevention. These efforts will also complement and support State and local wildfire prevention efforts throughout the geographic area. This area consists of public lands within the California Desert Conservation Area (CDCA) and public lands outside the CDCA in Los Angeles, San Bernardino, Riverside and San Diego Counties.

Interagency Standards for Fire and Fire Aviation Operations

The Interagency Standards for Fire and Fire Aviation Operations states, references, or supplements policy for Bureau of Land Management (BLM), U.S. Forest Service (USFS), U.S. Fish and Wildlife Service (FWS), National Park Service (NPS), and Bureau of Indian Affairs (BIA) fire and fire aviation program management. The Interagency Standards for Fire and Fire Aviation Operations provides fire and fire aviation program management direction for BLM, USFS, FWS, NPS, and BIA managers.

3.17.2.2. State Regulations, Policies and Standards

California Fire Code (CCR Title 24, Part 9)

The California Fire Code is based on the International Fire Code from the International Code Council and contains consensus standards related to establishing good practices to safeguard the public health, safety, and general welfare from the hazards of fire, explosion, or dangerous conditions in new or existing buildings, structures, and premises. The California Fire Code requires fire apparatus access roads to have a minimum unobstructed width of 20 feet. Other state regulations are related to health, fire, and building safety. These regulations include the California Health Code, the California Fire Code, and the Uniform Building Code (UBC), which are implemented at the local level by ordinances.

Fire Prevention Standards for Electric Utilities

The Fire Prevention Standards for Electric Utilities (CCR Title 14, Sections 1250-1258) provide definitions, maps, specifications, and clearance standards for applying the requirements of PRC Sections 4292-4296 to projects in SRAs under the jurisdiction of CAL FIRE.

California Government Code §4216 through 4216.9

Article 2 of this law requires that an excavator must contact a regional notification center (Underground Service Alert) at least two working days prior to excavation of any subsurface installation. Underground service alert will notify the utilities that may have buried installations in the area. Representatives of the operator of the buried installations are required to mark the specific location of their facilities within the work area prior to the start of project activities in the area.

California Public Resources Code Sections 4292 and 4293

PRC 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 PRC 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. PRC 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.

3.17.2.3. Local Regulations, Policies and Standards

Pursuant to General Order 131-E, the Project is not subject to local land use authority because the CPUC has exclusive jurisdiction over the siting, design and construction of electric power line projects, distribution lines, substations, and electric facilities constructed by public utilities subject to CPUC jurisdiction. Local ordinance policies and requirements are listed in Table 3.17-5 only where these requirements are used as the basis for impact analysis.

Table 3.17-5. Local Land Use Documents Related to Public Services

Document	Plans, Policies, Programs
Inyo County and City of Bishop Multi-Jurisdictional Hazard Mitigation Plan (Inyo County, 2017)	**Goal: Hazard Mitigation Actions for Wildfire** **Plan 11.1:** Work with property owners to ensure a buffer of defensible space around all buildings and key structures. **Plan 11.3:** Support efforts to reduce the risk of wildfire through preventative measures on federal, state, and LADWP land, with an emphasis on the Inyo National Forest and surrounding land. **Plan 11.4:** Identify areas near residences or key facilities with potential access difficulties for fire equipment, and work with landowners to reduce or remove access barriers. **Plan 11.7:** Share information about fire risks to electricity and water infrastructure with LADWP. Encourage and support any efforts to harden existing vulnerable backup infrastructure or to establish backup electricity and water infrastructure outside of high fire hazard zones.
City of Barstow General Plan, Safety Element (City of Barstow, 2015)	**Public Safety Policy 1A:** Increase police and fire staffing levels at an equal or greater rate than the City's overall population, household and employment growth. **Policy 2A:** Review all new development proposals, as well as significant remodeling projects to determine potential impacts to public safety and the provision of police and fire protection services. **Emergency Preparation Policy1A:** Periodically update the Emergency Operations Plan and implement the plan's provisions on an ongoing basis. **Policy 3.1:** Consider and assess vulnerability to natural and manmade disasters or emergencies when reviewing proposals for the siting and development of public/quasi-public facilities such as schools, water towers and power and communication transmitters.

Document	Plans, Policies, Programs
Kern County General Plan, Safety Element 4.6 Wildland and Urban Fire (Kern County, 2009)	**Policy 1:** Require discretionary projects to assess impacts on emergency services and facilities **Policy 4:** Ensure that new development of properties have sufficient access for emergency vehicles and for the evacuation of residents. **Policy 5:** Require that all roads in wildland fire areas are well marked, and that homes have addresses prominently displayed. **Policy 6:** All discretionary projects shall comply with the adopted Fire Code and the requirements of the Fire Department.
San Bernardino General Plan, Safety Element, Fire (SBC, 2020)	**Policy S 3.2:** The County will endeavor to prevent wildfires and continue to provide public safety from wildfire hazards. **Policy S 9.2:** Ensure that future developments have no less than two points of access for emergency evacuation and for emergency vehicles, in the event of wildland fires and other natural disasters
County of San Bernardino General Plan, Circulation and Infrastructure, Fire Protection (SBC, 2020)	**Policy CI 16.1:** Continue the consolidation efforts of the Fire Department to maintain the continued operation, services, facilities, and current infrastructure but also to ensure the provision of operations, services, facilities, and internal infrastructures into the future.

3.17.3. Environmental Impacts of the Proposed Project

3.17.3.1. Impact Analysis Approach

This section considers the potential impact to and disruption of public services within the jurisdictions through which the Proposed Project would cross.

Applicant Proposed Measures

SCE did not present any Applicant Proposed Measures (APMs) specific to public services; however, SCE proposes to implement three APMs that are related to public services to ensure the Proposed Project would be constructed and operated with minimal environmental impacts in a manner consistent with applicable rules and regulations. Implementation of these APMs is considered part of the Proposed Project for purposes of the evaluation of environmental impacts. Table 3.17-6 presents the APMs relevant to public services.

Table 3.17-6. Applicant Proposed Measures – Public Services

APM	Description
Public Services	
HAZ-1	**Prepare a Hazardous Materials Management Plan.** SCE will prepare and implement a project specific Hazardous Materials Management Plan (HMMP), during project construction. The plan 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, PPE training, and release reporting requirements. It will also include fueling and maintenance procedures for helicopters and construction equipment. If on site refueling is necessary, BMPs shall be implemented in accordance with the project SWPPP. All construction personnel, including environmental monitors, will be made aware of state and federal emergency response reporting guidelines for accidental spills.

APM	Description
HAZ-3	**Prepare and Implement a Fire Management Plan.** A Fire Prevention and Emergency Response Plan would be developed to ensure the health and safety of construction workers, SCE personnel, and the public during Project construction. The Plan shall cover: ■ The purpose and applicability of the plan ■ Responsibilities and duties ■ Project areas where the plan applies ■ Procedures for Red Flag warning days ■ Procedures for fire reporting, response, prevention, and evacuation routes ■ Coordination procedures with federal and local fire officials ■ Crew training, including fire safety practices and restrictions ■ Fire suppression and communication equipment required to be on hand during construction ■ Method for verification that Plan protocols and requirements are being followed Post-construction fire prevention and response measures. The Project-specific Fire Prevention and Emergency Response Plan for construction of the project shall be prepared by SCE and submitted to CPUC, BLM, CALFIRE, Inyo, Kern and San Bernardino Counties, and local municipal fire agencies for review at least 30 days prior to initiation of construction. SCE shall address all comments received from reviewing agencies and provide the final Fire Prevention and Emergency Response Plan to reviewing agencies for approval prior to initiating construction activities.
TRA-1	SCE shall 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 is a member of the California Inter-Utility Coordinating Committee, which published the Manual on Uniform Traffic Control Devices, as amended for the state of California (CA MUTCD; CALTRANS, 2024) and using standard templates from the California Temporary Traffic Control Handbook. (CATTCH, 2018) This handbook was previously known as the California Joint Utility Traffic Control Manual. (CJUTCM, 2010) SCE will follow the recommendations in this manual regarding basic standards for the safe movement of traffic on highways and streets in accordance with Section 21400 of the CVC. These recommendations include provisions for safe access of police, fire, and other rescue vehicles.

3.17.3.2. CEQA Significance Criteria

Based on to the CEQA Appendix G Environmental Checklist significance criteria for assessing the impacts to public services, a project causes a potentially significant impact if it 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 any of the public services (**Impact PS-1**)

3.17.3.3. Impacts and Mitigation Measures

As discussed below, the Proposed Project would not affect service ratios, response times, or other objectives for public services in the area. Fire, emergency, and police services would continue in the areas in which the existing and proposed rebuilt transmission lines are located.

It is not anticipated that the Proposed Project would adversely affect the use or operation of any public services or facilities in the vicinity of the Proposed Project alignment, including schools, fire, and police protection services, emergency services, hospitals and emergency services, or other public services. Construction of the Proposed Project would not generate the need for new or additional public services such as school or other facilities because it would not result in construction of residential or other land uses that would directly or indirectly induce population growth in the area. Therefore, less than significant impacts on public services are anticipated during construction of the Proposed Project.

The Cal City Options defined in Section 2.1.1 and illustrated in Figure 2-2 would have impacts no different from those defined for Impact PS-1, because the effects of the Proposed Project would be the same as those of any of the Cal City Options.

Additional detail is provided below for fire, police, emergency services, schools, parks, and other public facilities.

Impact PS-1: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives.

Construction

Construction of the replacement subtransmission facilities would require activities occurring along the length of the I-C Project corridor. As described in EIR Chapter 2 (Project Description), SCE would establish temporary staging yards used as reporting locations for workers, vehicle and equipment parking, and material storage; modify existing substations; rehabilitate and construct new access and spur roads; prepare laydown/work areas for the new structure pad locations; grade and clear vegetation for each structure pad location; and install foundations, structures, and conductors.

Fire and Emergency Response. *LESS THAN SIGNIFICANT WITH MITIGATION*. Portions of the Proposed Project are located in a high or moderate fire hazard safety zones, as described in Section 3.21, Wildland Fire. Construction activities would include ignition sources as well as a general increase in humans and human activity in areas of fire hazard and therefore would result in an increased risk of fire and potentially an increased need for fire protection services. However, the risk is reduced due to presence of the existing access roads and the maintenance activities (including vegetation management) implemented currently by SCE for the existing facilities (see EIR Section 2.5.1, Operations and Maintenance of Subtransmission Components).

Construction of the project and equipment may impede emergency access due to road closures, project use of fire and access roads, and potentially blocked property entrances during construction. SCE would apply for and obtain all necessary State, county, and local permits (e.g., traffic control, lane closure, and encroachment) for construction activities in or affecting a public street ROW, private roadway, or driveway. SCE has proposed APM TRA-1, Traffic Control Measures, to ensure that traffic controls are used. However, with implementation of APM TRA-1, there would be a significant impact, because the APM does not require that the traffic control measures be reviewed and approved by the affected jurisdictions and does not adequately reduce impacts to emergency service vehicles.

Mitigation Measure T-1b (Prepare traffic control plans) is recommended to supplement SCE commitments provided in APM TRA-1. This measure would require SCE to prepare Traffic Control Plans that would include measures to avoid disruptions or delays in access for fire and emergency service vehicles and to keep emergency service agencies fully informed of road closures, detours, and delays. Implementation of Mitigation Measure T-1b (Prepare traffic control plans) would ensure that emergency service providers are able to plan around construction and maintain their response times.

With implementation of APM TRA-1 and Mitigation Measure T-1b (Prepare traffic control plans), described above, the Proposed Project would not require the expansion of existing fire protection or emergency services. Although the need for emergency services may arise during construction of the Proposed Project, such a need would not substantially affect the provision of existing emergency services or require the provision of service beyond existing capacities. Proposed Project construction activities would not require the expansion of existing fire stations or fire protection services with implementation of the Fire Management Plan. With implementation of Mitigation Measure T-1b (Prepare traffic control plans), the impact would be less than significant.

Law Enforcement. *LESS THAN SIGNIFICANT.* The Inyo County Sheriff's Office (ICSO) provides public safety services to the unincorporated areas of Inyo County. There are two law enforcement substations within three miles of Segment 1 of the Proposed Project alignment located in Bishop and Lone Pine.

The Kern County Sheriff's Office (KCSO) provide public safety services to unincorporated Kern County. The KCSO employs more than 1,400 people and has 14 substations; none of the KCSO substations are in the vicinity of the Proposed Project alignment, Segment 2.

For Segments 3N and 3S, the San Bernardino County Sheriff's Department (SBCSD) employs operates 15 patrol stations with two substations located within two miles of the Proposed Project alignment. The Proposed Project alignment also crosses through the MCLB Barstow (Yermo and Nebo annexes) and is served by the Marine Corps Police Department located within one mile of the Proposed Project alignment.

The need for law enforcement services during construction would be unlikely, except in the event of an emergency. Staging yards would be illuminated at night for security purposes. Proposed Project construction activities would not require the expansion of existing police stations or services, therefore resulting in a less than significant impact.

Ambulance Services. *LESS THAN SIGNIFICANT.* The need for ambulance services may occur during the construction phase of the Proposed Project. This would be for work-related injuries. The number of such injuries is typically low and would not be anticipated to significantly affect the provision of existing ambulance services or require the provision of service beyond existing capacities, thereby resulting in a less than significant impact.

Schools. *NO IMPACT.* The construction workforce for transmission line projects is made up of specialty laborers who work on specific construction components (e.g., foundations, tower installation, conductor stringing). As a result, while construction lasts for several years, each set of workers is in each location for a period of weeks. Due to the temporary nature of the workforce, there would be no demand placed on public schools, so no impact would result.

Medical Facilities. *LESS THAN SIGNIFICANT.* Other public facilities, such as hospitals, are located within the project area, as discussed in Section 3.17.1.2. These facilities may be used during construction by workers who are injured on the job or become ill. However, the number of workers that would use these public facilities is likely to be small, especially as compared with the tourist population in Inyo County. Any demand increase for medical facilities would be small and short-term, resulting in a less than significant impact.

Operations and Maintenance

LESS THAN SIGNIFICANT. Because the Proposed Project is an upgrade of existing facilities, the impacts of the Proposed Project during operations and maintenance are anticipated to be the same as or substantially similar to the activities currently occurring with the existing facilities. Future operations and maintenance activities would require a similar workforce and a similar need for public services as currently occurs. Impacts would be less than significant.

Mitigation Measures for Impact PS-1

T-1b **Prepare traffic control plans.** (See full text included in Section 3.19.3.3.)

3.17.4. Mitigation Monitoring, Compliance, and Reporting

There are no new mitigation measures required for impacts to public services. Monitoring for Mitigation Measure T-1b (Prepare traffic control plans) is addressed in Section 3.19 (Transportation).

3.17.5. References

CATTCH (California Temporary Traffic Control Handbook). 2018. https://www.sce.com/sites/default/files/inline-files/tcm.pdf.

City of Barstow. 2015. City of Barstow General Plan, Safety Element. 2015-2020. https://www.barstowca.org/home/showpublisheddocument/5369/636607004831130000.

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Inyo County and City of Bishop Multi-Jurisdictional Hazard Mitigation Plan (MJHMP). 2017. https://www.inyocounty.us/sites/default/files/2019-07/12292017_InyoCountyMJHMP_FEMA_wAppendices.pdf.

Kern County General Plan. 2009. https://psbweb.kerncounty.com/planning/pdfs/kcgp/KCGP_Complete.pdf.

SBC (San Bernardino County). General Plan. 2020. Available: https://lus.sbcounty.gov/planning-home/general-plan/. Accessed January 22, 2025.

SCE (Southern California Edison). 2020. Ivanpah-Control Project Proponent's Environmental Assessment. https://ia.cpuc.ca.gov/environment/info/aspen/ivanpah-control/toc-amended_pea.htm.

3.18. Recreation

This section describes existing environmental conditions and the environmental impacts of the Proposed Project on recreational areas or resources. Impacts evaluated in this section include the potential for the Project to directly or indirectly disrupt activities in established recreational activities, reducing or blocking access to recreational areas, and damaging recreational resources during construction and operation.

A recreation area is any site or facility that is used by the public for recreational activities. Recreation areas can include national, state, county, or city parks; refuges or preserves; open space; cultural centers or museums; campgrounds; significant ecological areas; or private recreational sites such as golf courses.

The environmental setting for recreation is presented in Section 3.18.1 and relevant regulations and standards are summarized in Section 3.18.2. Section 3.18.3 describes the Proposed Project impacts on recreational facilities or opportunities. Section 3.18.4 presents the mitigation monitoring, compliance, and reporting information and Section 3.18.5 lists the references cited in this section. Chapter 4 describes the environmental impacts of the alternatives to the Proposed Project. Cumulative impacts are discussed in Chapter 5.

No scoping comments were received that related to recreational resources.

3.18.1. Environmental Setting

3.18.1.1. Regional Setting

The Proposed Project and alternatives are located within or adjacent to recreation areas under the jurisdiction of the Bureau of Land Management (BLM), National Park Service (NPS), U.S. Forest Service (USFS), California Department of Fish and Wildlife (CDFW), Los Angeles Department of Water and Power (LADWP), and San Bernardino, Inyo and Kern Counties. To identify recreation areas that could be affected by the Proposed Project and alternatives, general plans, master plans and information accessible online and in federal land management documents were used.

The Proposed Project would cross two types of federal lands: BLM land, and NPS land. The BLM manages public lands for multiple uses and sustained yield, to maximize opportunities for commercial, recreational, and conservation activities. All BLM land is available for recreation; however, some lands restrict the type of activities allowed. BLM lands are designated in a variety of ways, with some specifically recreation focused. For example, Special Recreation Management Areas (SRMAs) are designated for specific recreation opportunities. In addition, BLM has also defined Areas of Critical Environmental Concern (ACECs)[1] in the desert region, and the I-C Project passes through and adjacent to a number of them. ACECs are discussed in this section, because they are used for recreation, although ACECs are designated for areas where special management attention is needed to protect important historic, cultural, and scenic values, or other natural resources (BLM, 2023a). Additionally, BLM manages the Mojave Trails National Monument. The monument was designated in 2016 through Presidential Proclamation, to conserve, protect, and restore nationally significant cultural resources in the area (BLM, 2023b).

The National Park Service also manages federal public lands, and was established to protect natural and cultural resources, while providing for public use and enjoyment of these resources. Figure 3.18-1 (Overview of Recreation Areas) shows where BLM and NPS lands occur along the ROW.

The City of Los Angeles owns and operates the Los Angeles Department of Water and Power (LADWP), which owns approximately 250,000 acres in Inyo County, much of which is in the Owens Valley. Approximately 75% of LADWP-owned land in Inyo County is open to the public for recreational uses such as fishing, hiking,

[1] ACEC or "Areas of Critical Environmental Concern" are areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards (FLPMA Section 103 (a), 1976).

hunting, nature studies, and photography. LADWP only allows camping in designated campgrounds and only allows off-road vehicles on existing roads and trails. Hunting and fishing are allowed on LADWP land, except where posted (LADWP, 2023).

The following discussion describes the recreation facilities within about one quarter of a mile of the Proposed Project route. There is potential for indirect impacts up to one mile, since this is a reasonable distance for a visual impact to occur. Visual changes can affect the character of the recreation site, which is why this is considered. However, since this project is an existing transmission line, the long-term visual change will be minor, and the analysis will focus on direct impacts to recreational areas or facilities, which occur when the Project would directly affect a recreational resource, or when it can affect access, usually occurring within one quarter mile of the Project. Visual changes are analyzed in Section 3.2, Aesthetics.

3.18.1.2. Environmental Setting by Segment

The project spans Inyo, Kern and San Bernardino Counties, and the City of Barstow. The Project runs adjacent to several cities and communities, including Bishop, Big Pine, Independence, Lone Pine, Ridgecrest, and Baker. Recreational facilities in each segment are described in groups by the land management agency responsible for each facility.

The recreational resources along the Project ROW are illustrated as follows (maps are presented at the end of this section):

- Figure 3.18-2a (Recreation Areas, Segment 1 North), Figure 3.18-2b (Recreation Areas, Segment 1 Central), and Figure 3.18-2c (Recreation Areas, Segment 1 South) show recreation areas within Segment 1
- Figure 3.18-3 (Recreation Areas, Segment 2) shows recreation areas within Segment 2
- Figure 3.18-4 (Recreation Areas, Segments 3N and 3S) shows recreation areas within Segments 3N and 3S

Table 3.18-1 identifies the recreation areas that are located within one mile of the project vicinity but are outside of the Proposed Project ROW, but would not be directly affected by project construction, due to the distance between project activities and the recreational resources. These areas have the potential to be affected indirectly by project construction and operation, such as disruptions caused by noise, traffic, or dust. Table 3.18-2 identifies recreational facilities that are within the ROW and would be indirectly and directly affected by project construction, because the recreational resources overlap with the Proposed Project ROW. Direct impacts include physical impacts, such as disrupting access or causing a disturbance within a recreational area.

Table 3.18-1. Recreational Resources Within One Mile of the Ivanpah Control ROW (Outside of ROW)

Map #	Name	Land Mgmt. Entity	Distance from Proposed Project (miles)	Description
	Segment 1			
1	Sacatar Trail Wilderness Area	BLM	1.0	Wilderness area includes the eastern face of the Sierra Nevada, offers dispersed backcountry recreation and is primarily used for wildlife viewing, day hiking, and backpacking (BLM, 2025a).
2	Tinemaha Reservoir Viewing Area	BLM	0.2	Located about 9 miles south of Big Pine, this area provides visitors with a 360-degree view of the Owens Valley, where Tule Elk, birds, and diverse geology can be seen (BLM, 2025b).
3	Alabama Hills National Scenic Area	BLM	1.0	Located south of Lone Pine and designated as a National Scenic Area in 2019. Visitors to this site enjoy touring film sites, photography, rock climbing, horseback riding, mountain biking, camping, and stargazing (BLM 2025c).

Map #	Name	Land Mgmt. Entity	Distance from Proposed Project (miles)	Description
4	East Sierra SRMA	BLM	0.02	Located west of Olancha, this area is used mostly by locals to exercise, walk their dogs, ride horses, or hunt. Also provides opportunities to view wildlife and camp.
5	Cartago Wildlife Area	CDFW	150 ft.	A 218-acre wildlife area, located on the western shore of Owens Lake. This area is a popular recreation destination for wildlife viewing, birdwatching, photography, and hunting (CDFW, 2025).
6	Independence Creek Campground	Inyo County	0.7	Located west of Independence, this campground features a fishable stream running through the camp-ground. There are 25 camping spots, vault toilets, tables, grills, potable water and fire rings (Inyo County, 2025a).
7	Glacier View Campground	Inyo County	0.9	Located one-half mile north of Big Pine, campground contains 40 camping sites, restrooms, drinking water, tables, and grills (Inyo County, 2025b).
8	Diaz Lake Campground	Inyo County	0.8	South of Lone Pine, this campground contains 200 camping sites, grills, tables, drinking water, and restrooms. Diaz Lake has a boat launch and concession stand, and provides opportunities for fishing, water-skiing, and swimming (Inyo County, 2025c).
9	Spainhower Park	Inyo County	1.0	Formerly known as Lone Pine Park, this park includes a basketball court, tennis court, restrooms, horseshoe pits, picnic tables, drinking water, and a playground (Inyo County, 2025d).
10	Mendenhall Park	Inyo County	0.5	Located in Big Pine, Mendenhall Park offers a basketball court, picnic gazebo, play equipment, and horseshoe-pitching area (Inyo County, 2025e).
11	Owens Lake	LADWP	0.5	Located about 5 miles south of Lone Pine, the area is a popular destination for bird watchers with a wildlife viewing area and also has a historic site (LADWP, 2025).
12	Haiwee Reservoir Complex	LADWP	0.08	This area is about 4 miles south of Olancha, and is used as a viewpoint for bird and wildlife watching.
13	Eastern Sierra Visitor Center	Multiple Agencies	1.0	Staffed by a combination of Forest Service, National Park Service, Bureau of Land Management, and Eastern Sierra Interpretive Association employees. This visitors center provides information for nearby wilderness areas and campgrounds. This visitors center is located south of Lone Pine, which provides access to both Mt. Whitney and Death Valley (USFS, 2025).
14	Manzanar National Historic Site (NHS)	NPS	1.0	Designated as a National Historic Site in 1992, this site is historically important because it was used as a military-style internment camp for Japanese immigrants during World War II. Now, there is a visitors' center, bookstore, and several exhibits which show what life was like for detainees during this time (NPS, 2025a).
15	Mt. Whitney Golf Course	Private	1.0	This 9-hole golf course is located south of Lone Pine, and includes a large irrigation pond, stocked with largemouth bass, available for fishing (Mt. Whitney Gulf Club, 2025).
16	Boulder Creek RV Resort	Private	1.0	Located south of Lone Pine, this privately owned camping resort provides 77 RV hookup sites, tent camping, and rental cabins (Boulder Creek Mobile Home & RV, 2025).
17	Golden Trout Wilderness	USFS	0.5	Designated a wilderness area by Congress in 1978, this wilderness area provides opportunities for hiking, back-packing, and horse riding. Wilderness permits are required for overnight visits (USFS, 2023).

Map #	Name	Land Mgmt. Entity	Distance from Proposed Project (miles)	Description
	Segment 2			
	No recreational resources			
	Segment 3N			
18	Harper Dry Lake Wildlife Viewing Area	BLM	1.0	Located northwest of Barstow, this area provides opportunities for camping, off-highway vehicle (OHV) use, hunting, and fishing (BLM, 2023c).
19	Superior/Rainbow SRMA	BLM	0.5	Located northwest of Barstow, the primary uses in this SMRA are scenic touring, camping, hiking, equestrian riding, mountain biking, OHV trail riding, educational and scientific study, photography, picnicking, geo-caching, and celestial observation (BLM, 2025d).
20	Barstow/Calico Kampgrounds of America (KOA)	Private	0.4	This private campground is located east of Barstow and has 70 RV sites, full hookups, Wi-Fi, cabins, and tent sites (KOA, 2025).
	Segment 3S			
21	Robert A. Sessions Memorial Sports Park	City of Barstow	0.2	This facility, south of Barstow, includes six lighted ball fields, three soccer fields, volleyball courts, batting cages, and basketball courts (City of Barstow, 2025a).
22	Barstow Heights Park	City of Barstow	0.1	This small park, in Barstow, includes a grass field, picnic tables, and two playground structures (City of Barstow, 2025b).

Table 3.18-2. Recreational Resources Within the Ivanpah Control ROW

Map #	Name	Land Mgmt. Entity	Linear Miles/ Feet of Corridor Impacted	Description
	Segment 1			
27	Olancha Dunes SRMA and OHV Area	BLM	1.55 miles 8,179 feet	Located 2 miles east of Olancha, the SRMA includes an open OHV area. Recreational uses, in addition to OHV use, include dispersed camping, star gazing, and nature viewing.
28	Owens Lake ACEC	BLM	6.6 miles 34,848 feet	Located about 10 miles southeast of Lone Pine, includes significant historic and cultural values, including sensitive archaeological and cultural resources that are important to Native Americans and vulnerable to adverse change; and wildlife and plant resources including bird habitat of recognized national importance, sensitive species habitat and rare plant communities.
29	Olancha Greasewood ACEC	BLM	2.91 miles 15,379 feet	Located east of Olancha and south of Owens Lake, this ACEC overlaps with the Olancha Dunes SRMA. This ACEC protects an Unusual Plant Assemblage (UPA) and is managed for compatible recreation opportunities including OHV use within open areas, and dispersed recreation elsewhere.
30	Rose Spring ACEC	BLM	0.61 miles 3,235 feet	Located south of Haiwee, this ACEC allows motorized and non-motorized uses on designated routes, as well as casual and permitted recreational uses such as hiking, picnicking, nature study, wildlife and wildflower viewing.

Map #	Name	Land Mgmt. Entity	Linear Miles/ Feet of Corridor Impacted	Description
31	Mohave Ground Squirrel ACEC	BLM	6.41 miles 33,844 feet	This ACEC is made up of several non-contiguous parcels, which connect with other BLM designated land uses to provide habitat connectivity. This ACEC overlaps with several SRMAs and thus several forms of recreation activities occur here, including OHV use on designated routes and within open areas, and dispersed camping.
32	Fossil Falls ACEC and Campground	BLM	0.73 miles 3,829 feet	Located in the southernmost section of Owens Valley, the ACEC includes a developed camp-ground, hiking trails, climbing opportunities, and scenic viewing. OHV use is limited in and around the ACEC.
33	Baker Creek Campground	Inyo County	0.08 miles 430 feet	Located approximately 1 mile west of Big Pine, the developed campground includes 70 sites, a creek for fishing, RV hookups, vault toilets, drinking water, and fire rings (Inyo County, 2025f).
	Segment 2			
34	El Paso/Rand SRMA	BLM	15.28 miles 80,700 feet	Located south of Ridgecrest and west of US 395, this SRMA includes 177,254 acres of BLM land. This SRMA includes three resource management zones (RMZs), two of which allow OHVs on designated routes, and one of which is closed to motorized use. Other recreational opportunities include dispersed camping, hiking, and nature viewing.
35	Red Mountain SRMA	BLM	3.76 miles 19,857 feet	Located south of Ridgecrest, east of US 395, this SRMA includes over 300,000 acres of BLM land. This SRMA includes an OHV area, and the primary uses in the SRMA include motorized recreation touring, hiking, mountain biking, equestrian rides, wildlife, wildflower viewing, and hunting.
36	El Paso to Golden ACEC	BLM	9.34 miles 49,305 feet	This ACEC encompasses 57,920 acres of BLM land and overlaps with the El Paso/Rand SRMA. The SRMA is of local importance to the residents of Ridgecrest for rockhounding and other recreation such as bird watching, nature study, dispersed camping, hunting, climbing and astronomy. OHV use in the ACEC is limited to open designated routes
37	Fremont-Kramer ACEC	BLM	9.64 miles 50,899 feet	This ACEC encompasses over 200,00 acres of BLM land and overlaps with the El Paso/Rand SRMA. The ACEC is managed to support the goals of the SRMA which includes hiking, dispersed camping, climbing, and hunting. OHV use is limited to designated routes.
--	Mohave Ground Squirrel ACEC	BLM	0.5 miles 2,707 feet	See description in Segment 1.
38	Randsburg Ghost Town	Kern County	1.03 miles 5,458 feet	This area, located within the El Paso/Rand SRMA, is known as a "living" ghost town due to the businesses and small population that reside there. The former mining town now draws visitors on OHVs to visit the local museum and historic soda fountain, and to view the remains of several mining-era structures (DesertUSA, 2025).
	Segment 3N			
--	Fremont-Kramer ACEC	BLM	12.65 miles 66,792 feet	See description in Segment 2.
39	Superior-Cronese ACEC	BLM	25.72 miles 135,788 feet	This ACEC includes 330,670 acres of BLM land and overlaps with the Red Mountain and Superior/Rainbow SRMAs. Vehicle use is limited to designated roads and trails.

Map #	Name	Land Mgmt. Entity	Linear Miles/ Feet of Corridor Impacted	Description
	Segment 3S			
40	Stoddard/Johnson SRMA and Stoddard Valley OHV Area	BLM	2.78 miles 14,680 feet (SRMA) 0.79 miles 4,177 feet (OHV)	This SRMA, located south of Barstow, includes 276,957 acres of BLM land. Within the SRMA is the Stoddard Valley OHV area, and open area for intensive vehicle use. The SRMA is an important source of regional tourism income, and provides other recreational opportunities such as scenic touring, bicycling, hiking, hunting, and equestrian riding.
--	Fremont-Kramer ACEC	BLM	17.22 miles 90,912 feet	See description in Segment 2.
--	Superior-Cronese ACEC	BLM	3.01 miles 15,876 feet	See description in Segment 3N.
41	Daggett Ridge Monkey Flower ACEC	BLM	5.73 miles 30,254 feet	This ACEC includes 25,990 acres of BLM land and is located south of Barstow and Daggett. The ACEC overlaps with the Stoddard/Johnson SRMA, and vehicles are limited to designated roads and trails.
42	Old Spanish National Historic Trail	NPS and BLM	n/a (linear feature that intersects the I-C line at several points.)	Designated a National Historic Trail by Congress in 2002, this trail spans 6 states. Historically used as a trade route, the trail is now used for hiking, horseback riding, and mountain biking (NPS, 2025b).

Sources are as noted for each area or at BLM ePlanning: https://eplanning.blm.gov/eplanning-ui/project/66459/570

Segment 1: Bishop to Inyokern

Segment 1 includes the northernmost 116 miles of the Proposed Project ROW in Inyo County and 10 miles of the ROW in Kern County. The City of Bishop and its surrounding areas are the primary commercial and population hub for Inyo County, due to the availability of outdoor recreation and cultural activities. The Inyo County General Plan states that the natural environment within Inyo County is the greatest attraction to tourists and many residents. This is because of a wide range of diverse recreational opportunities such as campgrounds, recreation areas, wilderness areas, parks, and natural open space. Additionally, tourism is the most important component of Inyo County's economy. Visitor spending boosts local business income and personal income in addition to tax revenues. A high percentage of local wealth is dependent on outside dollars, because tourists make 70% of all retail and lodging purchases in the County (Inyo County, 2001).

BLM-Administered Public Land

Segment 1 crosses 37.7 miles of BLM-administered public lands. Within these areas, several important recreational facilities or areas exist:

- **Olancha Dunes SRMA and OHV Area.** The Olancha Dunes SRMA is located two miles east of Olancha on State Highway 190. The Proposed Project ROW intersects with the SRMA for approximately 1.5 miles. This SRMA provides recreational users with views of the Sierra and Mount Whitney. The SRMA includes 1,665 acres of BLM land. Within the northeast portion of the SRMA, the Olancha Dunes open OHV area consists of approximately 400 acres and does not intersect with the Proposed Project ROW. The types of recreation that are most popular here include OHV use, undeveloped camping, star gazing, nature viewing, commercial filming and photography. The benefits of this area include increased tourism and revenue for the local economy, in addition to providing a relatively safe and easy setting to direct legal motorized OHV use, reducing the pressures and potential impacts to sensitive areas (BLM, 2016b).
- **Fossil Falls ACEC and Campground.** Located in the southernmost section of Owens Valley, approximately 45 miles south of Big Pine, this 1,600-acre ACEC includes a prominent cinder cone known as Red Hill and Little Lake. The Proposed Project ROW intersects with this ACEC for approximately 0.73 linear

miles, 1,800 feet west of the campground. The Fossil Falls Campground is adjacent to the Fossil Falls trail along US 395. The campground contains 11 sites with minimal amenities. Fossil Falls is featured on the U.S. National Register of Historic Places. The ACEC boundary includes portions of the larger Fossil Falls National Register Archaeological District. This area was designated because of its unique geological features, significant historic and prehistoric cultural values, and presence of special status wildlife. This site is desirable for recreation due to the hiking, climbing opportunities, scenic surroundings, and its isolation. OHV use is limited in and around the ACEC.

- **Rose Spring ACEC.** Located at the western edge of the Great Basin. It is south of Owens Valley and the Haiwee Reservoir and is at the northern end of Rose Valley. It includes the locally recognized landmark Rose Springs. This 800-acre ACEC allows motorized and non-motorized uses on designated routes, as well as casual and permitted recreational uses such as hiking, picnicking, nature study, wildlife and wildflower viewing.
- **Mohave Ground Squirrel ACEC.** This ACEC is located south of CA State Highway 190, north of CA State Highway 138, west of Death Valley National Park, and east of Tehachapi. This ACEC includes 198,500 acres and connects a number of other ACECs, BLM Wilderness areas, and National Landscape Conservation System (NLCS) designations, designed to collectively protect the Mohave Ground Squirrel by providing habitat connectivity. This ACEC overlaps with several SRMAs, and all forms of casual and permitted recreational uses are allowed including but not limited to dispersed camping, hunting, photography, picnicking, climbing, rock hounding, astronomy/star gazing, nature study and viewing. Additionally, OHV use is allowed on designated routes and OHV open areas.
- **Olancha Greasewood ACEC.** This 25,620-acre ACEC was designated to provide protection to an unusual plant assemblage (UPA) with greasewood as the dominant plant. This is unique because the greasewood grows on sand dunes and acts as a dune stabilizer. This ACEC overlaps with the Olancha SRMA and is managed for compatible recreation opportunities, such as allowing open use in the Olancha recreational open vehicle areas, and providing dispersed recreational opportunities such as camping, hunting, astronomy, and wildlife viewing.
- **Owens Lake ACEC.** The Owens Lake ACEC consists of 10,270 acres of BLM land and is located approximately 10 miles southeast of Lone Pine. The ACEC is bordered by US 395 on the west, State Highway 136 on the northeast, and State Highway 190 on the southwest. Recreation in this ACEC is limited, as vehicle travel is restricted to authorized roads and trails. The ACEC includes significant historic and cultural values, including sensitive archaeological and cultural resources that are important to Native Americans and vulnerable to adverse change; and wildlife and plant resources including bird habitat of recognized national importance, sensitive species habitat and rare plant communities.
- **Sacatar Trail Wilderness Area.** Segment 1 is about one mile away from the Sacatar Trail Wilderness Area, which offers dispersed backcountry recreation. This area includes the eastern face of the Sierra Nevada, and is primarily used for wildlife viewing, day hiking, and backpacking.
- **Tinemaha Reservoir Viewing Area.** The I-C Project route passes approximately 0.2 miles west of the Tinemaha Viewing Area. This area allows visitors a 360-degree view of this portion of the Owens Valley.
- **Alabama Hills National Scenic Area.** Alabama Hills was designated a National Scenic Area in 2019 by Congress as part of the Dingell Act. The entrance to this area is west of both US 395 and the I-C Proposed Project. Visitors to this site enjoy touring film sites, photography, rock climbing, horseback riding, mountain biking, camping, and stargazing. The edge of this scenic area is about a mile from the Project, however, most of the film sites and recreation is done much farther east of the Project.
- **East Sierra SRMA.** This SRMA runs west of US 395 from Olancha, south, past the intersection of US 395 with SR-14. The area is used most extensively by locals to exercise, walk their dogs, ride horses, or hunt. The area also contains camp sites, and opportunities to view wildlife. The Proposed Project runs east

of US 395, so the Project and the SRMA are on opposite sides of the highway, and the distance between them varies from about 4 miles at the farthest point, to just on the other side of the road.

- **Eastern Sierra Visitors Center.** Located approximately 0.8 miles west from the Proposed Project, south of Lone Pine, the Interagency Visitor Center is a cooperative venture between LADWP, USFS, BLM and the National Park Service (NPS), California Department of Fish and Wildlife, Caltrans, CALFIRE, and Inyo and Mono Counties. The Center features a native plant garden, restrooms, picnic facilities, exhibits, maps, brochures, and books about the Eastern Sierra area.

BLM Open Routes

In response to Executive Orders issued in the 1970's and BLM regulations (43 CFR 8340), the BLM began categorizing all public lands in one of three OHV designation categories to address the proliferation of unplanned roads and trails. The three OHV designation categories include:

- **Open.** Lands with no compelling resource protection needs, user conflicts, or public safety issues.
- **Limited.** Lands in which an agency must restrict OHV use to meet specific resource management objectives.
- **Closed.** Lands for which closure to OHV use is necessary to protect resources, ensure visitor safety, or reduce use conflicts (BLM, 2018).

There are several open routes that intersect the Proposed Project in Segment 1.

National Park Service

Manzanar National Historic Site (NHS). Located one mile west of the Proposed Project, this site is 814 acres, or about 1.3 square miles, and includes a visitor center, bookstore, and the exhibits of Block 14 which show what it was like to live at Manzanar. There is also a 3.2-mile self-guided driving tour which shows the original sentry posts, Block 14 buildings, the cemetery monument, remnants of the administrative complex, rock gardens, orchards, the hospital grounds and more. Visitation in the year 2015 was 95,328 people.

Manzanar was designated as a National Historic site in 1992. This site is historically important because in 1942, the United States government ordered more than 110,000 men, women, and children to leave their homes and detained them in remote, military-style camps. Manzanar War Relocation Center was one of ten camps where the US government incarcerated Japanese immigrants ineligible for citizenship and Japanese American citizens during World War II (NPS, 2025a).

LADWP-Owned Land

The Los Angeles Department of Water and Power (LADWP) owns 58.6 miles of land along Segment 1. About 75% of LADWP owned land in Inyo County is open to the public for recreational use (LADWP, 2023).

- **Owens Lake.** The northern border of Owens Lake is located approximately 5 miles south of Lone Pine. A small portion of Owens Lake is owned by LADWP, the remainder is owned and managed by California State Lands Commission (CSLC) and a few private owners. The Owens Lake area has a historic site, the Cottonwood Creek Charcoal Kilns on the west shore of Owens Lake, and a wildlife viewing area on the southwest shore of Owens Lake. The Project is located approximately 0.5 miles east of Owens Lake. The Owens Lake area is a popular destination for bird watchers, as over 100 species of birds have been spotted there.
- **Haiwee Reservoir Complex.** This area is located approximately 4 miles south of Olancha and is owned by LADWP. Historically, the reservoir area was used for fishing, although fishing is no longer allowed. Now, the Haiwee Reservoir Complex, which is split into north and south reservoirs, is used as a viewpoint for bird and wildlife viewing.

California Department of Fish and Wildlife-Managed Lands

- **Cartago Wildlife Area.** Located on the western shore of Owens Lake, between the lakebed and US 395, this area is approximately 150 feet east of the Project. It is a 218-acre wildlife area that is a popular recreation destination for wildlife viewing, birdwatching, photography and hunting.

Inyo County

- **Baker Creek Campground.** Located at Baker Creek Road near Big Pine, the Baker Creek Campground is crossed by the Proposed Project ROW for approximately 430 linear feet. There is one tower within the campground, and two towers immediately adjacent to the campground. The campground is leased to Inyo County Parks and Recreation, and has 70 camping sites, recreational vehicle (RV) hookups, vault toilets, drinking water, tables, grills, fire rings, and stream fishing.
- **Glacier View Campground.** The Glacier View Campground is located approximately 0.9 miles east from the Proposed Project, near the community of Big Pine. The campground contains 40 camping sites, restrooms, drinking water, tables, and grills.
- **Diaz Lake Campground.** The Diaz Lake Campground is located approximately 0.8 miles west of the Proposed Project, at South Main Street near Lone Pine. The campground is leased to Inyo County Parks and Recreation and includes 200 camping sites, grills, tables, drinking water, and restrooms. Diaz Lake has a boat launch and concession stand along with fishing, water-skiing, and swimming opportunities.
- **Spainhower Park.** Formerly known as Lone Pine Park, this park is approximately one mile west from the Proposed Project in Lone Pine. The park is leased to Inyo County Parks and Recreation. It has a basketball court, tennis court, restrooms, horseshoe pits, picnic tables, drinking water, a playground, and a creek running through the park.
- **Independence Creek Campground.** The Independence Creek Campground is located approximately 0.7 miles west of the Independence Telecommunications Tap (an existing telecommunications facility, which would be modified as part of the Project, see Section 2.2.3, Telecommunications) in Segment 1, near the town of Independence. The campground has 25 camping spots, vault toilets, tables, grills, potable water, and fire rings. There is a stream running through the campground that can be fished during fishing season from the last Saturday in April until November 15. The campground is open year-round, but water is turned off during the winter months.
- **Mendenhall Park.** This park is located approximately 0.5 miles east of Segment 1 in Big Pine. Mendenhall Park offers a basketball court, picnic gazebo, play equipment, and horseshoe-pitching area.

Kern County

In the 10 miles of Segment 1 that are within Kern County, there are no recreational resources managed by Kern County that would be affected by the Project.

Privately-Owned Facilities

- **Boulder Creek RV Resort.** This RV resort is located approximately 4 miles south of Lone Pine, and 0.5 miles west of the Proposed Project. The Boulder Creek RV Resort is a privately-owned camping resort with 77 RV hook up sites, tent camping, and rental cabins.
- **Mt. Whitney Golf Course.** This nine-hole golf course is located adjacent to US 395, about one mile west of the Proposed Project near Lone Pine, accessed via Lone Pine Golf Course Road off US 395. The golf course also has an irrigation pond with largemouth bass, available for fishing (Mt. Whitney Golf Club, 2025).

US Department of Agriculture, Forest Service

- **Golden Trout Wilderness.** Located approximately 0.5 miles east of Segment 1, the Golden Trout Wilderness area encompasses 304,000 acres in the Kern Plateau area and was designated by Congress in 1978. Wilderness permits are required year-round for overnight visits. This area provides recreational opportunities such as hiking, backpacking, and horse riding (USFS, 2023).

Segment 2: Inyokern to Kramer Junction

Segment 2 begins at the existing Inyokern Substation in northeastern Kern County (about 6 miles west of the City of Ridgecrest). Its 48 miles generally follow US 395 south to the Kramer Substation (located at the intersection of US 395 and State Highway 58) in western San Bernardino County.

BLM-Administered Public Land

Segment 2 includes 28.5 miles on BLM-administered public land, spanning the El Paso/Rand SRMA and the Red Mountain SRMA.

- **El Paso/Rand SRMA.** The Proposed Project ROW intersects with the SRMA for approximately 22 miles. The El Paso/Rand SRMA includes 177,254 acres of BLM land, located between State Highway 14 to the East and US 395 on the west, with its northern border approximately 5 miles south of SR-178, and its southern border approximately 20 miles north of SR-58 and the Kramer Substation. The SRMAs location near these highways provides several ways to access these areas. The SRMA consists of three separate RMZs: El Paso Mountains, Rand Mountains Management Area, and Desert Tortoise Research Natural Area, which are managed separately to allow for different impact levels of multi-use recreation. Both the El Paso Mountains and the Rand Mountains Management Area RMZs are limited use areas, which means OHVs must stay on designated routes. The primary uses here are primitive camping, motorized recreation touring, trail riding, off road recreation education, and climbs in the Rand Mountains. The Desert Tortoise Research Natural Area RMZ is closed to motorized uses, and provides opportunity for nature walks, hiking, wildlife viewing, educational outings, and photography.
- **Red Mountain SRMA.** The Red Mountain SRMA is located adjacent to US 395, mostly on the east side, aside from a few miles in the southern portion of the SRMA, where it intersects with the Proposed Project ROW for approximately 3 miles. The SRMA includes 307,991 acres of BLM land. The SRMAs northern border is approximately 5 miles south of SR-178, and its southern border is approximately 14 miles north of SR-58. The primary uses in the Red Mountain SRMA include motorized recreation touring, hiking, mountain biking, equestrian rides, wildlife, and wildflower viewing, and hunting. The SRMA also allows other specially permitted activities that include dual sport adventure, equestrian endurance rides, mountain bike races and competitive motorized events in the Spangler Hills OHV area, located within the SRMA, bordered on the west by US 395, and approximately 3 miles east of the Proposed Project ROW.
- **El Paso to Golden ACEC.** This ACEC encompasses 57,920 acres of BLM land and is located south and east of the El Paso Wilderness, and west of US 395. This ACEC was designated to maintain habitat connectivity for wildlife. This ACEC overlaps with the El Paso/Rand SRMA and is of local importance to the residents of Ridgecrest for rockhounding and other recreation such as bird watching, nature study, dispersed camping, hunting, climbing and astronomy. OHV use in the ACEC is limited to open designated routes to prevent user-created routes.
- **Fremont-Kramer ACEC.** This ACEC encompasses 238,390 acres of BLM land, including Fremont Valley, the Rand Mountains, Red Mountain, Cuddeback Lake, and extends south beyond Kramer Junction. This ACEC overlaps with the El Paso/Rand SRMA, and is managed to provide dispersed recreational opportunities, such as hiking, dispersed camping, climbing, and hunting. OHV use is limited to designated routes.

- **Mohave Ground Squirrel ACEC.** This ACEC overlaps with approximately 0.5 miles of the Proposed Project ROW in Segment 2. See description in Segment 1.

BLM Open Routes

There are several open routes that intersect the Proposed Project in Segment 2.

Kern County

Within Segment 2, there is one recreational resource managed by Kern County that would be affected by the Project.

- **Randsburg Ghost Town.** The census-designated place, Randsburg, is located just west of Segment 2, within the El Paso/Rand SRMA. Randsburg is known as a "living" ghost town, because there are operating businesses and a small population there. Randsburg was a mining town active between 1895, when gold was discovered to 1929, when the mine was shut down because it was no longer profitable. The Rand Mining District California Historical Landmark, number 938, was designated in 1958. Visitors come to Randsburg to visit the local museum and historic soda fountain and to experience the "feel of the Old West" due to the presence of several mining era buildings (DesertUSA, 2025). The town is busiest from October through May, with major holiday weekends bringing crowds of approximately 2000 recreationists using off-highway vehicles to visit the town.

Segment 3N: Kramer Junction to Daggett

Segment 3N is 44 miles long and located entirely in San Bernardino County. Segment 3N generally runs in an east-west direction between the existing Kramer and Coolwater Substations. The Coolwater Substation is approximately 12 miles east of the City of Barstow.

BLM-Administered Public Land

Segment 3N crosses 21.8 miles of BLM-administered public lands. Designated resources include:

- **Superior/Rainbow SRMA.** The Superior/Rainbow SRMA is located north of Segment 3N and is within 1 mile of the Proposed Project route for a nearly 18-mile-long segment. This SRMA consists of 115,460 acres of BLM land. In this SRMA, the primary uses are scenic touring, camping, hiking, equestrian riding, mountain biking, OHV trail riding, educational and scientific study, photography, picnicking, geocaching, and celestial observation. The SRMA is a limited use area, which means that vehicle use is limited to county roads and BLM open routes.
- **Fremont-Kramer ACEC.** This ACEC overlaps with approximately 12.65 miles of Segment 3N. See description in Segment 2.
- **Superior-Cronese ACEC.** This ACEC includes 330,670 acres of BLM land and overlaps with the Red Mountain and Superior/Rainbow SRMAs, so recreation in this ACEC is similar to what occurs in those SRMAs. All vehicle traffic in this ACEC is limited to designated roads and trails to protect sensitive habitat. The ACEC provides critical desert tortoise habitat linkage.
- **Harper Dry Lake Area.** This area is located approximately 1 mile north of Segment 3N, and is accessible from Harper Lake Road, north off SR-58 midway between Kramer Junction and Barstow. The area offers interpretive programs such as a walking path, wildlife viewing, and photography. The wildlife viewing area for Harper Dry Lake Marsh is closest to the Proposed Project ROW, but the greater Harper Lake Subregion covers nearly 115,000 acres of mixed public and private lands, and provides opportunities for dispersed camping, hunting, fishing, and OHV touring on the designated route system (BLM, 2023c).

BLM Open Routes

There are several open routes that intersect the Proposed Project in Segment 3N.

San Bernardino County

Within Segment 3N, there are no recreational resources managed by San Bernardino County that would be affected by the Project. There is one privately-owned recreational resource within San Bernardino County that would be affected by the Project.

- **Barstow/Calico KOA.** This site is a private campground, located approximately 0.4 miles east of Segment 3N, directly north of I-15. The closest construction activity would occur 0.8 miles from the campground. The campground can be accessed without crossing the Proposed Project ROW, via Outer Hwy 15 North Road off I-15.

Segment 3S: Kramer Junction to Barstow to Daggett

Segment 3S is 44 miles long and located entirely in San Bernardino County. The setting for Segment 3S passes through the City of Barstow on the south side, and compared to Segment 3N, has more developed areas with residential uses. Recreation in San Bernardino County is important, due to the revenue gained by tourists using recreational resources. For rural desert communities, such as the communities near the Project, scenic, natural, and recreational features serve as the foundation of the communities' economies because it attracts tourism (SBC, 2022). Recreational facilities near Segment 3S are described in the following paragraphs.

BLM-Administered Public Land

Segment 3S crosses 23.3 miles of BLM-administered public lands. Designated resources include:

- **Stoddard/Johnson SRMA.** The Stoddard/Johnson SRMA includes 276,957 acres of BLM land. The Proposed Project ROW intersects the SRMA for approximately 5 miles, south and southeast of the City of Barstow. The SRMA also includes the Stoddard Resource Management Zone (RMZ) and the Stoddard Valley OHV area. Within the RMZ, riding OHVs is the primary activity, with the majority of visitors coming to camp, ride, race, and socialize in family and organized events. The OHV area intersects with the Proposed Project ROW for approximately 1 mile and is bordered by Highway 247 to the east, Interstate 15 to the west, and the City of Barstow to the north. Because of its location near freeways, there is easy access to the OHV area. The Stoddard Valley OHV area is a medium sized range, which was designated as an open area for intensive vehicle use and includes a variety of terrain for different types of off highway vehicles. Competing in organized OHV events is a key experience in this SRMA; other popular uses are casual recreation for locals and regional residents, due to the proximity to the City of Barstow. This SRMA is an important source of regional tourism income. Other uses for the SRMA besides OHV use include exploring, scenic touring, camping, mountain bike riding, mountain climbing, geo-caching, hunting, picnicking, equestrian riding, and photography (BLM, 2016b).
- **Fremont-Kramer ACEC.** This ACEC overlaps with approximately 17.22 miles of Segment 3S. See description in Segment 2.
- **Superior-Cronese ACEC.** This ACEC overlaps with approximately 3.01 miles of Segment 3S. See description in Segment 3N.
- **Daggett Ridge Monkey Flower ACEC.** This ACEC, encompassing 25,990 acres of BLM land, is important for the protection of the BLM Sensitive Species[2], the Mojave Monkeyflower, which has a highly restrictive range. Located southeast of Barstow, this ACEC overlaps with the Stoddard/Johnson SRMA, and vehicles are limited to designated roads and trails.

[2] Species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the Endangered Species Act.

National Park Service

- **Old Spanish National Historic Trail.** The Proposed Project ROW crosses the Old Spanish National Historic Trail at one point in Segment 3S. The Trail was designated as a National Historic Trail by Congress in 2002 and is administered by both the BLM and the NPS. This trail spans six states and covers approximately 2,700 miles, over lands managed by NPS, BLM or USDA Forest Service. Historically, it was used as a trade route, but currently it is used for recreation, such as hiking, horseback riding, and mountain biking (NPS, 2025b). At the location where the trail intersects the Proposed Project in Segment 3S, the trail is not marked and traverses an industrial area. (City of Barstow, 2023; NPS, 2025b)

Barstow City Parks

- There are 13 parks in the City of Barstow, none of which would be crossed by the Proposed Project ROW. Barstow Heights Park and Robert A. Sessions Memorial Park are both located within one quarter mile of the Project. These parks are mainly used by local residents of Barstow, due to their close proximity to the city for sports and leisure.

3.18.2. Applicable Regulations, Policies, and Standards

3.18.2.1. Federal Regulations, Policies and Standards

The Ivanpah-Control Project crosses 170.7 miles of federal lands managed by the U.S. Department of the Interior BLM. The ROW crosses BLM lands within the BLM's California Desert District and within 4 BLM field offices: Bishop, Ridgecrest, Barstow, and Needles.

The **Federal Land Policy and Management Act** (FLPMA) was established in 1976 by Congress to serve the purpose of management, protection, development, and enhancement of public lands. FLPMA requires that public lands be provided for multiple objectives including outdoor recreation and human use. FLPMA Sections 201 and 202 establish BLM land use requirements, which are the basis for every on-the-ground action the BLM undertakes.

43 CFR 8340. This section of the Code of Federal Regulations establishes criteria for designating public lands as open, limited, or closed to the use of OHVs and establishes controls governing the use of OHVs in such areas.

BLM California Desert Conservation Area (CDCA) Plan. The CDCA is a 25-million-acre area that contains over 12 million acres of public lands. When Congress enacted the FLPMA in 1976, the BLM was directed to inventory CDCA resources and to prepare a comprehensive land-use management plan for the area. The management plan was completed in 1980, and a reprint in 1999. The goals of this plan for recreation is to emphasize dispersed and undeveloped use and protect resources and visitor safety while increasing public awareness, enjoyment and sensitivity of resources. Another goal of the plan is to adjust the management approach to accommodate changing visitor use patterns and preferences and encourage the use of desert resources by special populations.

The BLM **Desert Renewable Energy Conservation Plan** (DRECP) amended the CDCA in 2016. The DRECP greatly expanded areas designated as Special Recreation Management Areas, Extensive Recreation Management Areas (ERMAs), and Areas of Critical Environmental Concern (ACECs), defined as follows:

- SRMAs are lands recognized and managed for their recreation opportunities, unique value and importance. These areas are defined in the BLM Land Use Planning Handbook H-1601-1 (2005) as high-priority areas for outdoor recreation. These units are identified in land use plans to direct recreation funding and personnel to manage for a specific set of recreation activities, experiences, opportunities and benefits. Land use plan decisions and subsequent implementing actions for recreation in each SRMA are geared to a strategically identified primary market, destination, community, or undeveloped areas.

- ERMAs are a public lands unit identified in land use plans containing all acreage not identified as a SRMA. Recreation management actions within an ERMA are limited to only those of a custodial nature (BLM, 2005). These areas are managed with the goal of support and sustainability of principal recreation activities and associated qualities and conditions. Management of ERMA areas correspond with the management of other resources and resource uses.
- ACECs are lands that require specific management to protect important and relevant values, and they are used to highlight areas where this special management attention is needed to protect important historical, cultural and scenic values, or fish and wildlife or other natural resources. Recreation is allowed in ACECs as long as the recreation use is compatible with the protection and enhancement of the significant natural and cultural resources (BLM, 2016a, 2016c).

BLM Bishop Resource Management Plan (RMP) was approved in a 1993 Record of Decision. This RMP covers BLM-administered public lands over a large portion of the I-C Project, from the City of Bishop to the southern edge of Owens Lake. This RMP states that the type of recreation best suited for eastern Sierra BLM lands is "predominately dispersed use in semi-primitive, undeveloped settings." The RMP's goal is to maintain and enhance these undeveloped settings. General policy number 4 of the RMP states that "public lands will be managed in a manner that will… provide for outdoor recreation and human occupancy and use." (BLM, 1993).

The I-C Project is located within three management areas within the Bishop RMP area. These are: Owens Valley Management Area, South Inyo Management Area, and Owens Lake Management Area. (PEA, 2020)

3.18.2.2. State Regulations, Policies and Standards

Off-Highway Motor Vehicle Recreation Act of 2003. California's Off-Highway Motor Vehicle Recreation (OHMVR) Act of 2003 (Public Resources Code Section 5090.01 et seq.) supports the addition to and expansion of OHV areas. This act implemented the Off-Highway Motor Vehicle Recreation Program. The Program addresses both OHV recreation and off-highway motorized access to other forms of recreation by managing and operating eight State Vehicular Recreation Areas (SVRAs). The SVRAs are dedicated to motorized recreation and resource conservation. The Program provides financial assistance grants to state, local, and federal agencies, Native American Tribes, nonprofit organizations, and educational institutions that provide OHV opportunities and related maintenance, operation, law enforcement, and environmental conservation services (Public Resources Code Section 5090.02[c]). In addition, the act also requires that these recreation areas be managed to sustain them for long term motor vehicle recreation and that the OHMVR program supports motorized off-highway access to nonmotorized recreation opportunities (BLM, 2015).

3.18.2.3. Local Regulations, Policies and Standards

The CPUC has sole and exclusive state jurisdiction over the siting and design of the Ivanpah-Control Project. Pursuant to CPUC General Order 131-E (GO 131-E), Section XI.B, public utilities are directed to consider local regulations and consult with local agencies, but the county and city regulations are not applicable as they do not have jurisdiction over the Project. Local ordinance policies and requirements are summarized here only where these requirements are used as the basis for impact analysis.

Inyo County General Plan. The General Plan includes several sections with policies related to recreational resources in the County. Section 8.9, Recreation Element, covers the provision and use of recreational facilities and areas within the County. Section 5.2, Economic Development, covers the promotion and development of tourism related to recreation and enjoyment of the natural environment. Section 7.8, Canals, Pipelines, and Transmission Cables, covers the range of conveyance systems in Inyo County. The

following goals, policies, and implementation measures relate to recreational resources in the Proposed Project area.

> **Policy REC-1.2. Recreational Opportunities on Federal, State, and LADWP Lands.** Encourage the continued management of existing recreational areas and open space, and appropriate expansion of new recreational opportunities on federal, state, and LADWP lands.
>
> **Goal CPT-1.** To ensure that regional conveyance systems are designed and located to serve Inyo County residents while not significantly impacting existing communities or regional viewsheds.
>
> **Implementation Measure 1.0.** The County will encourage the co-location of regional conveyance corridors (utility corridors) over establishment of new routes.

Kern County General Plan. Land Use, Open Space, and Conservation Element. This general plan element designates the general distribution, location, and extent of the land for categories of public and private uses of land, including recreation (Kern County, 2009).

> **Section 1.4, Goal 13.** Provide a variety of park and recreation programs that offer safe, equitable, and balanced recreation opportunities for all residents and visitors.

Kern County, Parks and Recreation Master Plan. The plan was developed to evaluate the County's current park and recreational resources, assess the needs for the future, and develop a road map to achieving those needs (Kern County, 2010). One of the key recommendations that the Plan makes is to maintain and improve existing parks as a first priority.

> **Policy I.** Develop and maintain a countywide system of regional parks, natural open space and recreational facilities which together provide opportunities for both active and passive recreation, serving the wide-ranging recreation and social needs of the diverse, varied communities of Kern County.

San Bernardino Countywide Policy Plan (General Plan). The purposes of the Natural Resources Element that are applicable to recreation include providing guidance on coordinating with others to manage, conserve, and protect natural and open space areas, and to provide guidance on the location and distribution of new development to protect natural resources (SBC, 2022).

> **Goal NR-3. Open Space, Parks, and Recreation.** A system of well-planned and maintained parks, trails, and open space that provides recreation opportunities for residents, attracts visitors from across the region and around the country, and preserves the natural environment.
>
> **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-3.11 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.
>
> **Policy NR-3.12 Rights-of-way and easements.** We consider reserving portions of rights-of-way and easements found to be unnecessary for the ultimate buildout of roadways or flood control facilities for use as local pedestrian, bicycle, and/or equestrian trails.

City of Barstow General Plan, Resource Conservation and Open Space Element. The general plan contains goals and policies to protect natural resources, including recreational opportunities (City of Barstow, 2015).

> **Strategy 7 A.1:** Work with the utility companies owning large "cross-town" easements to ensure that these areas remain as open space for recreation, circulation, etc.

3.18.3. Environmental Impacts of the Proposed Project

3.18.3.1. Impact Analysis Approach

This section considers the potential impact to and disruption of recreational resources from construction and operation of the Proposed Project. Effects on recreational resources are considered in the context of the Proposed Project's location in an existing transmission corridor, so the line itself is a component of the existing environment. However, the corridor does pass though recreation areas where impacts to recreation may result from construction. The severity of impacts to the recreational resources is measured by the number or size of recreational resources directly or indirectly impacted by the Project and each alternative, and the length of time that the direct or indirect impact would last.

Construction impacts are split into two categories, which correspond with Table 3.18-1 (Recreational Resources Outside of the Ivanpah-Control ROW) which have indirect impacts, and Table 3.18-2 (Recreational Resources Within the Ivanpah-Control ROW) which have both direct and indirect impacts.

SCE proposes to implement two Applicant Proposed Measure (APM) related to recreation to ensure the Proposed Project would be constructed and operated with minimal environmental impacts in a manner consistent with applicable rules and regulations. Implementation of these APMs is considered part of the Proposed Project for purposes of the evaluation of environmental impacts. Table 3.18-3 presents the full text of these APMs.

Table 3.18-3. Applicant Proposed Measures – Recreation

APM	Text
Recreation	
APM REC 1 ***[Superseded by MM REC-1a]***	When temporary closures to recreational areas are necessary for construction activities, SCE will coordinate those closures with recreational facility owners.
Noise	
APM NOI 1	**Implement Best Management Practices for Construction Noise**. 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 the applicable local jurisdiction. 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. ■ Construction traffic and helicopter flight shall be routed away from residences and schools, where feasible. ■ 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.

3.18.3.2. Impact Significance Criteria

Significance Criteria

Significant impacts to recreation could result if the Proposed Project:

- **Impact REC-1:** Would directly or indirectly disrupt activities in or block access to established recreation areas.
- **Impact REC-2:** Would damage recreational trails or facilities.

Transmission line projects would not create impacts related to the following Appendix G questions, so these issues are not addressed in this EIR:

- Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? The Proposed Project would not use existing neighborhood and regional parks or other recreational facilities. Therefore, this issue is not addressed in the EIR.
- Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? The Proposed Project would not include recreational facilities or require the construction or expansion of recreational facilities. Therefore, this issue is not addressed in the EIR.

3.18.3.3. Impacts and Mitigation Measures

3.18.3.4. Segment 1: Bishop to Inyokern

Impact REC-1: Disrupt recreational activities, temporarily blocking or reducing access and visitation to recreational areas.

Construction

Construction activities for the Proposed Project are anticipated to take place Monday through Saturday from 7:00 a.m. to 7:00 p.m. Removal and replacement of structures would require establishing temporary staging yards, work areas, construction of new and existing access and spur roads, vegetation removal, and helicopter use. After construction, disturbed areas would be rehabilitated. The Proposed Project in Segment 1 would require installation of new structures along the entire length of the segment, and subsequent removal of all existing transmission structures. The new structures would be tubular steel poles (TSPs), ranging in height from 65 to 140 feet, while the existing poles are of varying types and are up to 94 feet tall. Some of the replacement structures in Segment 1 would be installed immediately adjacent to the existing right-of-way.

Construction Effects on Recreational Resources outside of the Ivanpah-Control ROW

Areas Not Specified Below. *NO IMPACT*. Depending on the proximity of construction activities to each recreation area, construction could create temporary disturbance to recreational activities. Indirect effects to recreation during construction would result from construction noise and dust, and increased traffic. Visual impacts to recreational resources are considered indirect effects, and are discussed in Section 3.2, Aesthetics, and are therefore not discussed in this section. These disturbances could diminish the experience and could negatively affect a visitor's enjoyment of recreational resources near the Proposed Project, so recreationists may be less likely to visit during construction.

The recreational resources not directly affected by the Project are listed in Table 3.18-1 and illustrated on Figure 3.18-2a (Recreation Areas, Segment 1 North), Figure 3.18-2b (Recreation Areas, Segment 1 Central), and Figure 3.18-2c (Recreation Areas, Segment 1 South). These sites range in distance to the ROW from 150 feet to approximately 1 mile. As a result, with the exception of Manzanar NHS, none of these resources would be indirectly affected by Project construction because of the distance to the ROW (no impact).

Manzanar NHS. *LESS THAN SIGNIFICANT WITH MITIGATION*. This site, which is listed in Table 3.18-1, is an important destination for visitors wanting to learn about the Japanese internment during World War II, as well as for family members of internees. The internment and residential area of Manzanar and the current visitor center are located approximately one mile west of the Proposed Project ROW.

The construction activity nearest to Manzanar is a staging area about a quarter of a mile away from the site, east of US 395. During construction, helicopters would be used, which would create noise that would disturb visitors to the Manzanar NHS. APM NOI-1 would be implemented but the analysis of noise impacts

(Section 3.15.3.3) concludes that the APM alone would not be sufficient to avoid noise impacts to this resource, because the APM does not include helicopter route avoidance for recreational areas. Implementation of Mitigation Measure N-1a (Helicopter Noise Control Strategy) would reduce disturbance effects by controlling helicopter noise (defining helicopter flight corridors), requiring minimum transit elevations above ground level to avoid noise-sensitive receptors on the ground, and limiting hovering time.

Construction at the staging area could result in a visible disturbance due to dust. Fugitive dust would be controlled by measures required by the Great Basin Unified Air Pollution Control District, as a condition of a permit from the District. However, due to the distance between construction areas and the Manzanar NHS, dust would not cause a significant disruption. Implementation of Mitigation Measure AQ-2b (Control Fugitive Dust Emissions) would further reduce the Proposed Project's less than significant disturbance effects by requiring implementation of specific measures to prevent dust.

Construction traffic would not affect the ability of Manzanar visitors to access the NHS, since the staging area is across the highway from the historic site. In conclusion, recreation impacts to Manzanar Historic Site would be less than significant with implementation of Mitigation Measure N-1a (Helicopter Noise Control Strategy; superseding APM NOI-1) and Mitigation Measure AQ-2b (Control Fugitive Dust Emissions).

The indirect visual impacts at Manzanar NHS are defined in Section 3.2, Aesthetics (KOP 1-7 Manzanar Historic Entry), and are considered less than significant (Class III), resulting in a less than significant change in the viewshed from the Manzanar site. Historic components of the Manzanar facility (its water treatment plant) are located along the Project ROW but are not within NPS lands. Potential effects on those facilities are addressed in Section 3.6, Cultural Resources.

Construction Effects on Recreational Resources within the Ivanpah-Control ROW

Areas Not Specified Below. *LESS THAN SIGNIFICANT.* Direct construction effects to recreation include physical impacts, such as disrupting access to a recreational area, or causing a disturbance within the area. There are 7 recreational resources in Segment 1 that would experience direct effects from construction of the Proposed Project; they are listed in Table 3.18-2. These recreational resources would also be subject to indirect effects from construction, such as disturbance created by noise, dust, or traffic.

The Owens Lake ACEC, Rose Springs ACEC, and the Mohave Ground Squirrel ACEC would experience direct effects such as physical disturbance from construction of the Proposed Project within the recreational resource. However, these effects would be limited to the areas in and around the Proposed Project ROW. The temporary effects of construction would not substantially block access or disrupt recreational activities in the ACECs, even if the recreational experience would be somewhat diminished during construction activities. Due to the limited range of construction effects, in both time and extent, construction impacts within these ACECs would be less than significant, and no mitigation is required.

Olancha Dunes SRMA and Olancha Greasewood ACEC. *LESS THAN SIGNIFICANT FOR MOST RESOURCES; TWO EXCEPTIONS ARE DEFINED BELOW).* The Olancha Dunes SRMA includes an OHV Area, and no developed facilities or campgrounds. The Proposed Project ROW passes through approximately 1.5 linear miles of the SRMA, and does not intersect with the Olancha Dunes OHV area, which is approximately 0.75 miles to the west. The Olancha Dunes SRMA includes over 1,500 acres of BLM land, 400 acres of which are within the OHV area. Approximately 63 acres of the SRMA overlap with the Proposed Project ROW. The most intense recreational activities in the SRMA, such as motorized touring, would occur within the OHV area. Other activities, such as camping, star gazing, and nature viewing, also occur within the SRMA. The Proposed Project ROW also intersects with 2.9 linear miles of the Olancha Greasewood ACEC, which overlaps with the Olancha Dunes SRMA.

The Proposed Project ROW crosses SR-190, which is also used to access the SRMA and OHV area. SCE anticipates that temporary lane or road closures would be necessary where the ROW crosses public roads, regardless of the presence of guard structures. Although this road may experience a temporary closure, the SRMA has multiple points of entrance, and therefore access would not be blocked. The Proposed

Project ROW is located adjacent to US 395, and therefore most of the disturbance would occur in an area that is previously disturbed. Compared to the vast amount of open land in the SRMA, construction impacts would be less than significant, and no mitigation is required (Class III).

There are many BLM open routes that would be crossed by the Proposed Project ROW. Because construction activities move along the ROW and are temporary, access to these routes would not be blocked for long periods of time, if at all. Due to the limited range of construction effects, in both time and extent, construction impacts on BLM open routes would be less than significant and no mitigation is required.

Two recreation areas presented in Table 3.18-2 are addressed here in more detail because they would experience potentially significant direct effects from construction: Baker Creek Campground and the Fossil Falls ACEC and Campground.

Baker Creek Campground. *LESS THAN SIGNIFICANT WITH MITIGATION.* This campground is located just west of Big Pine, and about 430 linear feet of the existing ROW passes through the campground itself. Reynolds Road provides access to the campground and would also be used as an access road for Proposed Project construction. This increased traffic and construction activity could disturb campers or reduce the desirability of the campground during construction. Because construction will involve installation of new structures and conductors before the existing structures are removed, two phases of construction will occur at separate times.

During either or both of these phases, construction activities could restrict access to all or parts of the campground, resulting in a potentially significant impact. APM REC-1 requires coordination of recreation area closures with recreation facility owners, however, this measure only requires coordination between SCE and recreation facility owners but does not require work to occur outside of the busy season for the recreation resource, nor does it require notification of construction activities. APM REC-1 is not robust enough to prevent disturbance to recreation users and would not reduce impacts to less than significant levels. Mitigation Measure REC-1a (Coordinate construction schedule and activities and identify alternative recreation areas; full text below) is recommended to supersede APM REC-1. Mitigation Measure REC-1a (Coordinate construction schedule and activities and identify alternative recreation areas) would allow the facility manager to coordinate with SCE to plan potential closures or schedule construction to avoid the busy season for this recreation resource and would provide notification prior to the disturbance, to allow for recreationists to consider different camping areas to avoid the disturbance, which would ensure that the impact is less than significant.

The use of helicopters for construction would create noise, and other ground-disturbing construction activities would create dust, both of which are significant due to the close proximity of the construction areas to campground sites. APM NOI-1 would not be sufficient to avoid noise impacts to this resource, because the APM does not include helicopter route avoidance for recreational areas. Potentially significant noise impacts would be controlled by implementation of Mitigation Measure N-1a (Helicopter Noise Control Strategy, superseding APM NOI-1).

Potentially significant dust impacts would be controlled by implementation of Mitigation Measure AQ-2b (Control Fugitive Dust Emissions). Along with Mitigation Measure REC-1a (Coordinate construction schedule and activities and identify alternative recreation areas), these measures would ensure that impacts are less than significant.

Fossil Falls ACEC and Campground. *LESS THAN SIGNIFICANT WITH MITIGATION.* The Proposed Project ROW would pass through 0.73 miles of the Fossil Falls ACEC, passing approximately 1,800 feet west of the campground, which is situated at the trailhead of the Fossil Falls area. The scenic and isolated Fossil Falls and the dramatic lava flow landscape draw people to this area. The existing subtransmission line is visible from the campground and the parking lot for the trails. The 1,800-foot separation would help reduce disturbance, but there would still be indirect disturbance effects (noise, dust) from the perspective of people exploring the Fossil Falls area. While the effects may be physically removed from the most intense

use areas for Fossil Falls, including the campground, construction activities in the high priority area, approximately 1,800 feet away from the campground, would detract from its recreational value, resulting in a potentially significant impact.

Access to the Fossil Falls ACEC and Campground could be impacted during construction because the Proposed Project ROW crosses the access roads. These roads would also be used as access roads to construct the Proposed Project. The western portion of Cinder Road will also be used by SCE for construction access to the ROW. SCE will install guard structures to prevent conductors from falling onto Cinder Road.

Due to the crossing of the subtransmission line over Cinder Road, which is the road that provides access to the ACEC and the campground, access to these recreation areas may be interrupted during construction, which would disrupt recreational activities and may result in a significant impact.

APM REC-1 does not provide any detail explaining how the coordination between SCE and recreation facility owners would occur, and therefore, implementation of APM REC-1 would not reduce the impact to less than significant.

Implementation of Mitigation Measure REC-1a (Coordinate construction schedule and activities and identify alternative recreation areas) is recommended for this location; this mitigation measure would supersede APM REC-1. This measure would require that SCE coordinate with BLM to schedule construction activities to avoid heavy recreational use periods, identify alternative recreation sites that may be used by the public, and request that BLM provide online notification of construction activities that will occur at the site. This would reduce the impact to less than significant because recreational users would be informed of the disturbance and would be able to avoid it, and it would not occur during heavy use periods, to reduce the number of recreationists affected by construction.

The use of helicopters for construction would create noise, and other ground-disturbing construction activities would create dust, both of which are significant due to the close proximity of the construction areas to campground sites. As discussed in Section 3.15 (Noise), implementation of APM NOI-1 would not be sufficient to avoid noise impacts to this resource, because the APM does not include helicopter route avoidance for recreational areas. Significant noise impacts would be controlled by implementation of Mitigation Measure N-1a (Helicopter Noise Control Strategy, superseding APM NOI-1).

Potentially significant dust impacts would be controlled by implementation of Mitigation Measure AQ-2b (Control Fugitive Dust Emissions; see Section 3.4, Air Quality). Along with Mitigation Measure REC-1a (Coordinate construction schedule and activities and identify alternative recreation areas), these measures would ensure that construction impacts on recreational resources would be less than significant.

Operations and Maintenance

NO IMPACT. The Proposed Project would replace existing operational powerlines, within or immediately adjacent to the existing ROW. As described in Section 2.5 of the Project Description, operations and maintenance activities would be similar to ongoing activities after the Proposed Project is constructed. These ongoing operations and maintenance activities include at minimum, once per year inspections, repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, replacing poles and towers, tree trimming, brush and weed control, and access road maintenance. Most existing operations and maintenance activities occur from existing access roads with no new surface disturbance.

Because the 115 kV subtransmission lines already exist and maintenance activities are ongoing, there would be no new disruption of recreational activities, and no access to recreational areas would be blocked or reduced as a result of project operation.

In Segment 1, the Proposed Project would result in the presence of an entirely new subtransmission line replacing the existing line. In most cases for Segment 1, the structures would be replaced with slightly taller structures of a different style: tubular steel poles replacing the existing lattice style structures. The continued presence of the re-built line in nearly the same location as the existing line would not result in

a disruption of recreational activities. Because the entire line in Segment 1 would be removed and replaced, it is likely that operations and maintenance activities would be less intense for the new structures in Segment 1, compared to the existing structures, which were built in 1912. Due to this, there would be no impact on recreational resources due to operation, and no mitigation is required for effects to recreation.

Mitigation Measures for Impact REC-1 (Segment 1: Applicable to Fossil Falls Campground and Baker Creek Campground only for Proposed Project and Taboose Creek Campground for Crater Mountain Realignment Alternative)

REC-1a **Coordinate construction schedule and activities and identify alternative recreation areas (Supersedes APM REC-1).** SCE shall coordinate construction activities and the project construction schedules with representatives from Inyo County, the National Park Service (NPS), and the Bureau of Land Management (BLM) no less than 90 days prior to construction that would affect two specific recreation areas:

- Baker Creek Campground (Inyo County)
- Fossil Falls ACEC and Campground (BLM)
- Taboose Creek Campground (Inyo County; Crater Mountain Realignment Alternative only)

SCE shall use best efforts to schedule construction activities to avoid heavy recreational use periods, including major holidays, in coordination with the agency representative. Specifically:

- SCE shall locate construction equipment to avoid temporary preclusion of recreation area use whenever feasible per the recommendations of the representative.
- SCE shall coordinate with Inyo County, NPS, and BLM representatives regarding construction activities in order to identify alternative recreation sites that may be used by the public and shall provide construction status information to the public as recommended by these agencies.
- SCE shall coordinate with Inyo County, NPS, and BLM representatives to notify potential users of the recreation facilities by posting a notification of proposed construction schedule, and alternative recreation sites, to the appropriate website for each recreation area.
- If existing recreation facilities are directly affected by construction or by the presence of new subtransmission facilities, SCE shall provide replacement facilities of equivalent value to existing facilities, based on recommendations from the facility managers.
- SCE shall document its coordination with Inyo County, NPS, and BLM representatives and shall submit this documentation to the CPUC at least 90 days prior to initiating project construction.

AQ-2b **Control Fugitive Dust Emissions.** (See full text in Section 3.4, Air Quality)

N-1a **Helicopter Noise Control Strategy (Supersedes APM NOI-1).** (See full text in Section 3.15, Noise)

Impact REC-2: Damage recreational trails or facilities.

Construction

NO IMPACT. Direct effects of construction would be actions creating physical damage to recreational trails or facilities. No recreation areas have facilities or trails immediately adjacent to the ROW, so no damage is anticipated from construction (No Impact).

Operations and Maintenance

NO IMPACT. The operations and maintenance activities occurring after the Proposed Project is constructed would be similar to ongoing operations and maintenance activities. Therefore, no adverse effects to recreational resources would occur (No Impact).

3.18.3.5. Segment 2: Inyokern to Kramer Junction

The Cal City Options defined in Section 2.1.1 and illustrated in Figure 2-2 would have recreation impacts no different from those defined for Impacts REC-1 and REC-2, because the extent and location of ground disturbance required for the Proposed Project would be the nearly the same as that required for any of the Cal City Options.

Impact REC-1: Disrupt recreational activities, temporarily blocking or reducing access and visitation to recreational areas.

Construction

The Proposed Project in Segment 2 would involve installation of new structures along the entire length of the segment, and subsequent removal of all existing subtransmission structures. The new structures would be tubular steel poles (TSP), ranging in height from 72 to 137 feet, while the existing poles are of varying types and are up to 132 feet tall.

Construction Effects on Recreational Resources outside of the Ivanpah-Control ROW

NO IMPACT. Indirect effects to recreation during construction would result from construction noise, dust, and traffic. Depending on the location of construction activities with respect to recreation areas, construction disturbances could diminish the experience and could negatively affect a visitor's enjoyment of recreational resources near the Proposed Project. As presented in Table 3.18-1, there are no recreational resources in Segment 2 that would be indirectly affected. Therefore, no adverse effects to recreational resources would occur. (No Impact).

Construction Effects on Recreational Resources within the Ivanpah-Control ROW

Areas Not Specified Below. *LESS THAN SIGNIFICANT.* Direct effects to recreation include physical impacts, such as disrupting access to a recreational area, or causing a disturbance within the area. Six recreational resources in Segment 2 that could be directly affected by Proposed Project construction are listed in Table 3.18-2. These recreational resources would also be subject to indirect effects from construction, such as disturbance created by noise, dust, or traffic.

In general, Segment 2 runs adjacent to US 395, with El Paso/Rand SRMA on the west side, and Red Mountain SRMA on the east side. Randsburg Ghost Town is within the El Paso/Rand SRMA. The El Paso to Golden ACEC, Fremont Kramer ACEC, and Mohave Ground Squirrel ACEC all overlap with the El Paso/Rand SRMA. Construction would occur near US 395, within both SRMAs.

There are many BLM open routes that would be crossed by the Proposed Project ROW. Because construction activities move along the ROW and are temporary, access to these routes would not be blocked for long periods of time, if at all. Due to the limited range of construction effects, in both time and extent, construction impacts on BLM open routes would be less than significant and no mitigation is required (Class III). Randsburg Ghost Town, El Paso/Rand SRMA, and Red Mountain SRMA would be directly affected by Project construction as discussed below.

Randsburg Ghost Town. *LESS THAN SIGNIFICANT WITH MITIGATION*. Segment 2 of the Proposed Project passes just east of the historic town center, where the Ivanpah-Control 115 kV line parallels a much larger 230 kV line. Randsburg is known as a living ghost town, mostly visited by tourists as a day-trip destination or as a jumping off point for other recreation opportunities in the area, such as OHV use. The indirect impacts

due to a change in the viewshed from the Randsburg Ghost Town site are addressed in Section 3.2, Aesthetics. The proximity of construction may cause temporary disturbance due to dust, noise, and increased traffic.

The use of helicopters for construction would create noise, and other ground-disturbing construction activities would create dust, both of which are significant due to the close proximity of the construction areas to the Randsburg Ghost Town. As discussed in Section 3.15 (Noise), APM NOI-1 would not be sufficient to avoid noise impacts to this resource, because the APM does not include helicopter route avoidance for recreational areas. Significant noise impacts would be controlled by implementation of Mitigation Measure N-1a (Helicopter Noise Control Strategy, superseding APM NOI-1). This measure would control helicopter noise by defining helicopter flight corridors, requiring minimum transit elevations above ground level to avoid noise-sensitive receptors on the ground, and limiting hovering time, which would result in a less than significant impact (Class II).

As discussed in Section 3.4 (Air Quality), even with dust control measures set by the Eastern Kern Air Pollution Control District, dust created by construction activities could result in a significant impact, which would create the disturbance for recreationists. Significant dust impacts would be controlled by implementation of Mitigation Measure AQ-2b (Control Fugitive Dust Emissions; see Section 3.4), which would require implementation of specific measures to prevent dust.

Construction activity could temporarily reduce or block access to Randsburg Ghost Town because the existing ROW spans roads that are used to access the town. Blocking access to Randsburg Ghost Town would be a significant impact. Mitigation Measure T-1a (Prepare Construction Transportation Plan), is recommended to ensure that construction vehicles would not cause a disturbance. It would reduce the number of project-generated vehicles at each site and require that the vehicles are parked appropriately without blocking roadways. This measure would ensure that the roads used to access Randsburg Ghost Town are not blocked or congested with construction vehicles.

As a result of implementing Mitigation Measure N-1a (Helicopter Noise Control Strategy; superseding APM NOI-1), Mitigation Measure AQ-2b (Control Fugitive Dust Emissions), and Mitigation Measure T-1a (Prepare Construction Transportation Plan), the impact to the community of Randsburg would be less than Significant.

El Paso/Rand SRMA. *LESS THAN SIGNIFICANT WITH MITIGATION*. The Project ROW crosses this SRMA for approximately 22 miles in the area southwest of Ridgecrest and west of US 395. The El Paso to Golden, Fremont Kramer, and Mohave Ground Squirrel ACECs all overlap the El Paso/Rand SRMA and Proposed Project ROW. This SRMA is primarily used for motorized recreation, trail riding, and climbing in the Rand Mountains, as well as nature walks, hiking, studies and photography. No access to the SRMA would be blocked because of Proposed Project construction, as the SRMA is in close proximity to four highways, which provide several ways to access the SRMA. Depending on the location of recreational users, the dust, noise, and increased traffic could create a disturbance that would temporarily reduce the desirability of non-motorized activities during construction. However, these effects would be concentrated near the Proposed Project ROW. The SRMA contains 177,254 acres of BLM land, so due to the relative size of the ROW compared to the vast amount of open land in the SRMA available for use, it is unlikely that the small area of construction would significantly disturb a large number of users. Therefore, the impact is less than significant.

However, it is noted that indirect effects to recreation caused by noise and dust would be reduced by the implementation of Mitigation Measure N-1a (Helicopter Noise Control Strategy; superseding APM NOI-1) and Mitigation Measure AQ-2b (Control Fugitive Dust Emissions).

Red Mountain SRMA. *LESS THAN SIGNIFICANT WITH MITIGATION*. The Proposed Project ROW crosses this SRMA for approximately 3 miles, located directly east of US 395, and approximately 5 miles south of SR-178. Many types of recreation occur here, with motorized recreation being the primary activity. Indirect effects to recreation caused by noise and dust would be concentrated near the Proposed Project ROW and would

be potentially significant, even with implementation of APM NOI-1. The impact would be less than significant with implementation of Mitigation Measure N-1a (Helicopter Noise Control Strategy; superseding APM NOI-1) and Mitigation Measure AQ-2b (Control Fugitive Dust Emissions). The Spangler Hills OHV area, within the SRMA, is located approximately 3 miles east of the Proposed Project ROW. This separation distance would result in disturbance effects being minimal from the perspective of OHV users. The SRMA is easily accessible due to its proximity to several highways. Access would be maintained through construction, and therefore users would not be disrupted due to restricted access to the recreational resource.

Additionally, due to the relative size of the Proposed Project ROW compared to the vast amount of open land in the SRMA, over 300,000 acres, impacts would be less than significant (Class II) with implementation of Mitigation Measure N-1a (Helicopter Noise Control Strategy; superseding APM NOI-1) and Mitigation Measure AQ-2b (Control Fugitive Dust Emissions).

Operations and Maintenance

NO IMPACT. The Proposed Project is replacing existing powerlines, within or adjacent to the existing ROW, and will require similar operations and maintenance activities as does the existing subtransmission line. Because the entire line in Segment 2 would be replaced, it is likely that the operations and maintenance activities would be less intense for the new structures, compared to the existing structures that are over 100 years old. The appearance of the structures would change, because the existing poles would be replaced with taller but potentially slimmer poles. The appearance of the new line would not be significantly different from the current scenario. The change in pole types and heights would not disrupt the recreational experience or cause a temporary reduction in access or visitation. The continued presence of the re-built line in nearly the same location as the existing line would not disrupt recreational activities and would not block or reduce access. Therefore, there would be no impact.

Mitigation Measures for Impact REC-1 (Segment 2)

AQ-2b **Control Fugitive Dust Emissions.** (See full text in Section 3.4, Air Quality)

T-1a **Prepare Construction Transportation Plan.** (See full text in Section 3.19, Transportation)

Impact REC-2: Damage recreational trails or facilities.

Construction

LESS THAN SIGNIFICANT. Direct effects to recreation would be actions creating physical damage to recreational trails or facilities. Table 3.18-2 presents the 6 recreational areas whose facilities could experience damage from construction. However, none of these recreation areas have facilities or trails immediately adjacent to the ROW, so no damage is anticipated from construction. Impacts would be less than significant, and no mitigation is required.

Operations and Maintenance

NO IMPACT. The operations and maintenance activities occurring after the Proposed Project is constructed would be similar to ongoing operations and maintenance activities. Therefore, no adverse effects to recreational resources would occur.

3.18.3.6. Segment 3N: Kramer Junction to Daggett

Impact REC-1: Disrupt recreational activities, temporarily blocking or reducing access and visitation to recreational areas.

Construction

Construction of Segment 3N would include replacing existing conductor with new conductor, replacing 45 existing structures (H-Frame LWS and Wood, and Wood Multipole) with 45 new structures of a similar kind, and installing interset structures. The new structures would range in height from 60 to 70 feet, while the existing poles are 58 to 66 feet. Replacement and interset structures in Segments 3N would be installed within SCE's existing ROW.

Construction Effects on Recreational Resources outside of the Ivanpah-Control ROW

Areas Not Specified Below. *LESS THAN SIGNIFICANT*. Indirect effects to recreation during construction would result from construction noise, dust, and traffic. Depending on the location of construction activities with respect to recreation areas, construction disturbances could diminish the experience and could negatively affect a visitor's enjoyment of recreational resources near the Proposed Project.

The recreational resources not directly affected by the Project are listed in Table 3.18-1, including Harper Dry Lake Wildlife Viewing Area, the Barstow/Calico KOA, and the Superior/Rainbow SRMA. As defined in Table 3.18-1, these sites range in distance to the ROW from approximately 0.4 to 1 mile. For these recreational resources, construction may cause temporary road closures on roads used to access them. However, any road closures for stringing across major highways and roads would be temporary occurrences, as described in Section 2.4.2.4.

Harper Dry Lake Wildlife Viewing Area. *LESS THAN SIGNIFICANT*. The nearest construction activities to the Harper Dry Lake Wildlife Viewing Area would be approximately 1 mile south of the wildlife viewing area. There is an existing solar field south of the viewing area, and north of the Proposed Project ROW. The presence of the solar field means that there is existing operation and maintenance occurring, creating minor amounts of noise and traffic. Due to this distance and presence of an existing solar field that itself generates noise and traffic, the Project-generated noise, dust, and traffic would not disrupt recreation. Impacts would be less than significant.

Superior/Rainbow SRMA. *LESS THAN SIGNIFICANT*. The nearest construction activities would occur approximately 0.5 miles southeast of the southern border of the SRMA. This SRMA contains 115,460 acres of BLM land, and includes visitor facilities such as a developed campground, hiking trail, and scenic loop. The campground is approximately 3 miles from the nearest construction activity. Additionally, other recreation uses such as hiking would occur within the SRMA, creating distance between the construction activities occurring 0.5 miles outside the southern boundary of the SRMA. Due to this distance between construction activities and recreational users, noise, dust, and traffic would not cause a disturbance. Impacts would be less than significant.

Barstow/Calico KOA. *LESS THAN SIGNIFICANT*. The nearest structure that would be replaced in Segment 3N would be approximately 0.8 miles south of the KOA campground. Construction traffic would not preclude access to the campground because it is accessed by a road that is unaffected by the Proposed Project ROW. Temporary construction effects like dust and noise could disrupt the experience of recreationists at this campground, but due to the distance, noise, dust, and traffic disturbance would be less than significant.

Construction Effects on Recreational Resources within the Ivanpah-Control ROW

LESS THAN SIGNIFICANT. Direct effects to recreation include physical impacts, such as disrupting access to a recreational area, or causing a disturbance within the area. Two recreational resources that could be directly affected by the Proposed Project construction are listed in Table 3.18-2: the Fremont Kramer ACEC

and the Superior Cronese ACEC. These recreational resources would also be subject to indirect effects from construction, such as disturbance created by noise, dust, or traffic.

These two ACECs would experience direct effects from construction of the Proposed Project because the Proposed Project ROW is within the ACEC boundaries. However, effects would be limited to the areas in and around the Proposed Project ROW. The temporary construction activities would not block access or disrupt recreational activities in the ACECs, even if the recreational experience were somewhat diminished during construction activities due to indirect effects such as noise, dust, and traffic. Due to the limited range of construction effects, in both time and extent, construction impacts would be less than significant, and no mitigation is required.

There are many BLM open routes that would be crossed by the Proposed Project ROW. Because construction activities move along the ROW and are temporary, access to these routes would not be blocked for long periods of time, if at all. Due to the limited range of construction effects, in both time and extent, construction impacts on BLM open routes would be less than significant and no mitigation is required.

Operations and Maintenance

NO IMPACT. In Segment 3N, existing subtransmission structures would be replaced with wood multipole structures and LWS or wood H-frames. The new transmission structures would not be significantly different from the existing conditions. The Proposed Project would require similar operations and maintenance activities as the current, ongoing operations and maintenance activities, and thus the Proposed Project would result in no impacts.

Impact REC-2: Damage recreational trails or facilities.

Construction

NO IMPACT. Direct effects of construction would be actions creating physical damage to recreational trails or facilities. Two recreational resources that are directly affected by the Proposed Project are the Fremont Kramer ACEC and the Superior Cronese ACEC. However, none of these recreation areas have facilities or trails immediately adjacent to the ROW, so no damage is anticipated from construction and no impact would occur.

Operations and Maintenance

NO IMPACT. In Segment 3N, existing subtransmission structures would be replaced with wood multipole structures and LWS or wood H-frames. The Proposed Project would require similar operations and maintenance activities as the current scenario. These activities would not affect operations and maintenance activities in a way that would damage recreation trails and facilities and adverse effects to recreational resources would occur.

3.18.3.7. Segment 3S: Kramer Junction to Barstow to Daggett

Impact REC-1: Disrupt recreational activities, temporarily blocking or reducing access and visitation to recreational areas.

Construction

Construction of Segment 3S would include replacing existing conductor with new conductor, replacing 42 existing structures (Multipole TSP, H-Frame LWS or Wood, and Multipole Wood) with 42 new structures of a similar kind, and installing interset structures. The new structures would range in height from 57 to 74 feet, while the existing poles are 57 to 77 feet. Replacement and interset structures in Segment 3S would be installed within SCE's existing ROW.

Construction Effects on Recreational Resources outside of the Ivanpah-Control ROW

LESS THAN SIGNIFICANT. Indirect effects to recreation during construction are noise, dust, and traffic. The recreational resources not directly affected by the Project are listed in Table 3.18-1. These are the Robert A. Sessions Memorial Sports Park and the Barstow Heights Park, which range in distance to the ROW from 800 feet to approximately 1 mile. Construction may require temporary road closures on roads used to access these parks. However, any road closures for stringing across major highways and roads would be temporary occurrences. Due to the limited range of construction effects, in both time and extent, construction impacts due to noise, dust, and traffic would be less than significant, and no mitigation is required.

Construction Effects on Recreational Resources within the Ivanpah-Control ROW

LESS THAN SIGNIFICANT. Direct effects to recreation include physical impacts, such as disrupting access to a recreational area, or causing a disturbance within the area. Five recreational resources that are directly affected by the Proposed Project in Segment 3S are listed in Table 3.18-2. These recreational resources would also be subject to indirect effects from construction, such as disturbance created by noise, dust, or traffic.

The Fremont Kramer and Superior Cronese ACECs would experience direct effects from construction, but the effects would be limited to the areas in and around the Proposed Project ROW. The temporary effects of construction would not block access or disrupt recreational activities in the ACECs, even if the recreational experience were somewhat diminished during construction activities. Due to the limited range of construction effects, in both time and extent, construction impacts would be less than significant, and no mitigation is required.

There are many BLM open routes that would be crossed by the Proposed Project ROW. Because construction activities move along the ROW and are temporary, access to these routes would not be blocked for long periods of time, if at all. Due to the limited range of construction effects, in both time and extent, construction impacts on BLM open routes would be less than significant and no mitigation is required.

Stoddard/Johnson SRMA. *LESS THAN SIGNIFICANT*. The Stoddard/Johnson SRMA also includes the Stoddard Valley OHV Area. The Proposed Project ROW intersects approximately two miles of the SRMA, on its northern boundary. Approximately 3 structures would be replaced in the eastern portion of the SRMA, outside of the OHV area. Because construction would be in the northern part of the SRMA, on the northern border, noise, dust, and traffic would not disrupt recreational activities, due to the distance between the construction activities and recreational users. There are multiple access points to this SRMA, and therefore the Proposed Project would not block access to this recreational area. Additionally, this SRMA overlaps with the Daggett Ridge Monkey Flower ACEC, where recreation uses are limited. The main use in this SRMA is OHV use. The SRMA contains 276,957 acres of BLM land, therefore due to the relatively small areas of construction (approximately 30,000 ft^2 or 0.7 acre for each pole), compared to the vast amount of land in the SRMA, recreationists would have enough room, and be at a distance great enough that construction disturbances would be unnoticeable. Therefore, impacts to the Stoddard/Johnson SRMA and the Daggett Ridge Monkey Flower ACEC would be less than significant.

Old Spanish National Historic Trail. *NO IMPACT*. The Proposed Project ROW crosses the approximate route of the Old Spanish National Historic Trail. The nearest replacement tower is approximately 0.5 miles south of the trail. This portion of the Old Spanish National Historic Trail is within the City of Barstow and is not marked as a recreational trail or route. Construction would not block access to the trail. There would be no impact.

Operations and Maintenance

NO IMPACT. In Segment 3S, existing subtransmission structures will be replaced with multipole TSPs, wood or LWS H-frames, and wood multipole structures. The new transmission structures would not be significantly different from the existing conditions. The Proposed Project would require similar operations and maintenance activities as the current, ongoing operations and maintenance activities, and thus the Proposed Project would result in no impacts.

Impact REC-2: Damage recreational trails or facilities.

Construction

LESS THAN SIGNIFICANT. Direct effects to recreation include physical impacts, such as disrupting access to a recreational area, or causing a disturbance within the area. Five recreational resources that are directly affected by the Proposed Project are listed in Table 3.18-2. None of the recreational resources presented in Table 3.18-2 have any trails or established facilities that could be damaged by the Project. Although the Old Spanish National Historic Trail crosses the Proposed Project's ROW, the trail is not marked or used in the City of Barstow for recreation due to its location in a developed area, therefore there are no facilities that could be damaged by project construction. Impacts would be less than significant.

Operations and Maintenance

NO IMPACT. In Segment 3S, existing subtransmission structures would be replaced with multipole TSPs, wood or LWS H-frames, and wood multipole structures. These activities would not affect operations and maintenance activities in a way that would damage recreation trails and facilities. Therefore, no adverse effects to recreational resources would occur.

3.18.4. Mitigation Monitoring, Compliance, and Reporting

Table 3.18-4 presents the mitigation monitoring, compliance, and reporting information for recreation.

Table 3.18-4. Mitigation Monitoring Program – Recreation

Mitigation Component	Text or Description
Mitigation Measure REC-1a	Coordinate construction schedule and activities and identify alternative recreation areas
Location	Baker Creek Campground, Fossil Falls ACEC and Campground, and Taboose Creek Campground (Inyo County; Crater Mountain Realignment Alternative only
Monitoring / Reporting Action	SCE documents and submits coordination with Inyo County, NPS, and BLM to CPUC
Effectiveness Criteria	Notification of proposed construction schedule and identification of alternative or replacement recreation areas or facilities coordinated with CPUC, NPS, BLM, Inyo County.
Responsible Agency	CPUC, BLM, Inyo County
Timing	90 days prior to construction

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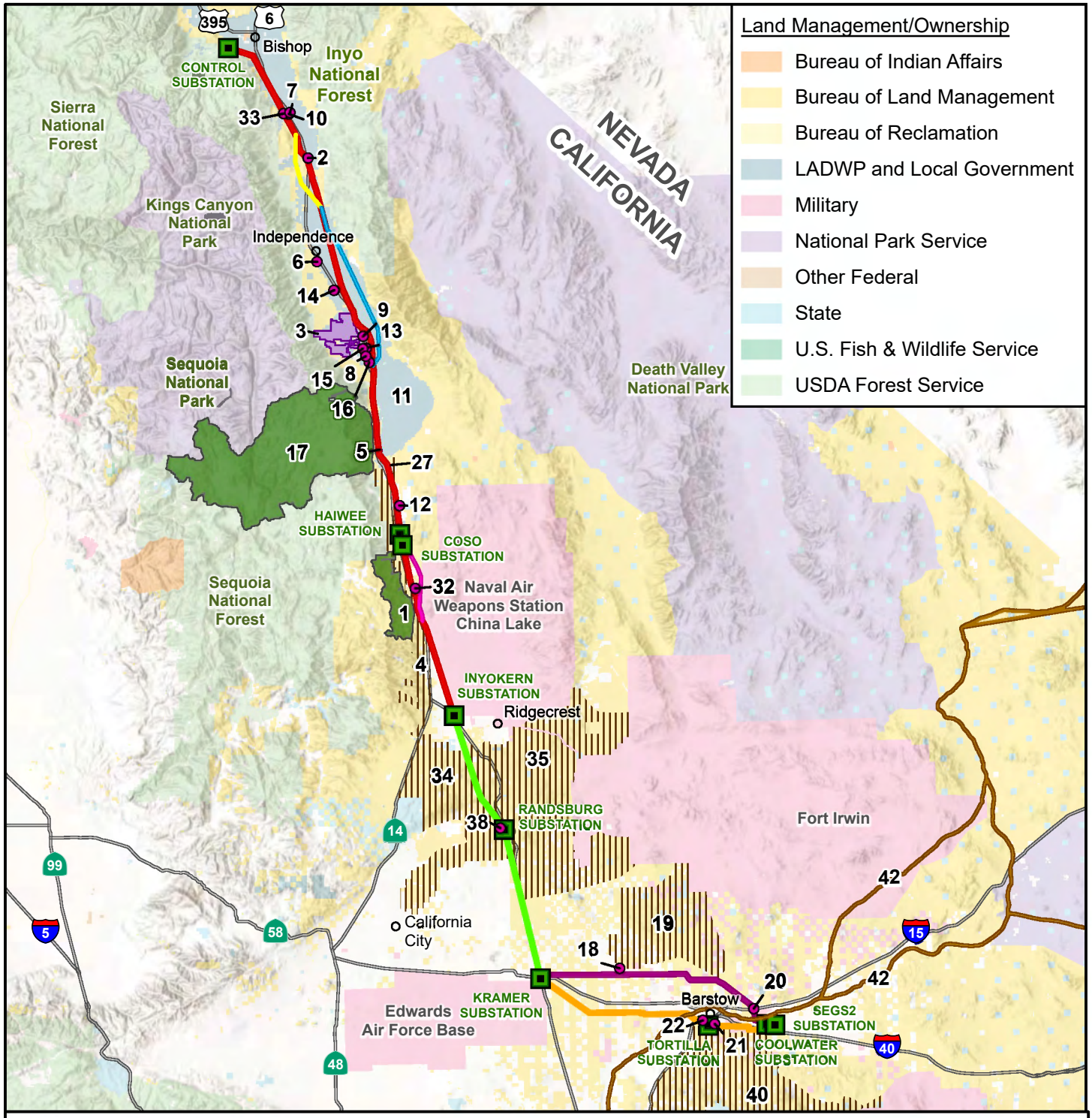


Source: Aspen, 2024; BLM, 2024; CAL FIRE, 2024; CDFW, 2024; ESRI, 2024; Inyo County, 2024; SCE, 2024.

Figure 3.18-1
Overview of Recreational Areas

Recreational Areas
- BLM SRMA
- National Scenic Area
- Wilderness Area
- Wildlife Area

Ivanpah-Control Proposed Project Segments
- Segment 1: Control-Haiwee-Inyokern
- Segment 2: Inyokern-Kramer
- Segment 3N: Kramer-Coolwater
- Segment 3S: Kramer-Tortilla-Coolwater

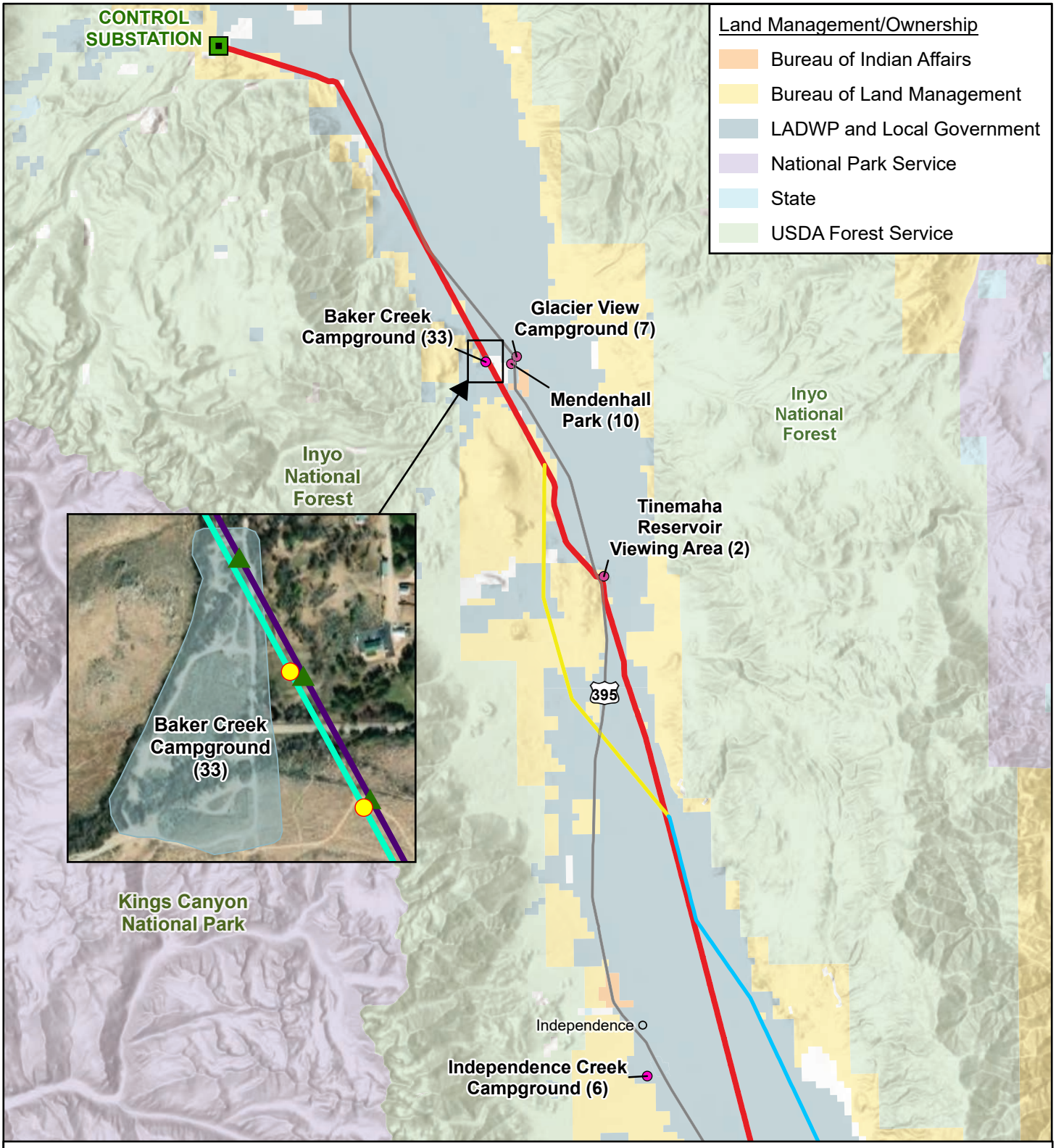
Ivanpah-Control Project Alternatives
- Crater Mountain Realignment Alternative
- Fossil Falls Realignment Alternative
- Manzanar Realignment Alternative

- Recreational Site
- Substation
- Old Spanish National Historic Trail

1:1,584,000

N 0 20 miles

**Resource numbers are defined in Tables 3.18-1 and 3.18-2.*



Source: Aspen, 2024; BLM, 2024; CAL FIRE, 2024; CDFW, 2024; ESRI, 2024; Inyo County, 2024; SCE, 2024.

Recreational Sites
Substation

Ivanpah-Control Proposed Project Segments
Segment 1: Control-Haiwee-Inyokern

Ivanpah-Control Project Alternatives
Crater Mountain Realignment Alternative
Manzanar Realignment Alternative

Subtransmission Structures
Proposed New Structure
Structure to be Removed

Subtransmission Alignment
New
Remove

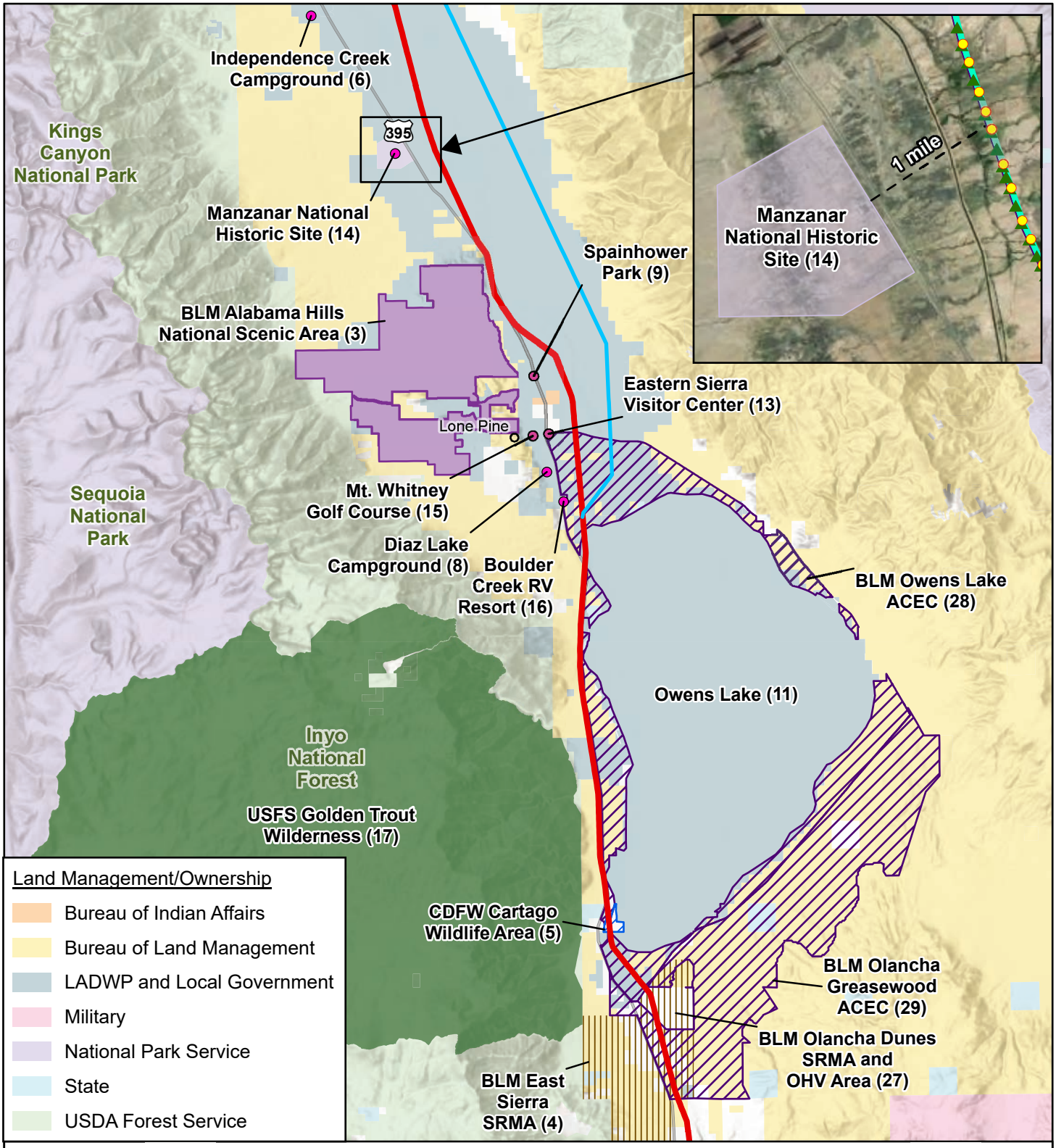
Resource numbers are defined in Tables 3.18-1 and 3.18-2.

Figure 3.18-2a

Recreation Areas Segment 1 North

1:316,800

N 0 5 miles



Source: Aspen, 2024; BLM, 2024; CAL FIRE, 2024; CDFW, 2024; ESRI, 2024; Inyo County, 2024; SCE, 2024.

Subtransmission Structures
- Proposed New Structure
- Structure to be Removed

Subtransmission Alignment
- New
- Remove

Ivanpah-Control Proposed Project Segments
- Segment 1: Control-Haiwee-Inyokern

Ivanpah-Control Project Alternatives
- Manzanar Realignment Alternative

Recreational Areas
- BLM ACEC
- National Monument
- BLM SRMA
- Wilderness Area
- Wildlife Area
- Recreational Site
- Substation

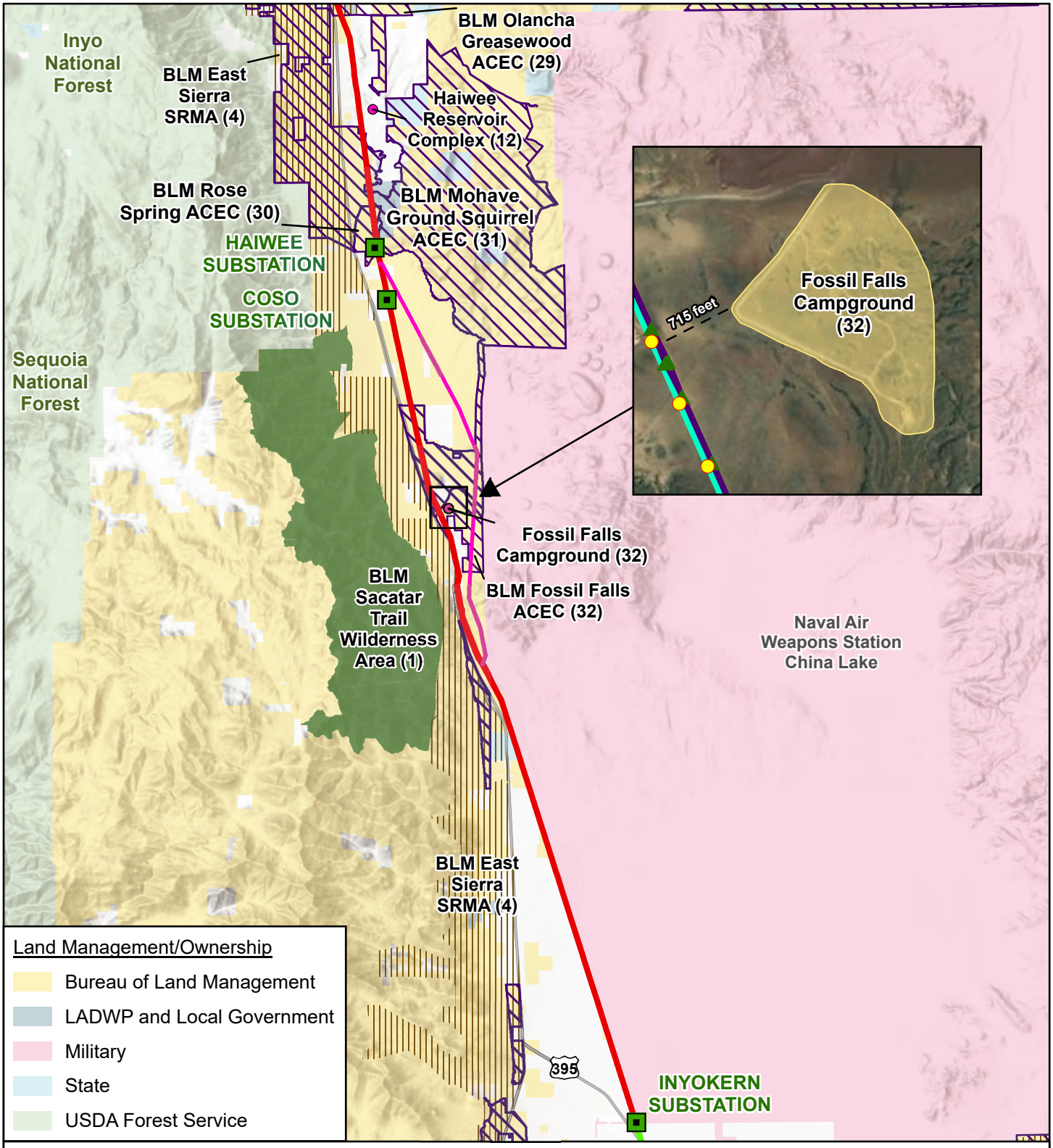
1:316,800

N 0 5 miles

Resource numbers are defined in Tables 3.18-1 and 3.18-2.

Figure 3.18-2b

Recreation Areas Segment 1 Central



Source: Aspen, 2024; BLM, 2024; CAL FIRE, 2024; CDFW, 2024; ESRI, 2024; Inyo County, 2024; SCE, 2024.

Recreational Site
Substation

Figure 3.18-2c

Recreation Areas Segment 1 South

Subtransmission Structures
- Proposed New Structure
- Structure to be Removed

Subtransmission Alignment
- New
- Remove

Ivanpah-Control Proposed Project Segments
- Segment 1: Control-Haiwee-Inyokern
- Segment 2: Inyokern-Kramer

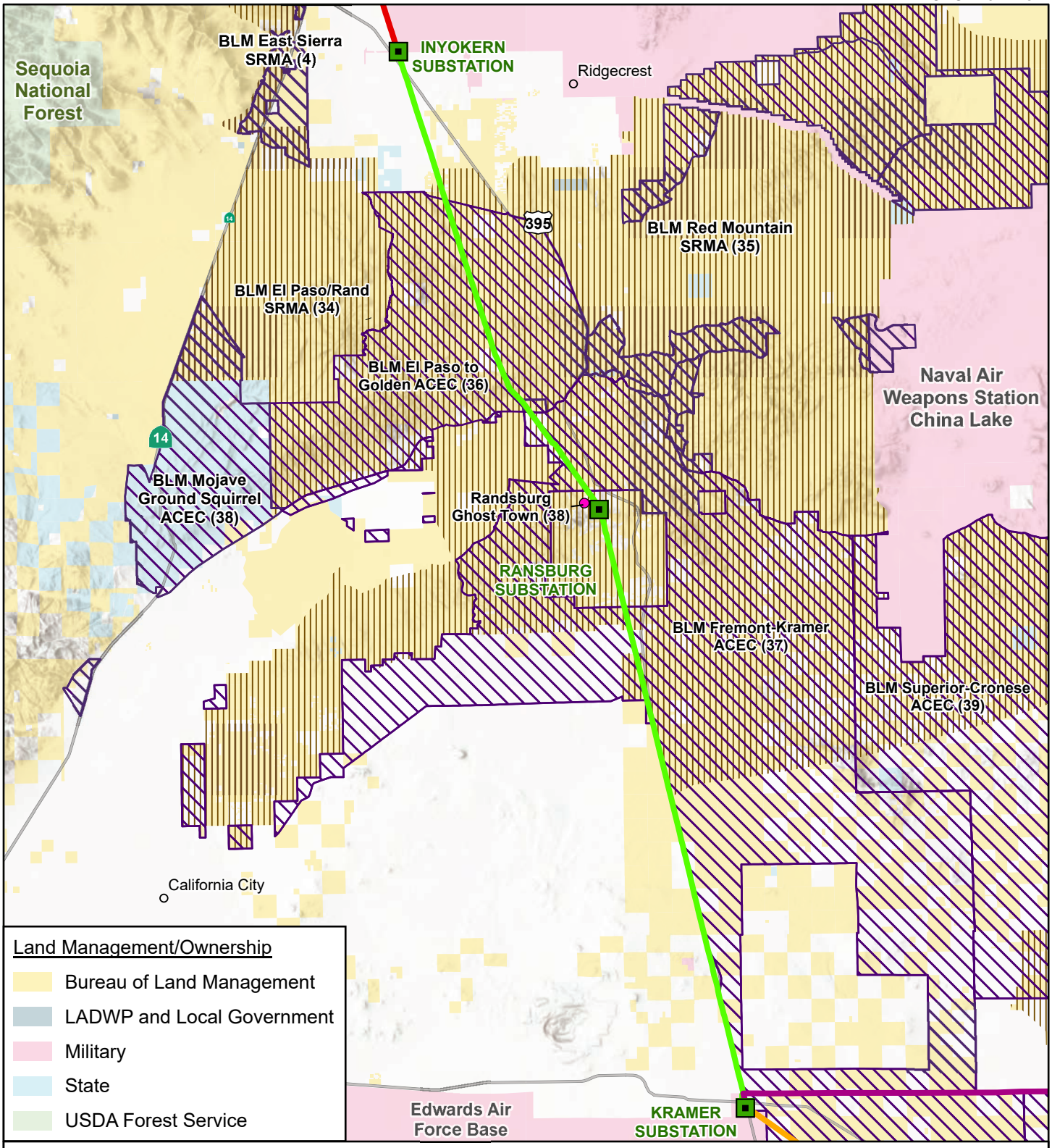
Ivanpah-Control Project Alternatives
- Fossil Falls Realignment Alternative

Recreational Areas
- BLM ACEC
- BLM SRMA
- Wilderness Area

1:316,800

N 0 5 miles

Resource numbers are defined in Tables 3.18-1 and 3.18-2.



Source: Aspen, 2024; BLM, 2024; CAL FIRE, 2024; CDFW, 2024; ESRI, 2024; Inyo County, 2024; SCE, 2024.

Figure 3.18-3

Recreation Areas Segment 2

Ivanpah-Control Proposed Project Segments
- Segment 1: Control-Haiwee-Inyokern
- Segment 2: Inyokern-Kramer
- Segment 3N: Kramer-Coolwater
- Segment 3S: Kramer-Tortilla-Coolwater

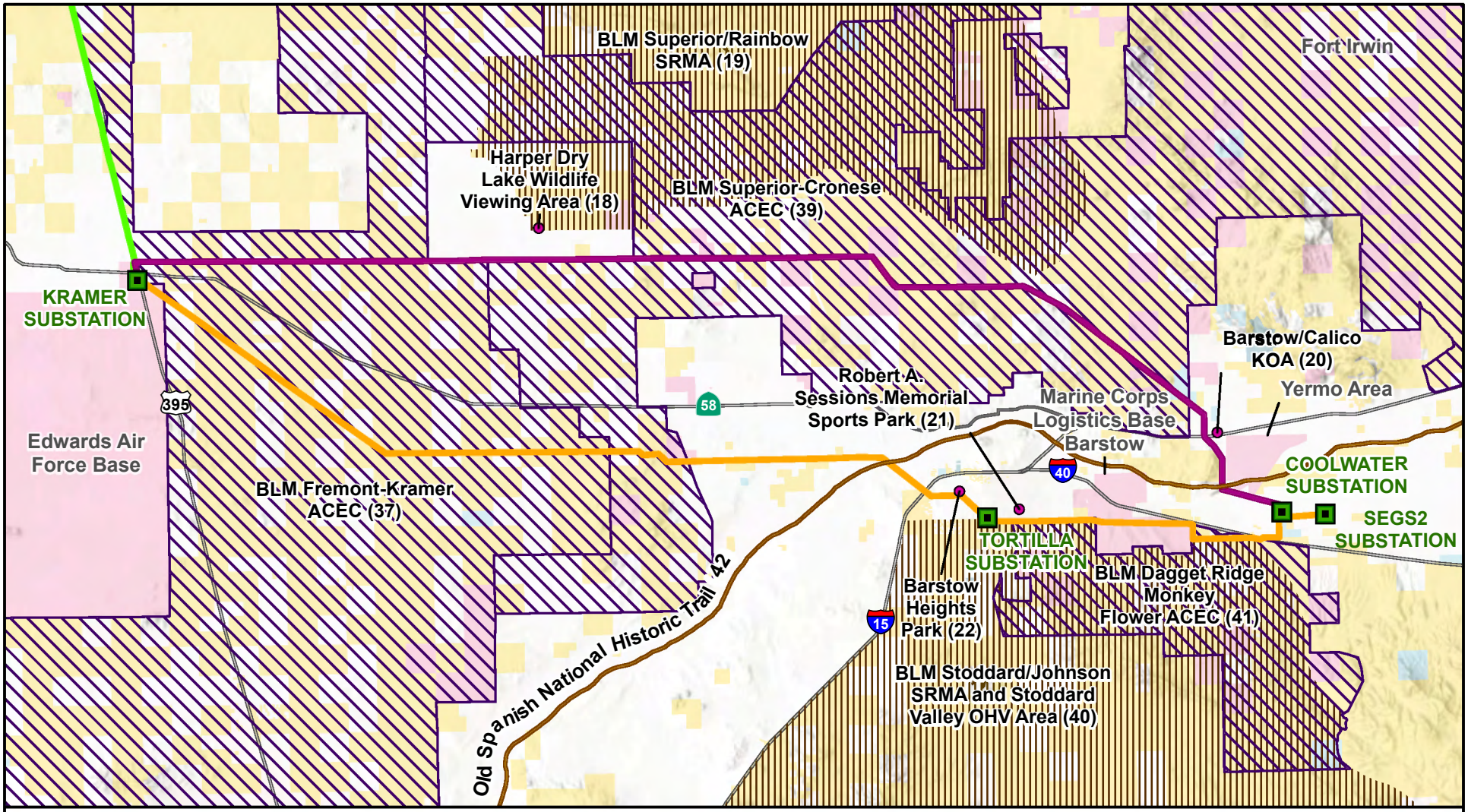
- Recreational Site
- Substation

Recreational Areas
- BLM ACEC
- BLM SRMA

1:380,000

N 0 5 miles

**Resource numbers are defined in Tables 3.18-1 and 3.18-2.*



Source: Aspen, 2024; BLM, 2024; CAL FIRE, 2024; CDFW, 2024; ESRI, 2024; Inyo County, 2024; SCE, 2024.

Figure 3.18-4

Recreation Areas Segments 3N and 3S

Ivanpah-Control Proposed Project Segments
- Segment 2: Inyokern-Kramer
- Segment 3N: Kramer-Coolwater
- Segment 3S: Kramer-Tortilla-Coolwater

Land Management/Ownership
- Bureau of Land Management
- LADWP and Local Government
- Military
- State

- Recreational Site
- Substation
- Old Spanish National Historic Trail

Recreational Areas
- ACEC
- SRMA

1:316,800

N 0 5 miles

**Resource numbers are defined in Tables 3.18-1 and 3.18-2.*

3.19. Transportation

This section describes existing environmental conditions and anticipated impacts associated with the proposed Ivanpah-Control (I-C) Project for transportation resources. Impacts evaluated in this section include roadway congestion, roadway safety, vehicle miles travelled, public transportation facilities (such as bicycle and pedestrian facilities), railroads, and aviation (airports and use of airspace).

The environmental setting for transportation resources is presented in Section 3.19.1 and relevant regulations and standards are summarized in Section 3.19.2. Within Section 3.19.3, potential impacts on transportation facilities associated with implementation of the Proposed Project are presented. These impacts are discussed for the I-C Project as a whole, and by segment (where applicable). Within these impact discussions, mitigation measures are proposed, as needed, to reduce or avoid significant adverse impacts on transportation resources. Section 3.19.4 presents the mitigation monitoring, compliance, and reporting information. Finally, Section 3.19.5 provides references cited within this chapter. Chapter 4 describes potential impacts of various alternatives to the I-C Project. Cumulative impacts for all environmental resource disciplines are considered in Chapter 5.

During the scoping period for this EIR, written and verbal comments were received from agencies, organizations, and the public. These comments identified any substantive issues and concerns relevant to the EIR analysis for transportation, as summarized below:

- California Department of Transportation (Caltrans) District 8 commented that the Proposed Project may encroach into highway facilities with installation of new structures, replacing conduit, and during installation of lightning protection and communication equipment on the lines. Caltrans indicated that encroachment into highways for the new installations or any associated activity would require issuance of a Caltrans Encroachment Permit.

3.19.1. Environmental Setting

The environmental setting section describes the existing conditions for transportation and traffic in the area of the I-C Project route. Data for affected transportation facilities were collected and analyzed based on route maps provided by Southern California Edison (SCE) and other maps from various reports and websites from the State and local agencies. Traffic volume data were obtained by SCE from agency websites and reports, as available, and peer reviewed for accuracy and applicability.

3.19.1.1. Regional Setting

The I-C Project route traverses lands within unincorporated Inyo, Kern, and San Bernardino Counties, and the City of Barstow. The upgrades proposed under the I-C Project would occur within an existing SCE right-of-way (ROW) already containing high voltage electric transmission lines. The predominant land use adjacent to the I-C Project ROW is open space. Scattered residential land uses are also found along each of the segments. Also, lands associated with institutional uses (primarily military facilities) are located adjacent to all segments.

Surface Transportation

Traffic would be generated on local and regional roadways due to the movement of construction crews, equipment, and materials required to implement the I-C Project. In addition to vehicle trips associated with construction, in some instances, temporary road or travel lane closures would be required. Activities associated with the I-C Project that may require such temporary closures would include the stringing of overhead conductor and ground wires across roads, replacement of transmission structures located immediately adjacent to roads, and the movement of large equipment on public roads. Much of the I-C Project route is located near highways and public roadways.

Regional Highways

The regional transportation system accessing the I-C Project route is comprised of Interstate and State Highways, which include Interstate 15 (I-15), I-40, US 395, State Route (SR) 31, SR-91, SR-58, SR-127, SR-136, SR-168, SR-178, and SR-190. These highways would provide regional access to construction workers and materials delivery trucks to reach assembly points, yards, and work sites along the Project's full route. These regional highways connect to local roads, which connect to access or spur roads, which connect to the I-C Project ROW. Average daily traffic and peak hour traffic volumes on various sections of these highways is shown in Table 3.19-1. Peak hour normally occurs every weekday, during what is considered "rush hour" traffic (Caltrans, 2022).

Table 3.19-1. Average Daily Traffic on Highways

Project Segment	Location	Highway	Section	Peak Hour Traffic Volumes	Average Daily Traffic
1	Inyo County	US 395	Junction with SR-168 (Bishop)	1,500	13,800
	Inyo County	US 395	Junction with SR-168 (Big Pine)	1,050	6,200
	Inyo County	US 395	Junction with SR-136 (Lone Pine)	1,200	7,400
	Inyo County	US 395	Junction with SR-190 (Olancha)	1,200	7,300
	Kern County	US 395	Junction with SR-14 (Inyokern)	510	3,800
	Kern County	US 395	Junction with SR-178 (Inyokern)	360	3,800
	Inyo County	SR-136	Junction with US 395 (Lone Pine)	80	510
	Inyo County	SR-190	Junction with US 395 (Olancha)	30	160
2	Kern County/ San Bernardino County	US 395	Junction with Randsburg Road	600	4,860
	San Bernardino County	US 395	Junction with SR-58	920	7,550
	San Bernardino County	SR-58	Junction with US 395	1,350	12,000
	Kern County	SR-178	Junction with US 395	960	3,000
3N	San Bernardino County	SR-58	Junction with US 395	1,350	12,000
	San Bernardino County	US 395	Junction with SR-58	920	7,550
	San Bernardino County	I-5	Junction with Ghost Town Road	5,200	47,500
3S	San Bernardino County	US 395	Junction with SR-58	920	7,550
	San Bernardino County	SR-58	Junction with Harper Lake Road	1,600	15,200
	San Bernardino County	SR-58	Junction with I-15	1,850	17,000
	San Bernardino County	I-15	Junction with SR-58	7,200	72,000
	San Bernardino County	SR-247	Junction with I-15	1,600	16,000
	San Bernardino County	I-40	Junction with A Street	2,750	20,5000

Source: SCE 2020, Table 4.17 3. Caltrans 2022, Traffic Census.

Local Roadways

From the regional routes listed in Table 3.19-1, numerous existing public and private local roads connect to access/spur roads connecting to the I-C Project ROW. Due to the remote nature of many of these roads, existing traffic volumes are not available. However, local public roads providing access to the IC corridor are expected to primarily support rural residential and other trips associated with local access and connections to the nearest freeway. Existing access roads and spur roads that connect directly to the I-C Project ROW are primarily located within existing transmission corridors, are covered under easements, or are open roads on lands administered by the federal government.

Railroad

Burlington Northern and Santa Fe Railway (BNSF) and Union Pacific Railroad (UPRR) operate freight and passenger rail lines in the vicinity of several segments of the I-C Project route.

Air Transportation

There are 16 public airports, 21 private airports, and 8 private heliports within Kern County. In Inyo County, there are seven publicly-operated airports, six private airstrips, and one private heliport. There are 44 public and private airports operating throughout San Bernardino County. San Bernardino County manages, operates, and maintains six of these facilities. San Bernardino County also has a total of 25 heliports; 4 are publicly-operated, 11 are for private medical use, and 10 are for private general use.

In addition to these public and private airports, the I-C Project is located within proximity of several military installations and below airspace designated for low flying military aircraft training operations. The I-C Project route runs proximate to Naval Air Weapons Station China Lake (within unincorporated Kern and Inyo Counties), Edwards Air Force Base (within unincorporated San Bernardino County), and Marine Corps Logics Base Barstow (within unincorporated San Bernardino County). These military installations all include aviation facilities (runways, helicopter landing pads, etc.).

Public Transportation Facilities

The I-C Project route is located in Caltrans District 8 and District 9. In District 8, bicyclists are permitted on certain highway routes. In the vicinity of the I-C Project route, bicyclists are permitted to use the shoulder along US 395, SR-18, SR-58, SR-127, and SR-247. Bicyclists are generally prohibited on all other highways proximate to the I-C Project route.

In Caltrans District 9, bicyclists are allowed on all highways in the vicinity of the I-C Project route with a few exceptions. Bicyclists are generally prohibited on SR-14 and SR-58. Bikes are allowed on US 395, however there is no official bikeway designation except the segment through Bishop, which is designated a Class II bikeway. Additional Class I, II, and III bikeways[1] are found along portions of the following roadways in Bishop:

- Class I: Sierra Street Path; South Barlow Lane
- Class II: North Barlow Lane, Saniger Lane, SR-168
- Class III: Sunland Drive

All bikeways described above are those proximate to the Project, likely to be shared with project-related vehicles. Bikeways crossed by the I-C Project route are provided below in Section 3.19.1.2 by Project segment.

Eastern Sierra Transit Authority is the operator of public transportation for the Eastern Sierra Region, including Inyo County. The agency operates both inter-city and local service. They also offer dial-a-ride service to disabled passengers in all service areas, and to the general public in areas where there is no scheduled fixed-route service. Kern Regional Transit is the main public transit operator for Kern County, providing connections for outlying regions. There are seven public transit agencies that operate within San Bernardino County. These provide approximately 17.5 million passengers per year with access to a vast majority of the Valley and Mountain Regions of San Bernardino County and to the more developed areas of the Desert Region. Of the seven transit operators described above, six are located almost entirely within the County. The Victor Valley Transit Authority (VVTA) operates several bus routes in the vicinity of the I-C Project route within the City of Barstow.

[1] Class I is an off-road or shared-use path. Class II is a bike lane delineated only by paint. Class III is a facility where bike riders and car drivers share space, which is often marked by sharrows showing the preferred bicyclist lane position, or bike boulevard markings or signs.

3.19.1.2. Environmental Setting by Segment

The roadways that provide regional access to the entire I-C Project are discussed in Section 3.19.1.1. This section discusses roadways crossed by the I-C Project route by segment. Also discussed are airports located near the I-C Project route, rail lines crossed, and designated bicycle routes crossed by each segment of the I-C Project.

Segment 1: Bishop to Inyokern

Highways and Roadways

Segment 1 of the I-C Project is located in the Owens River valley and generally parallels US 395, crossing the following major transportation corridors:

- US 395 (four-lane) west of Tinemaha Reservoir
- US 395 northbound (two-lane) at two locations approximately 3 miles and 4 miles north of Lone Pine
- SR-136 (two-lane) at one location
- SR-190 (two-lane) at one location
- US 395 (four-lane) at one location approximately 7 miles south of Lone Pine
- US 395 (two-lane) at one location approximately 1 mile north of Cartago

Table 3.19-2 identifies the local roadways that would be crossed by the I-C Project within Segment 1.

Table 3.19-2. Local Roadways Crossed by the I-C Project – Segment 1

Inyo County				Kern County
Big Pine	Olancha	Unincorporated County		Unincorporated County
■ Baker Creek Rd.	■ Cactus Flats Rd.	■ Aberdeen Station Rd.	■ Griffith Rd.	■ Agnew Ave.
■ Big Pine Dump Rd.	■ Fall Rd.	■ Ash Creek Rd.	■ Haiwee Reservoir Rd.	■ Bow Ave.
■ Glacier Lodge Rd.		■ Big Pine Canal Rd.	■ Keough Hot Springs Rd.	■ Brown Rd.
■ Old Glacier Rd.		■ Bir Rd.	■ Manzanar Reward Rd.	■ Cutting Ave.
■ West St.		■ Carroll Creek Rd.	■ Mazourka Canyon Rd.	■ East Patrice Ave.
Wilkerson	Lone Pine	■ Cinder Rd.	■ North Halwee Rd.	■ Leliter Rd.
■ Collins Rd.	■ Lone Pine Narrow Gauge Rd.	■ Cottonwood Rd.	■ South Haiwee Rd.	■ Lorene Ave.
■ County Rd.	■ Sub Station Rd.	■ County Rd.	■ Sub Station Rd.	■ Patrice Ave.
■ Gerkin Rd.		■ Coyote Valley Rd.	■ Tinemaha Rd.	■ Pistachio St.
		■ East Elna Rd.	■ Warm Springs Rd.	■ Seibenthal Ave.
		■ Gill Station Coso Rd.		

Railroad

There are no active rail lines in the vicinity of Segment 1.

Air Transportation

The nearest public airports to Segment 1 are:

- Lone Pine Airport (approximately 0.9 mile west of the route) in Inyo County
- Independence Airport (approximately 2.6 miles west) in Inyo County
- Eastern Sierra Regional Airport (approximately 4.4 miles east) in Inyo County. The Inyo County Sheriff Search and Rescue Heliport is co-located with the Eastern Sierra Regional Airport.

In addition to these public airports, Segment 1 runs adjacent to Naval Air Weapons Station China Lake. This military installation includes two runways, which are located approximately 5 miles east of Segment 1. Near the southern portion of Segment 1, portions of airspace are designated for low flying military use (CMLUCA, 2019).

Public Transportation Facilities

North of the community of Wilkerson in Segment 1, the I-C Project route crosses a designated Class II/III bikeway on Gerkin Road. Eastern Sierra Transit Authority is the primary public transit agency within Segment 1. They offer several US 395 routes connecting Lone Pine to the Mammoth Lakes area. Also, several local community bus routes are provided in the Bishop area. Eastern Sierra Transit Authority routes would be crossed where US 395 is crossed by Segment 1. Local bus routes would not be crossed.

Segment 2: Inyokern to Kramer Junction

Highways and Roadways

The northern and southern portions of Segment 2 also parallel US 395. Segment 2 of the I-C Project crosses the following major transportation corridors:

- SR-178 (four-lane) at one location
- US 395 (two-lane) at one location
- SR-58 (two-lane) at one location

Table 3.19-3 identifies the local roadways that would be crossed by the I-C Project within Segment 2.

Table 3.19-3. Local Roadways Crossed by the I-C Project – Segment 2

Kern County		San Bernardino County
China Lake Acres ■ Graaf Ave. ■ Mercury St. ■ Plains Ave. ■ Sydnor Ave. ■ Three Flags Hwy. ■ West Inyokern Rd. Inyokern ■ Drummond Ave. ■ Felspar Rd. ■ Las Flores Ave. ■ Ridgecrest Blvd.	Johannesburg ■ Butte Ave. ■ Randsburg Cutoff Rd. ■ Sunshine Mine Rd. ■ Redrock Randsburg Rd. Unincorporated County ■ Randsburg Mojave Rd. ■ Sunshine Mine Rd. ■ Bowman Rd. ■ Brown Rd. ■ Garlock Rd. ■ Goler Rd.	Unincorporated County ■ Chaska Rd. ■ East Waseca Rd. ■ Farmington Rd. ■ Fremont Peak Rd. ■ Kramer Station Rd. ■ Locust Rd. ■ Narcissa Rd. ■ Pipeline Rd. ■ Rosewood Blvd. ■ Wadena Rd.

Railroad

The southern portion of Segment 2 crosses a rail line operated by BNSF and UPRR that connects the City of Ridgecrest to California City (OpenStreetMap, 2019). Due to the relatively short length of this line and termination at the City of Ridgecrest, this line is likely utilized for freight operations only.

Air Transportation

The nearest public airport to Segment 2 is:

- Inyokern Airport (approximately 1.8 miles west of the route) in Kern County.

In addition to this public airport, Segment 2 runs adjacent to Naval Air Weapons Station China Lake. This military installation includes two runways, which are located approximately 5.1 miles east of the Segment 2 route. Along the entirety of Segment 2, portions of airspace are designated for low flying military use (CMLUCA, 2019).

Public Transportation Facilities

No bicycle routes are crossed within Segment 2. Kern Regional Transit is the main public transit operator for Kern County, providing connections for outlying regions. In the vicinity of Segment 2, bus routes 230

(Mojave-Ridgecrest) and 227 (Lake Isabella-Ridgecrest) run three days a week. Both bus routes would be crossed by Segment 2 where these routes connect with US 395.

Segment 3N: Kramer Junction to Daggett

Highways and Roadways

Segment 3N of the I-C Project is within San Bernardino County parallels SR-58 at a distance, crossing the following major transportation corridors:

- SR-58 (two-lane) at one location
- US 395 (two-lane) at one location
- I-15 (four-lane) at one location

Table 3.19-4 identifies the local roadways that would be crossed by the I-C Project within Segment 3N.

Table 3.19-4. Local Roadways Crossed by the I-C Project – Segment 3N

San Bernardino County (Unincorporated)			
■ Bishop Rd.	■ Frontage Rd.	■ Irwin Rd.	■ Powerline Rd.
■ Daggett-Yermo Rd.	■ Harper Lake Rd.	■ Kramer Rd.	■ Yermo Rd.
■ Fort Irwin Rd.	■ Hinkley Rd.	■ Meadow Grove Rd.	
■ Fossil Bed Rd.	■ Holstead Rd.	■ Old Yermo Cutoff	

Railroad

There are no active rail lines in the vicinity of Segment 3N.

Air Transportation

The nearest public airport to Segment 3N is:

- Barstow Daggett Airport (approximately 3.8 miles west of the route) in San Bernardino County.

In addition, Segment 3N is located proximate to Edwards Air Force Base and Marine Corps Logistics Base Barstow. Edwards Air Force Base contains three runways, which are located approximately 20 miles west of Segment 3N. Marine Corps Logistics Base Barstow does not contain any runways, but does contain a heliport located approximately 3.8 miles south-southwest of Segment 3N. Near the eastern portion of Segment 3N, portions of airspace are designated for low flying military use (CMLUCA, 2019).

Public Transportation Facilities

Within Segment 3N, no designated bikeways would be crossed. The VVTA operates several bus routes in the vicinity of Segment 3N. These bus routes are located within the City of Barstow. One VVTA route would be crossed by Segment 3N, the Hesperia/Victorville to NTC route, which connects the City of Barstow to Fort Irwin National Training Center (NTC). This route would be crossed on Fort Irwin Road (VVTA, 2020).

Segment 3S: Kramer Junction to Barstow to Daggett

Highways and Roadways

Segment 3S of the I-C Project is within San Bernardino County mostly parallels SR-58 and I-40, crossing the following major transportation corridors:

- US 395 (two-lane) at one location
- I-15 (eight-lane) at one location
- I-40 (four-lane) at one location
- SR-58 (four-lane) at one location
- SR-247 (two-lane) at one location

Table 3.19-5 identifies the local roadways that would be crossed by the I-C Project within Segment 3S.

Table 3.19-5. Local Roadways Crossed by the I-C Project – Segment 3S

San Bernardino County			
City of Barstow	Unincorporated County		
■ Agate Rd.	■ Barstow Rd.	■ Hillview Rd.	■ Mountain View Rd.
■ Bonanza Rd.	■ Bonanza Rd.	■ Hinkley Rd.	■ N St.
■ Historic Route 66	■ Camp Rock Rd.	■ Historic Route 66	■ O St.
■ P St.	■ Cape Glouster Ave.	■ I St.	■ Old Hinkley Rd.
■ West Main St.	■ Cuando Ave.	■ J St.	■ Ord Mountain Rd.
Lenwood (unincorporated)	■ Del Largo St.	■ Juarno Ave.	■ Pecos Ave.
■ Carmel Ct.	■ Fairview Rd.	■ K St.	■ Riverview Rd.
■ Evans Rd.	■ Guadalupe Dr.	■ L St.	■ Santa Fe St.
■ Hiline Rd.	■ H St.	■ La Bonita Rd.	■ Sierra Rd.
■ Osborne Rd.	■ Helendale Rd.	■ Lenwood Rd.	■ Tamarack Rd.
■ Ranch Rd.	■ Harvey Rd.	■ M St.	■ Valley Wells Rd.

Railroad

There are no active rail lines in the vicinity of Segment 3S.

Air Transportation

The nearest public airport to Segment 3S is the Barstow Daggett Airport (approximately 3.8 miles west of the route) in San Bernardino County.

In addition, Segment 3S is located proximate to Edwards Air Force Base and Marine Corps Logistics Base Barstow. Edwards Air Force Base contains three runways, which are located approximately 20 miles west of Segment 3S. Marine Corps Logistics Base Barstow does not contain any runways but does contain a heliport located approximately 0.8 miles north of Segment 3S. Near the eastern portion of Segment 3S, portions of airspace are designated for low flying military use (CMLUCA, 2019).

Public Transportation Facilities

In one location, Segment 3S crosses Main Street, a bicycle route identified by the City of Barstow and the San Bernardino County Wide Bicycle Plan. The VVTA operates several bus routes in the vicinity of Segment 3S. These bus routes are located within the City of Barstow. Several VVTA route would be crossed by Segment 3S (VVTA, 2020):

- Barstow-Hinkley-Helendale Route, which would be crossed on Hinkley Road
- Barstow to NTC Route, which would be crossed on Main Street
- Hesperia/Victorville to NTC Route, which would be crossed on I-15
- Barstow Library – Lenwood Route, which would be crossed on Jasper Road and Lenwood Road

3.19.2. Applicable Regulations, Policies, and Standards

Construction of the Proposed Project could potentially affect traffic and congestion, transportation ROWs, property access, physical conditions of roads, and navigable airspace. Therefore, it would be necessary for the Applicant and/or the construction contractor to obtain encroachment permits or similar legal agreements from the agencies or entity responsible for each affected roadway and transportation ROW. In addition, as part of the overall right-of-way grant revision process with the BLM, the Applicant would be required to obtain approval for encroachments on roadways traversing federal lands. Finally, Project-related use of airspace is regulated by the Federal Aviation Administration (FAA) and the potential for project features to affect navigable airspace may require review by the FAA.

3.19.2.1. Federal Regulations, Policies and Standards

14 CFR Part 77 – Safe, Efficient Use, and Preservation of the Navigable Airspace

Construction of a project could potentially impact aviation activities if a structure or equipment were positioned such that it would be a hazard to navigation. The FAA has established reporting requirements for construction or alterations around airport and heliport facilities that meet certain criteria regarding final height above ground level and penetration of an imaginary conical surface extending out from the air facility. With regard to aviation safety, Subpart B, Section 77.9 of the regulations indicates that for areas around airports having runways longer than 3,200 feet, if any construction that is more than 200 feet above ground level or results in an object penetrating an imaginary surface extending outward and upward at a ratio of 100 to 1 from a public or military airport runway out to a horizontal distance of 20,000 feet (approximately 3.78 miles), then an applicant is required to submit FAA Form 7460–1 (Notice of Proposed Construction or Alteration) to the FAA Regional Office having jurisdiction over the area for review and approval of the Project. For areas around heliports, this same requirement applies to any construction that is more than 200 feet above ground level or would penetrate an imaginary surface extending outward and upward at a ratio 25 to 1 from a public or military heliport out to a horizontal distance of 5,000 feet.

Advisory Circular AC 133 1A

Advisory Circular AC 133 1A: Rotorcraft External-Load Operations in Accordance with Federal Aviation Regulations Part 133 requires a helicopter pilot to have a FAA External-Load Operator Certificate in order to engage in external load operations[2] and file Congested Area Plans where external load operations occur within populated areas.

3.19.2.2. State Regulations, Policies and Standards

California Vehicle Code

The California Vehicle Code (CVC) includes regulations pertaining to licensing, size, weight, and load of vehicles operated on highways; safe operation of vehicles; and the transportation of hazardous materials. These regulations would apply to numerous construction-related large multi-axle truck trips associated with the Proposed Project.

California Streets and Highway Code

The California Streets and Highway Code regulates the care and protection of State and County highways and has provisions for the issuance of permits. Where the Proposed Project would include activities related to the placement of towers, poles, or lines within, under, or over a Caltrans ROW, an encroachment permit must be obtained. To obtain an encroachment permit, all other statutory requirements, including environmental documentation, must be complied with and applicants must complete a Standard Encroachment Permit Application (TR 0100) with supporting documentation to the appropriate District Encroachment Permits Office having jurisdictional authority over the proposed encroachment site.

3.19.2.3. Local Regulations, Policies and Standards

In California, on non-federal and non-tribal lands, the California Public Utilities Commission (CPUC) has jurisdiction over the siting and design of the Proposed Project because the CPUC regulates and authorizes the construction of investor-owned public utility (IOU) facilities. Although such projects are exempt from local land use and zoning regulations and permitting, General Order (GO) No. 131 E, Section III.C requires "the utility to communicate with, and request the input of, local authorities regarding land-use matters

[2] External load operations are those for which helicopters are required to carry loads outside of the helicopter itself, e.g., portions of transmission structures or construction equipment.

and obtain any nondiscretionary local permits required for the construction and operation of these projects."

Inyo County Regulations and Policies

Inyo County's General Plan (Inyo County, 2001) presents the following goals and policies regarding roadways and highways:

Goal RH-1: A transportation system that is safe, efficient, and comfortable, which meets the needs of people and goods and enhances the lifestyle of the County's residents.

- **Policy RH-1.1: Prioritize Maintenance, Rehabilitation, and Reconstruction.** Prioritize improvements based on the premise that maintenance, rehabilitation, and reconstruction of the existing highway and roadway system to protect public safety has the highest consideration on available funds.
- **Policy RH-1.2: Transportation Systems Management Projects**. Implement Transportation Systems Management projects.
- **Policy RH-1.3: Safer Truck Transportation**. Facilitate safer truck transportation and ease the impact of truck traffic on residential areas.
- **Policy RH-1.4: Level of Service**. Maintain a minimum level of service (LOS) "C" on all roadways in the County. For highways within the County, LOS "C" should be maintained except where roadways expansions or reconfigurations will adversely impact the small community character and economic viability of designated Central Business Districts.
- **Policy RH-1.5: Proper Access.** Provide proper access to residential, commercial, and industrial areas.
- **Policy RH-1.6: Minimize Environmental Impacts.** Ensure that all transportation projects minimize adverse effects on the environment of the County.
- **Policy RH-1.7: Maximize State and Federal Funds**. Pursue all means to maximize state and federal funds for roadway and highway improvements and maintenance.
- **Policy RH-1.8: Priority to Efficiency Projects**. Give priority to transportation projects designed to improve the efficiency, safety, and quality of existing facilities.
- **Policy RH-1.9: Plan Comprehensive Transportation System**. Continually plan, prioritize, design, and develop a comprehensive transportation system in cooperative partnership between the County, City of Bishop, state officials, the Local Transportation Commission (LTC), public and private groups, and other interested entities.

Goal RH-2: Improved capacity on state highways and routes within and surrounding Inyo County.

- **Policy RH-2.1: Improve US 395 in Sections.** Support improvements to US 395 as funding allows.
- **Policy RH-2.2: New Regional Roadways**. Improve circulation to Death Valley National Park by completing a paved route between north Scotty's Castle and Big Pine.

Goal SH-1: Maintain a system of scenic routes that will protect and enhance the quality of life for present and future generations.

See discussion in Section 3.2, Aesthetics.

Goal PT-1: Provide effective, economically feasible, and efficient public transportation in Inyo County that is safe, convenient, efficient, reduces the dependence on privately owned vehicles, and meets the identified transportation needs of the County, with emphasis on service to the transportation disadvantaged.

- **Policy PT-1.1: Transit Facilities.** Provide transit facilities, such as bus shelters, staging areas, base stations, transit hubs, etc.
- **Policy PT-1.2: Transportation Grants.** Encourage and support the use of public transportation grants from state and federal programs to the maximum extent possible.
- **Policy PT-1.3: Public Transit Accessibility.** Support and promote accessibility in public transportation to the maximum extent practicable, including continued support of special service vans that provide a high level of service to low mobility groups.
- **Policy PT-1.4: Develop Long-Range Transit Plans.** Cooperatively develop long-range plans with transit operators that provide guidance and assistance in determining capital and operating requirements.
- **Policy PT-1.5: Consider Future Development.** Consider future development of commercial or residential centers that will generate traffic and require transportation improvements.
- **Policy PT-1.6: Encourage Interregional and Intercity Bus Lines.** Encourage the development, expansion, and maintenance of interregional and intercity bus lines within Inyo County.
- **Policy PT-1.7: Promote Public Transportation.** Actively promote public transportation through mass media, personal contact, and other marketing techniques, improve marketing and information programs to assist current ridership and to attract potential riders.
- **Policy PT-1.8: Provide for Multi-Modal Facilities at Airports.** Encourage development of multi-modal facilities at airports where appropriate.

Goal BT-1: Encourage and promote greater use of non-motorized means of personal transportation within the region.

- **Policy BT-1.1: Consider the Non-Motorized Mode in Planning.** Consider the non-motorized mode as an alternative in the transportation planning process.
- **Policy BT-1.2: Bikeway and Trail System in the Region.** Plan for and provide a continuous and easily accessible bikeway and trail system within the region. Plans shall be based on the bicycle system shown on the General Plan Circulation Diagrams.
- **Policy BT-1.3: Multi-Modal Use of Road and Highway System.** Support plans that propose multimodal use of the state highway and County roadway system.
- **Policy BT-1.4: Minimize Cyclist/Motorist Conflicts.** Develop a regional bicycle system that will minimize cyclist/motorist conflicts.

Goal RR-1: Encourage and pursue railroad facilities within the region.

- **Policy RR-1.1: Preservation of Railroad Right-of-Way.** Support preservation of railroad rights-of-way in Inyo County for restoration of rail operations or reuse in a regional bikeway/trails system.
- **Policy RR-1.2: Railroad Corridor Studies.** Encourage railroad corridor studies in Inyo County for passenger and freight service.
- **Policy RR-1.3: Reestablish Freight Service.** Support efforts to reestablish freight service in Inyo County.

Goal AVI-1: Enhance airports in the County to meet changing needs and demands.

- **Policy AVI-1.1: Airport Funding.** Seek all available funding sources for airport maintenance and enhancement.
- **Policy AVI-1.2: Land Use Compatibility.** Promote land use compatibility of each airport with the surrounding environment.
- **Policy AVI-1.3: Effective and Efficient Utilization of Airports.** Encourage and foster effective and efficient utilization of existing airport facilities.
- **Policy AVI-1.4: Light Industrial at Bishop Airport.** Promote the establishment of light industrial uses and businesses to stimulate the use of the Bishop Airport by outside companies.
- **Policy AVI-1.5: Air Carrier Service at Bishop Airport.** Maintain and expand dependable air carrier service at Bishop Airport to serve the air passenger, cargo, and mail/package needs of the County.

Kern County Regulations and Policies

Kern County's General Plan Circulation Element (Kern County, 2009) presents the following issues, goals, and policies regarding transportation.

Section 2.3.3 Highway Plan Goals

- Maintain a minimum Level of Service (LOS) D

Section 2.4.4 Ridgecrest – Indian Wells Valley

This area includes all of Indian Wells Valley including City of Ridgecrest and communities of Inyokern, and Leliter. The Naval Weapons Station -- China Lake is in the northeastern corner of the area and affiliated industries are the major employers. These facets result in congestion on this corridor.

Issues: The present route of Highway 178 through the City of Ridgecrest and Inyokern is problematic. The route is on streets heavily used for local traffic. The route is the only major east-west thoroughfare in the area. These facets result in congestion on this corridor.

- Road Standards: The City of Ridgecrest and Kern County have different road standards.
- Visibility for Flying: The Navy has concern with visual quality of air resulting from dust (and other suspended particulate matter). Vehicles traveling on dirt roads make dust throughout Indian Wells Valley. The dust results in deteriorating visibility.
- Driveway Access: Direct access from residential driveways onto collector and arterial highways disrupts traffic flow and could result in an unsafe movement.

Goals

- Maintain congruity of roadways at boundaries between jurisdictions.
- Maintain acceptable air quality, specifically visibility, about the Naval Weapons Station.
- Use effective residential development design and other traffic control strategies to provide for adequate safe vehicle access and turning movements.

Section 2.4.5 Mojave – Fremont Valley

The Mojave area is at the western edge of the upper Mojave Desert in Fremont Valley. The area is northwest and next to Edwards Air Force Base. Mojave is located south of the State Route 58 bypass. State Route 58 is a major east-west highway providing a link to Interstate 15 at Barstow.

Issues: State Route 58, which is the responsibility of Caltrans, has been rerouted as a freeway outside the community of Mojave.

Goals

- Reduce congestion in the community of Mojave.
- Provide adequate circulation for the movement of local residents.

Section 2.4.11 Boron

The Boron area is north of Edwards Air Force Base in the Mojave Desert. This area contains the eastern portion of California City and unincorporated communities of North Edwards and Boron. Regional access is via State Route 58. In the future, Twenty Mule Team Highway may serve as an access route for California City portion of the area on the north to new Freeway 58 and east to Highway 395 in San Bernardino County.

Issues: The key issue in Boron is connectivity and internal circulation. The Land Use, Open Space and Conservation Element show enormous residential land use development at build-out. Development will require adequate connections to the major thoroughfares. This includes closing gaps in the existing grid roadway system.

Goals

- Implement the plan for the Boron area in a manner consistent with needs and standards of the County including the implementation of the North Edwards/Desert Lake and Boron Specific Plans.
- Maintain a simple way for protecting road right-of-way to meet the area's future road needs.

Section 2.5.1 Trucks and Highways

Issues: The Kern County road network handles a high ratio of heavy truck traffic. State Highways carry most of this traffic. Most of the trucks are interstate carriers. As such, interstate trucking is not under the direct control of County officials. In as much as this traffic affects County residents and taxpayers, they need actions to guarantee State highways in Kern County receive a fair share of California's transportation investment.

Goals

- Provide for Kern County's heavy truck transportation in the safest way possible.
- Reduce potential overweight trucks.
- Use State Highway System improvements to prevent truck traffic in neighborhoods.

Section 2.5.2 Airport Land Use Compatibility Plan (ALUCP)

The County’s public use airports and military bases represent a major public investment and contribution to the County's economy. Kern County has adopted an (ALUCP and alternative process to comply with the State Aeronautics Act (Public Utilities Code commencing with Section 21670).

Issues: Public use airports and military bases are important to the economic future of communities, but incompatible development can create public safety issues and adverse noise impacts. Encroachment of incompatible uses can adversely affect airport and military base operations and even result in the curtailment of their use. It is imperative that property near airports be developed with compatible uses and that there be clear guidance and information for affected property owners.

Goals

- Plan for land uses that are compatible with public airport and military bases and mitigate encroachment issues.

Policies

- Review land use designations and zoning near public and private airports, Edwards Air Force Base and Naval Air Weapons (NAWS) China Lake for compatibility.
- To the extent legally allowable, prevent encroachment on public airport and military base operations from incompatible, unmitigated land uses.
- Provide property owners in proximity to public airports and military bases education on impacts from operations.

San Bernardino County Regulations and Policies

San Bernardino County's Countywide Plan (SBC, 2020) presents the following goals and policies regarding transportation and mobility:

Goal TM-1: Roadway Capacity: Unincorporated areas served by roads with capacity that is adequate for residents, businesses, tourists, and emergency service.

- **Policy TM-1.1: Roadway Level of Service (LOS).** Requires roadways to achieve the following minimum level of service standards during peak commute period (typically 7:00 – 9:00 AM and 4:00 – 6:00 PM on a weekday):
  - LOS D in the Valley Region
  - LOS D in the Mountain Region
  - LOS C in the North and East Desert Regions
- **Policy TM-1.2: Interjurisdictional Roadway Consistency.** Promote consistent cross-sections along roads traversing incorporated and unincorporated areas.
- **Policy TM-1.3: Freeways and Highways.** Coordinate with Caltrans and regional transportation agencies and support the use of state, federal, and other agency funds to improve freeways and highways.
- **Policy TM-1.4: Unpaved Roadways.** The County does not accept new unpaved roads into the County Maintained Road System and requires all-weather treatment for all new unpaved roads.
- **Policy TM-1.5: Upgrading Unpaved Roads.** Support the paving of unpaved roads when funding is contributed through a local area funding and financing mechanism.
- **Policy TM1-1.6: Paved Roads.** For any new development for which paved roads are required, require the developer to construct the roads and require the establishment of a special funding and financing mechanism to pay for roadway operation, maintenance, and set-aside reserves.
- **Policy TM-1.7: Fair Share Contributions.** Require new development to pay its fair share contribution toward off-site transportation improvements.
- **Policy TM-1.8: Emergency Access.** When considering new roadway improvement proposals for the CIP or RTP, we consider the provision of adequate emergency access routes along with capacity expansion in unincorporated areas. Among access route improvements, we prioritize those that contribute some funding through a local area funding and financing mechanism.
- **Policy TM-1.9: New Transportation Options.** Support the use of transportation network companies, autonomous vehicles, micro transit, and other emerging transportation options that reduce congestion, minimize land area needed for roadways, create more pedestrian- and bicycle-friendly streets, reduce VMT, or reduce dependence on privately-owned vehicles.

Goal TM-2: Road Design Standards. Roads Designed and built to standards in the unincorporated areas that reflect the rural, suburban, and urban context as well as the regional (valley, mountain, and desert) context.

- **Policy TM-2.1: Context Sensitive Approach.** Maintain and periodically update required roadway cross sections that prioritize multi-modal systems inside mobility focus areas (based on community context), and vehicular capacity on roadways outside of mobility focus areas (based on regional context).
- **Policy TM-2.2: Roadway Improvements.** Require roadway improvements that reinforce the character of the area, such as curbs and gutters, sidewalks, landscaping, street lighting, and pedestrian and bicycle facilities. We require fewer improvements in rural areas and more improvements in urbanized areas, consistent with the Development Code. Additional standards may be required in municipal spheres of influence.
- **Policy TM-2.3: Concurrent Improvements.** Require new development to mitigate project transportation impacts no later than prior to occupancy of the development to ensure transportation improvements are delivered concurrent with future development.
- **Policy TM-2.4: Atypical Intersection Controls.** Allow the use of atypical intersection concepts such as roundabouts when they improve traffic flow and safety compared to conventional intersection controls.
- **Policy TM-2.5: Context-based Features.** When making road improvements, provide feasible, context-based transportation features such as:
  - Chain installation and inspection areas in the Mountain Region
  - Slow-vehicle turnouts on roadways with steep grades
  - Limited on-street parking areas to serve snowplow or emergency services
  - Passing lanes in rural areas
  - Vista areas along scenic routes
- **Policy TM-2.6: Access Control.** Promote shared/central access points for direct access to roads in unincorporated areas to minimize vehicle conflict points and improve safety, especially access points for commercial uses on adjacent properties.

Goal TM-3 Vehicle Miles Traveled (VMT). A pattern of development and transportation system that minimizes vehicle miles traveled.

- **Policy TM-3.1: VMT Reduction.** Promote new development that will reduce household and employment VMT relative to existing conditions.
- **Policy TM-3.2: Trip Reduction Strategies.** Support the implementation of transportation demand management techniques, mixed use strategies, and the placement of development in proximity to job and activity centers to reduce the number and length of vehicular trips.
- **Policy TM-3.3: First Mile/Last Mile Connectivity.** Support strategies that strengthen first/last mile connectivity to enhance the viability and expand the utility of public transit in unincorporated areas and countywide.

Goal TM-4: Complete Street, Transit, and Active Transportation. On- and off-street improvements that provide functional alternatives to private car usage and promote active transportation in mobility focused areas.

- **Policy TM-4.1: Complete Streets Network.** Maintain a network of complete streets within mobility focus areas that provide for the mobility of all users of all ages and all abilities, while reflecting the local context.

- **Policy TM-4.2: Complete Streets Improvements.** Evaluate the feasibility of installing elements of complete street improvements when planning roadway improvements in mobility focus areas, and we require new development to contribute to complete street improvements in mobility focus areas. In evaluating complete street improvements, we prioritize those in mobility focus areas that are within unincorporated environmental justice focus areas.
- **Policy TM-4.3: Funding.** Partner with SBCTA (San Bernardino County Transportation Authority), Caltrans, and local agencies to fund active transportation systems in the county. We encourage unincorporated communities to apply for funding and cooperate with them in their funding applications for active transportation improvements that are identified in a non-motorized transportation plan that is accepted or adopted by the County.
- **Policy TM-4.4: Transit Access for Residents in Unincorporated Areas.** Support and work with local transit agencies to generate a public transportation system, with fixed routes and on-demand service, that provide residents of unincorporated areas with access to jobs, public services, shopping, and entertainment throughout the county.
- **Policy TM-4.5: Transit Access to Job Centers and Tourist Destination.** Support and work with local transit agencies to generate public transportation systems that provide access to job centers and reduce congestion in tourist destinations in unincorporated areas.
- **Policy TM-4.6: Transit Access to Public Service, Health, and Wellness.** In unincorporated areas where public transit is available, we prefer new public and behavioral health facilities, other public facilities and services, education facilities, grocery stores, and pharmacies to be located within one-half mile of a public transit stop. We encourage and plan to locate new County health and wellness facilities within one-half mile of a public transit stop within incorporated jurisdictions. We encourage public K-12 education and court facilities to be located within one-half mile of public transit.
- **Policy TM-4.7: Regional Bicycle Network.** Work with SBCTA and other local agencies to develop and maintain a regional backbone bicycle network.
- **Policy TM-4.8: Local Bicycle and Pedestrian Networks.** Support local bike and pedestrian facilities that serve unincorporated areas, connect to facilities in adjacent incorporated areas, and connect to regional trails. We prioritize bicycle and pedestrian network improvements that provide safe and continuous pedestrian and bicycle access to mobility focus areas, schools, parks, and major transit stops.
- **Policy TM-4.9: Bike and Pedestrian Safety.** Promote pedestrian and bicyclist safety by providing separated pedestrian and bike crossings when we construct or improve bridges over highways, freeways, rail facilities, and flood control areas. We monitor pedestrian and bicycle traffic accidents and promote safety improvements in unincorporated high-accident areas.
- **Policy TM-4.10: Shared Parking.** Support the use of shared parking facilities that provide safe and convenient pedestrian connectivity between adjacent uses.
- **Policy TM-4.11: Parking Areas.** Require publicly accessible parking areas to ensure that pedestrians and bicyclists can safely access the site and onsite businesses from the public right-of-way.

Goal TM-5: Goods Movement. A road, rail, and air transportation system that supports the logistics industry and minimizes congestion in unincorporated areas.

- **Policy TM-5.1: Efficient and Sustainable Goods Movement Network.** Advocate for the maintenance of a goods movement system in southern California that is efficient and sustainable and that prioritizes public health through the use of zero-emission equipment and infrastructure.
- **Policy TM-5.2: Intermodal Facility.** Support the development of an intermodal facility in connection with the Southern California Logistics Airport.

- **Policy TM-5.3: High Desert Corridor.** Support the development of the High Desert Corridor to improve the regional goods movement network and foster economic development in the North Desert region.
- **Policy TM-5.4: Grade Separations.** Support grade separations to reduce conflicts between rail facilities and roadways, subject to available funding.
- **Policy TM-5.5: Countywide Truck Routes.** Support SBCTA's establishment of regional truck routes that efficiently distribute regional truck traffic while minimizing impacts on residents. We support funding through the RTP to build adequate truck route infrastructure.
- **Policy TM-5.6: Unincorporated Truck Routes.** Establish local truck routes in unincorporated areas to efficiently funnel truck traffic to freeways while minimizing impacts on residents. We establish routes where trucks are prohibited in unincorporated environmental justice focus areas and to avoid overlaps or conflicts with safe routes to schools.
- **Policy TM-5.7 Trucking-Intensive Businesses.** Require trucking-intensive businesses to pay their fair share of costs to build and maintain adequate roads.

Goal TM-6: Airports. A network of local and regional airports that meet regional and local aviation needs.

- **Policy TM-6.1: Local Airports.** Maintain County airports and coordinate with other local airports to provide general aviation services to residents and businesses throughout the county.
- **Policy TM-6.2: Economic Potential.** Seek to maximize the economic development potential of County airports.
- **Policy TM-6.3: Regional Airports.** Advocate for expanded passenger and cargo service at regional airports.
- **Policy TM-6.4: Airport Land Use Compatibility.** Require proposed development in unincorporated areas to be consistent with applicable airport master plans, airport safety review areas, and military air installation compatible use zones. We may support proposed development in the influence area of County airports only when they are consistent with applicable airport master plans.
- **Policy TM-6.5: Coordination on Airport Planning.** Collaborate with FAA, military installations, Caltrans Division of Aeronautics, airport owners, neighboring jurisdictions, and other stakeholders in the preparation, update, and maintenance of airport-related plans.

3.19.3. Environmental Impacts of the Proposed Project

3.19.3.1. Impact Analysis Approach

The assessment of potential transportation impacts from the I-C Project considered existing surface transportation facilities in the project vicinity; including road use (traffic flow, vehicle miles travelled, motorist safety, pedestrian/bicycle use), public services relying on these facilities (transit and emergency vehicles), rail facilities crossed, access to adjacent properties from roads, and safe use of airports and airspace.

Given the linear nature of the Proposed Project and the length of construction time, it is impossible to estimate precisely when and where project-related traffic would be on specific roads; therefore, a qualitative approach was taken to assess the impacts of the Proposed Project on surface transportation facilities. This was based on the relative volume of current traffic on roads as compared to anticipated levels of project-related traffic, the distribution of work sites throughout the study area, and the nature and location of activities that could require road or lane closures.

For air transportation (construction-related helicopter use), consideration was given to the location of construction yards from which flights would originate, the carrying of external loads, and the types of

work that may involve helicopter use. Helicopter use could have potential impacts on other resources, such as Biological Resources, Air Quality, and Noise. These impacts are addressed in those separate resource chapters of this EIR.

Applicant Proposed Measures

SCE proposes implementing three Applicant Proposed Measures (APMs) pertaining to transportation to ensure the Proposed Project would be constructed and operated with minimal environmental impacts in manner consistent with applicable rules and regulations. Implementation of these APMs is considered part of the Proposed Project for purposes of the evaluation of environmental impacts. Table 3.19-6 summarizes the APMs pertaining to transportation.

Table 3.19-6 presents the Applicant Proposed Measures (APMs) that SCE has committed to implement as part of the Proposed Project. Based on the analysis in this chapter, if revision or expansion of transportation APMs is required to ensure that potential impacts are less than significant, those changes are explained in Section 3.19.3.3 (Impacts and Mitigation Measures). These APMs would be required during project construction and operations and maintenance.

Table 3.19-6. Applicant Proposed Measures – Transportation

APM	Description
APM TRA-1	SCE shall 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 is a member of the California Inter-Utility Coordinating Committee, which published the Manual on Uniform Traffic Control Devices, as amended for the state of California (CA MUTCD; CALTRANS 2018) and using standard templates from the California Temporary Traffic Control Handbook. (CATTCH 2018) This handbook was previously known as the California Joint Utility Traffic Control Manual. (CJUTCM 2010) SCE would follow the recommendations in this manual regarding basic standards for the safe movement of traffic on highways and streets in accordance with Section 21400 of the CVC. These recommendations include provisions for safe access of police, fire, and other rescue vehicles.
APM TRA-2	SCE would consult with the FAA regarding helicopter flight plans that would take place during construction.
APM TRA-3	Where the proposed project work area encroaches upon a public right-of-way and reduces the existing pedestrian path of travel to less than 48 inches wide, alternate pedestrian routing will be provided during construction activities.

3.19.3.2. Impact Significance Criteria

The significance criteria for transportation and traffic impacts are based on the CEQA Guidelines Appendix G Checklist.

Significance Criteria

Transportation impacts associated with the I-C Project would be significant if:

- **Impact T-1:** Construction would generate trips in volumes and/or require temporary closure of lanes or roadways that would conflict with a program plan, ordinance or policy addressing performance of the circulation system, including transit, roadway, bicycle and pedestrian facilities.
- **Impact T-2:** Vehicle movements associated with construction worker trips or movement of materials and equipment result in an excessive number of vehicle miles travelled, per CEQA Guidelines section 15064.3, subdivision (b).
- **Impact T-3:** Temporary closure of lanes or roadways that would substantially restrict the movement of emergency vehicles.

- **Impact T-4:** Require the temporary closure of lanes or roadways resulting in a substantial increase in roadway hazards.
- **Impact T-5:** Require use of heavy construction vehicles or activities that increase roadway hazards through damage to road surfaces.
- **Impact T-6:** Conflict with FAA recommendations to reduce hazards to navigable airspace, conflict with an airport land use plan, or conflict with airspace designated for low flying military flights.
- **Impact T-7:** Create a hazard to the public through the transport of external loads with helicopters.

3.19.3.3. Impacts and Mitigation Measures

This section presents a discussion of impacts and mitigation measures, where applicable, for the Proposed Project with regard to transportation facilities. The I-C Project consists of addressing clearance discrepancies on multiple 115 kV subtransmission lines and the use of staging yards, all of which could result in various impacts on transportation facilities. Construction and operational impacts are described below for both surface and air transportation facilities. Because potential impacts to transportation facilities would occur along, or would be similar across, the entire I-C Project route; the impact analysis for transportation covers all segments of the Proposed Project.

The Cal City Options defined in Section 2.1.1 and illustrated in Figure 2-2 would have impacts no different from those defined for Impacts T-1 through T-5, because the extent of construction activity and ground disturbance required for the Proposed Project would be the same as that required for any of the Cal City Options.

Impact T-1: Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

Potential for Conflict with Applicable Programs, Plans, or Ordinances

LESS THAN SIGNIFICANT WITH MITIGATION. Section 3.19.2.3 presents the county plans and policies that relate to transportation. The following paragraphs describe project effects on traffic flow, temporary lane closure, bus service, pedestrian and bicycle movement, and rail service. Each activity is evaluated for consistency with applicable plans and policies. The overall conclusion is that construction, as a temporary activity, when completed in compliance with SCE's APMs related to traffic, as well as mitigation measures defined in the following discussion, would not result in a conflict with applicable plans.

SCE would implement APM TRA-1 to ensure traffic safety. However, this measure does not provide adequate detail to ensure that potential conflicts with applicable programs, plans, and ordinances would be avoided, resulting in a less than significant impact. To ensure that construction traffic does not conflict with the applicable plans, a construction transportation plan would be required, as specified in Mitigation Measure T-1a (Prepare Construction Transportation Plan). With the implementation of Mitigation Measure T-1a, impacts related to plan compliance would be less than significant.

Project-Related Trips Affecting Traffic Flow and Congestion

Construction

LESS THAN SIGNIFICANT. As discussed in Section 2.4.8.2 (Construction Workforce), SCE anticipates a total of approximately 200 construction personnel working on any given day. SCE anticipates that crews would work concurrently on different tasks along the 262-mile Project ROW, whenever possible. However, the estimated deployment and number of crew members would vary depending on factors such as material availability, resource availability, and construction scheduling. In addition to daily trip generation by workers, the Proposed Project would include trips during the workday for the movement of cut-and-fill material, watering for dust control, concrete delivery, disposal of old structures, and delivery of new structures and

components. Different aspects of construction would likely be ongoing concurrently in any of the 4 Project segments, so the trip data presented below was developed to consider the maximum level of traffic.

Based on the estimated workforce and daily truck trips to support construction, the Proposed Project is estimated to generate a total of approximately 300 daily roundtrips per day across the full I-C Project route (500 daily one-way trips) temporarily during construction. The components of these trips are estimated as follows:

- Each worker making two daily personal vehicle trips (one trip in the morning from home to a staging yard, and one trip in the reverse in the evening, for a total of 200 roundtrips, or 400 total trips, per day); due to the working hours of utility and construction crews, the majority of these personal vehicle trips would occur outside the morning and evening peak hours (7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m.). Because the work would be outdoors, there would be a seasonal variation in starting and quitting times. Construction would generally be performed from 7:00 a.m. and 7:00 p.m., Monday through Saturday.
- Approximately 50 daily medium and heavy truck roundtrips (100 total trips) would occur throughout the workday for the movement of cut-and-fill material, watering for dust control, delivery of construction workers and equipment, concrete delivery, disposal of old structures, and delivery of new structures and components.

To minimize the number of vehicles at a site, workers typically park personal vehicles at construction staging yards (see Table 2-4, Potential Staging Yard Locations) or other designated sites. From there, workers carpool or are transported via SCE or contractor vehicles to work sites. As discussed, most construction worker trips would occur outside of the peak commute periods and have no impact on traffic during the morning (a.m.) and evening (p.m.) peak periods. Transmission line work generally is not sequential along a line, progressing from one end of an alignment to the other; rather, multiple crews would be working at different locations along the alignment performing different tasks at different times. Consequently, transmission line workers would be dispersed throughout I-C Project route using the highways and arterials identified in Section 3.19.1 and would not occur at the same level from day to day. Given the average daily traffic on regional freeways without the Project (refer to Table 3.19-1), the temporary contribution of project-related construction trips to baseline levels on the regional freeway network would be minimal.

Construction-related truck traffic delivering materials and equipment would be dispersed throughout the workday. Based on the estimated 100 total truck trips per day, when averaged over a typical 10-hour workday, this would only result in 10 trips per hour dispersed on various travel routes. Therefore, project-related truck traffic would not result in a substantial impact on traffic conditions.

Transportation analyses under CEQA have changed from a roadway capacity methodology to the vehicle miles travelled methodology (refer to Impact T-2).

Operations and Maintenance

LESS THAN SIGNIFICANT. Once constructed, operations and maintenance of the Project would have negligible impacts on the roadway system. The inspection and maintenance activities would generate a very small volume of vehicular traffic. If a major repair were required at a particular location, the temporary transportation impacts would be short-term, limited in scale, and require trip volumes significantly less than the construction impacts addressed above. Impacts would be less than significant.

Temporary Lane Closures

There are no specific plans, ordinances, or policies related to lane closures, though each county defines the importance of maintaining traffic flow on regionally important roadways. The potential conflict with

these goals created by the effects of temporary construction-required lane closures would be mitigated as defined in the following paragraphs.

Construction

LESS THAN SIGNIFICANT WITH MITIGATION. The project would require overhead conductors, ground wires, and fiber optic lines to be strung across regional highways and numerous local roads identified in Section 3.19.1.2 and Tables 3.19-2 through 3.19-5, respectively. This may require temporary closure of one or more travel lanes during the stringing operation, which is a short-duration activity. Where new poles would be installed adjacent to roads or where conductor/ground/telecommunication lines would be strung on poles adjacent to roads, temporary disruptions to travel lanes and traffic controls may be required to ensure motorist and worker safety. Encroachment permits are required from agencies having jurisdiction over roads; these specify conditions that would apply to any work in the road ROW typically include time of day limitations, lane closure and safety requirements, and repairs, among other specifications.

During peak morning and evening commute hours, local roads and regional highways can experience slow or erratic traffic flow and congestion. Road or lane closures during these times would exacerbate this condition. However, encroachment permits typically limit temporary closures to off-peak traffic times. Wire stringing operations over roadways is of short duration, usually only requiring traffic stops for seconds or minutes. Where construction work would occur adjacent to a road, closures may last longer. Depending on the role of the road in the local street network, encroachment permits may limit the hours during which the construction can occur, requiring that lanes are open during certain critical or peak times.

As listed in Table 3.19-6, SCE has included APM TRA-1 to include construction activities completed within public-street ROWs that would require the use of a traffic control service, and any lane closures would be conducted consistent with local ordinances and ministerial city permit conditions. These traffic control measures would be consistent with those published in the California Joint Utility Traffic Control Manual, which conform to the requirements of the CVC and the California Manual on Uniform Traffic Control Devices. However, temporary road closures have the potential to result in a significant impact. Mitigation Measure T-1b (Prepare Traffic Control Plan(s)) is recommended to supplement SCE's commitments provided in APM TRA-1, requiring that traffic control plan(s) be prepared by SCE and reviewed/approved by affected jurisdictions. With the review of the affected jurisdictions regarding oversight of traffic control procedures required by Mitigation Measure T-1b (Prepare Traffic Control Plan(s)), potential impacts from temporary lane or road closures would be further reduced or avoided. With the implementation of Mitigation Measure T-1b (Prepare Traffic Control Plan(s)), impacts would be less than significant.

Operations and Maintenance

LESS THAN SIGNIFICANT. With the exception of possible emergency work, no road or lane closures are anticipated to occur as a result of operating or maintaining the upgraded system. Any such closures occur under normal maintenance of the existing line and would not be increased or altered due to the Proposed Project. Less than significant impacts would occur.

Bus Service

LESS THAN SIGNIFICANT WITH MITIGATION. Temporary road closures could disrupt regional or local bus service, depending on bus schedules relative to the time of stringing. As discussed, closures for stringing across highways and roads would be short-term occurrences lasting a few minutes and are expected to occur on days and at times which traffic is light, as typically required by encroachment permits issued by agencies with jurisdiction over the roads. However, temporary road closures have the potential to result in a significant disruption of bus service. Mitigation Measure T-1b (Prepare Traffic Control Plan(s)) requires that traffic control plan(s) be prepared by SCE. This proposed mitigation supplements SCE commitments provided in APM TRA-1 to further reduce potential impacts to bus service operations.

With the review of the affected jurisdictions regarding oversight of traffic control procedures required by Mitigation Measure T-1b (Prepare Traffic Control Plan(s)), potential impacts from temporary lane or road closures would be further reduced or avoided, and impacts would be less than significant.

Pedestrian/Bicyclist Movement

LESS THAN SIGNIFICANT WITH MITIGATION. Temporary impacts could occur at locations where road closures disrupt pedestrian and bicycle movements or require detours around construction areas where work is occurring. As discussed, during wire stringing, roadways would be blocked for only a few minutes. In addition to public roads, small sections of transmission line ROW that may be used for recreational activities such as walking and bicycling would be unavailable during construction. As listed in Table 3.19-6, SCE has included APM TRA-3 to include where the proposed project work area encroaches upon a public right-of-way and reduces the existing pedestrian path of travel to less than 48 inches wide, alternate pedestrian routing will be provided during construction activities.

APM TRA-3 covers potential impacts to most pedestrian facilities, oversized vehicle trips on roads containing designated bicycle routes could momentarily impede or slow bicycle travel. In addition to encroachment permits. However, construction traffic may be concentrated near material yards or access points to the construction ROW. Therefore, to ensure that impacts are less than significant, Mitigation Measure T-1b (Prepare Traffic Control Plan(s)) is proposed and requires that traffic control plan(s) be prepared by SCE. With the review of the affected jurisdictions regarding oversight of traffic control procedures required by Mitigation Measure T-1b (Prepare Traffic Control Plan(s)), impacts would be less than significant.

Rail

LESS THAN SIGNIFICANT WITH MITIGATION. The Proposed Project route would cross BNSF and UPRR controlled rail lines in Segment 1. Transmission line stringing activities over these railroads could temporarily affect rail operations, resulting in a significant impact to rail operations. Mitigation Measure T-1c (Obtain permits or approvals for crossings or working in railroad right-of-way) requires SCE to coordinate with these rail operators and obtain all required permits or approvals for crossing or working in railroad ROW and implement all conditions for such permits or approval to meet each company's safety requirements and avoid disruption to rail operations. With the implementation of Mitigation Measure T-1c (Obtain permits or approvals for crossings or working in railroad right-of-way), impacts would be less than significant.

Mitigation Measures for Impact T-1

T-1a **Prepare Construction Transportation Plan.** Construction traffic has the potential to significantly affect the performance of regional and local roadways by generating additional vehicle trips, near material yards and access points to the ROW. SCE shall prepare a Construction Transportation Plan (CTP) describing alternate traffic routes, timing of commutes, methods of reducing crew-related traffic, and other methods for reducing construction-generated additional traffic on regional and local roadways. The specific measures to minimize potential significant conflicts with relevant ordinances or plans shall be defined by SCE's direct coordination with each affected jurisdiction.

At minimum, the CTP shall require construction workers to park personal vehicles at staging yards or designated assembly points and carpool to work locations in order to limit the number of construction-related vehicles on the road. At construction sites, vehicles shall be required to park within the project ROW, within disturbance areas defined on CPUC-approved construction plans, or on access roads to the maximum extent possible. Parking shall not be permitted in areas with dry vegetation that could pose a fire hazard. SCE shall submit the CTP to CPUC, Caltrans, and affected local jurisdictions for review and approval at least 30 days prior to commencing construction activities.

T-1b **Prepare Traffic Control Plan(s).** Prior to the start of construction and as part of any required traffic encroachment permits, SCE shall submit Traffic Control Plans (TCPs) to the CPUC and agencies with jurisdiction over public roads where construction has the potential to temporarily require lane or roadway closures and/or where public roads would be affected by oversized vehicle trips.

The TCP(s) shall specifically address, but not be limited to:

Road Safety

- Provide the locations of all roads or traffic lanes that would need to be temporarily closed due to construction activities, including aerial hauling by helicopter and conductor stringing activities.
- Provide the locations and define use of flaggers, warning signs, lights, barricades, delineators, cones, arrow boards, etc. according to standard guidelines outlined in the Manual on Uniform Traffic Control Devices (MUTCD), the Standard Specifications for Public Works Construction, and/or the California Joint Utility Traffic Control Manual (CJUTCM) to provide safe work areas and to warn, control, protect, and expedite vehicular and pedestrian traffic.
- Provide the locations and define use of guard poles, netting, or similar means to protect moving traffic and structures for any construction or installation work requiring the crossing of a local street, highway, or rail line.
- Provide oversize vehicle routes, particularly on local roadways.
- Specify use of continuous traffic breaks operated by the California Highway Patrol on state highways and show locations as feasible.

Restrict lane closures

- To minimize traffic congestion and delays during construction, TCPs shall show how SCE plans to restrict all necessary lane closures or obstructions on public roadways associated with overhead construction activities to off-peak traffic periods. Unless absolutely necessary, lane closures shall not occur between the peak hours of 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m., or as directed in writing by the affected public agency in the encroachment permit.

Emergency Services

- Police departments, fire departments, ambulance services, and paramedic services that are likely to serve areas where temporary lane or road closures would occur shall be notified at least 30 days in advance by SCE of the proposed locations, nature, timing, and duration of any construction activities affecting roads and advised of any access restrictions that could impact their effectiveness.
- Include measures ensuring work crews are ready at all times to accommodate emergency vehicles, such as having the ability to immediately stop work for emergency vehicle passage and implement short detours and alternate routes developed in conjunction with local agencies.
- Identify all emergency service agencies that were contacted, include contact information for those agencies, present any coordination agreements, and specify coordination procedures.

Minimize disruption of bus and transit service

- Describe how SCE coordinated with local and regional agencies or organizations that provide regular bus or transit service in the project area at least 30 days prior to construction to reduce potential interruption of these services.

Ensure pedestrian and bicycle circulation and safety

- Where construction activity will result in bike route or bike path closures, appropriate detours shall be established, and detour signs shall be posted. Detours and closures required for safe pedestrian and bicycle access through or around the construction area shall be identified in a circulation plan included in the TCP(s). All detours and related signage shall be consistent with the standard guidelines outlined in the U.S. Department of Transportation's Manual on Uniform Traffic Control Devices (MUTCD).

Provide access to property

- When construction activities block access to a property and the property includes a residence or business, TCPs shall indicate how SCE will work with the property owner, tenant, or business owner to provide reasonable alternate access. If construction involves trenching across or in front of the property's point of access and alternative access is not available, SCE shall lay a temporary steel plate trench bridge as needed and upon request in order to ensure access when not actively constructing at the affected location.

The TCP(s) shall identify persons or agencies contacted, contact information, and the date of contact, and shall summarize discussions and/or agreements reached, if any. SCE shall submit the TCP(s) to CPUC, Caltrans, and affected local jurisdictions for review and approval at least 30 days prior to commencing construction activities. Copies of the TCP(s) shall be provided to the CPUC, the planning or traffic departments and transit agencies of the affected local jurisdictions, and all affected police departments, fire departments, and ambulance and paramedic services. Documentation of coordination with emergency service providers shall be provided to the CPUC at least 15 days prior to the start of construction if not provided in the applicable TCP(s).

T-1c **Obtain permits or approvals for crossing or working in railroad rights-of-way.** SCE shall obtain permits/approvals from affected rail owners (Union Pacific Railroad and Burlington Northern Santa Fay Railway) to ensure project construction activities crossing the rail ROW comply with each company's safety requirements and to avoid disruption to rail traffic. Copies of required permits or approvals shall be submitted to the CPUC at least 30 days prior to construction in or across rail ROWs.

Impact T-2: Conflict or be inconsistent with State CEQA Guidelines Section 15064.3(b) regarding vehicle miles traveled.

Construction

LESS THAN SIGNIFICANT. As discussed in CEQA Guidelines Section 15064.3(b)(3), a qualitative analysis of construction traffic vehicle miles travelled (VMT) is appropriate if existing models or methods are not available to estimate the vehicle miles traveled for the proposed project. Kern and Inyo County plans do not define a specific VMT for consideration of project impacts. San Bernardino County considerers a project to have a significant impact if the project VMT per person or employee is greater than 4% below the existing VMT per capita for the unincorporated County (SBC, 2019). A VMT per person above 19.7 would be considered significant and a VMT per employee above 23.1 would be considered significant for San Bernardino County (San Berardino County, 2021).

Project-related construction trips are not considered to generate a substantial or sustained increase in VMT compared to regional averages for rural construction projects, nor would they result in temporary GHG emission increases that could impact plans and policies related to the reduction of greenhouse gas emissions (see Section 3.10) by reducing VMT. As discussed in Impact T-1, transmission line work generally

is not sequential along the project route. Rather, multiple crews would be working at different locations along the alignment performing different tasks at different times. Consequently, transmission line workers would be dispersed throughout I-C Project route using the highways and arterials identified in Section 3.19.1 and would require different travel routes from day-to-day. This variability would result in varying VMT on any given workday.

As discussed above, based on the estimated workforce and daily truck trips to support construction, the Proposed Project is estimated to generate a total of approximately 300 daily roundtrips per day across the full I-C Project route (600 daily one-way trips) temporarily during construction. Construction activities would generate temporary trips from both workers and support truck trips. Daily passenger vehicle trips would be generated by worker commutes. Most temporary workers needed for construction of the Project are expected to reside within a 30–90-minute commute of the Project (assumed to be approximately 30–90-mile radius). This assumption is based on author experience observing worker commute habits during temporary construction projects, particularly recent transmission line projects, occurring within the area. Predicting a worker's commute is difficult for the Proposed Project given the rural location and amount of area covered by the I-C Project route. As a whole, given the amount of skilled construction labor available within greater Inyo, Kern, and San Bernardino Counties, it is expected that many construction workers would come from within a local workforce and expected commute area. While some specialized workers may come from outside the project area, such workers would likely seek transient housing (hotels, etc.) close to their active work site, thus resulting in a shorter overall commute and reduced VMT.

The construction-related trips required to build the Proposed Project would occur over 39 months and would be spread along the entire 262-mile Project ROW. While more trips would be concentrated near material yards, the trips at any particular area would not be substantial in comparison with existing volume along US 395 and other major Project area roadways.

Based on U.S. Census data, 18 percent of those residing within Inyo County have a daily work commute between 30-90 minutes in duration, 27 percent have the same commute within Kern County, and 43 percent have the same commute within San Bernardino County (U.S. Census Bureau, 2020). Therefore, the expected commute range and resulting VMT for temporary local construction workers is not considered to be uncharacteristic or substantially greater than typical commutes of a portion of the workforce residing within these Counties. Additionally, it is reasonable to assume that, in the absence of the Proposed Project, these constructions workers would be working on other jobs and generating a certain level of VMT on those other jobs. Because construction trips would be temporary, would likely replace other existing/alternative construction trips, and would be within a VMT commute range not substantially uncommon within the Counties, project construction worker commute trips would have less than significant impacts related to a substantial or sustained increase in VMT.

In addition to worker commute trips, construction would include truck trips during the workday for the delivery of equipment and materials, movement of cut-and-fill material, watering for dust control, concrete delivery, disposal of waste, deliver and removal of transmission infrastructure, and other various construction needs. These truck trips would likely come from within urbanized cities and communities located within each County, with some materials trips possibly originating from the Ports of Los Angeles, Long Beach, or San Francisco. However, these materials may be hauled via rail to closer locations before being trucked to work sites. Due to the rural location of the project site, some construction truck trips are expected to result in longer VMT to access the sites compared to typical construction projects developed within the Counties. It is expected that the construction contractor would seek local building materials and equipment, when available, due to reducing transportation costs. Additionally, all construction-related trips would be temporary and only in volumes necessary to deliver/remove equipment, materials, and waste from each work site. With the exception of material deliveries that may come from distant locations, average VMT by construction trucks are expected to be similar to typical construction-related

trips for rural/remote projects within the region. Therefore, construction-related truck trips, which are temporary, would have less than significant impacts related to a substantial or sustained increase in VMT.

Operations and Maintenance

NO IMPACT. Upon completion of construction, all truck trips and worker commute trips related to construction activities would cease. Once operational, routine maintenance of the I-C Project route would be similar or identical to existing conditions. Therefore, operation of the Project would have no impact related to substantial or sustained increase in VMT.

Impact T-3: Result in inadequate emergency access.

Construction

LESS THAN SIGNIFICANT WITH MITIGATION. As discussed under Impact T-1, temporary road closures could disrupt the operations of emergency service providers. Closures for stringing across major highways and roads would be short-term occurrences lasting a few minutes and would likely occur on days and at times which traffic is light. APMs TRA-1, TRA-2, and TRA-3 do not provide sufficient detail to ensure that traffic is safely controlled during construction, and impacts related to movement of emergency vehicles would remain potentially significant. Proposed Mitigation Measure T-1b (Prepare Traffic Control Plan(s)) requires that traffic control plan(s) be prepared by SCE. These plans would supplement SCE commitments provided in APM TRA-1 to further reduce potential impacts to emergency service vehicle operations through any roadway affected by the Project. This mitigation requires coordination with emergency service providers and SCE to prepare and implement plans for immediately accommodating emergency vehicles through the work area by stopping work to allow the passage of the emergency vehicle with minimal delay. With the implementation of Mitigation Measure T-1b (Prepare Traffic Control Plan(s)), impacts would be less than significant.

Operations and Maintenance

LESS THAN SIGNIFICANT. Upon completion of construction, routine maintenance of the I-C Project route would be similar or identical to existing conditions. Therefore, operation of the Project would have minimal impacts related to road closures that would restrict the movement of emergency vehicles.

Mitigation Measures for Impact T-3

T-1b **Prepare Traffic Control Plan(s).** Refer to full text provided under Impact T-1.

Impact T-4: Require the temporary closure of lanes or roadways resulting in a substantial increase in roadway hazards.

Construction

LESS THAN SIGNIFICANT WITH MITIGATION. As discussed under Impact T-1, temporary road closures could disrupt traffic flow on affected roadway segments. Construction work could limit or block access to a property, curtailing or preventing access to the property and any residences or businesses located on the property. This can also result in roadway hazards due to motorist confusion trying to access a property. While closures for stringing across major highways and roads would be short-term occurrences lasting a few minutes and would occur on days and at times which traffic is light, as typically required by encroachment permits, these closures could significantly increase roadway hazards if planning is not appropriate, creating a potentially significant impact.

Mitigation Measure T-1b (Prepare Traffic Control Plan(s)) is required in order to supplement SCE commitments provided in APM TRA-1 to further reduce potential roadway hazard impacts due to temporary lane closures by ensuring appropriate traffic breaks and other traffic controls are implemented. With the

implementation of Mitigation Measure T-1b (Prepare Traffic Control Plan(s)), impacts would be less than significant.

Operations and Maintenance

LESS THAN SIGNIFICANT. Upon completion of construction, routine maintenance of the I-C Project route would be similar or identical to existing conditions, with infrequent lane closures. Therefore, operation of the Project would have minimal impacts related to road closures that would restrict the movement of emergency vehicles.

Mitigation Measures for Impact T-4

T-1b **Prepare Traffic Control Plan(s).** Refer to full text provided under Impact T-1.

Impact T-5: Increase roadway hazards through damage to road surfaces.

Construction

LESS THAN SIGNIFICANT WITH MITIGATION. California Vehicle Code defines that loads may not exceed legal weight limits; these requirements are applicable to roads and bridges in the project area. A Caltrans special permit is required for the movement of vehicles/loads exceeding statutory weight and dimension limits. However, the movement of heavy trucks and equipment on roadways providing access to project sites potentially could result in damage to road surfaces, shoulders, curbs, signs, and light standards. Additionally, vehicles accessing work areas from public roads that do not have established driveways, as well as construction activities adjacent to or within a public road ROW, could also damage roadway surfaces. Such damage, unless properly repaired, would result in significant safety impacts to motorists.

Mitigation Measure T-5a (Repair roadways damaged by construction activities) is recommended to ensure damage and deterioration to roadway surfaces attributed to the Project would be repaired and any hazard to motorists from such repair reduced or avoided. With the implementation of Mitigation Measure T-5a (Repair roadways damaged by construction activities), impacts would be less than significant.

Operations and Maintenance

LESS THAN SIGNIFICANT. Routine maintenance of the I-C Project route would be similar or identical to existing conditions. Therefore, operation of the Project would have minimal impacts related to roadway damage.

Mitigation Measures for Impact T-5

T-5a **Repair roadways damaged by construction activities.** If roadways, sidewalks, medians, curbs, shoulders, or other roadway features are damaged by project construction activities, as determined by the affected public agency, such damage shall be repaired and streets restored to their pre-project condition or better by SCE. Prior to construction, SCE shall confer with agencies having jurisdiction over the roads anticipated to be used by heavy vehicles and those where construction activities could affect roadway surfaces. At least 30 days prior to construction, SCE shall photograph or video record all public roads within 500 feet in each direction of project access points (i.e., locations where vehicles leave public roads to reach project sites) and where construction activities could affect roadway surfaces. This documentation shall provide the respective local jurisdictions, CPUC, and Caltrans (if applicable) with a copy of these images to show pre-project conditions.

At least 15 days prior to construction, SCE shall provide a letter or email to CPUC confirming that the pre-project documentation has been executed. This communication

shall identify persons or agencies contacted, contact information, and the date of contact, and shall summarize discussions and/or agreements reached.

At the end of major construction, SCE shall coordinate with each affected jurisdiction to confirm the specific repairs required. Any damage is to be repaired to pre-construction or better condition within 60 days from the end of all construction, or on a schedule mutually agreed to by SCE and the jurisdiction. SCE shall provide CPUC confirming documentation when the coordination has been completed and when the repairs have been completed.

Impact T-6: Conflict with FAA recommendations to reduce hazards to navigable airspace, an airport land use plan, or restrictions to airspace related to active military flights.

This impact relates only to the operational (post-construction) height of installed Project structures, so construction effects are not addressed.

Operations and Maintenance

LESS THAN SIGNIFICANT. Regulations affecting control of hazards to use of air space are developed and implemented by the FAA (see Section 3.19.2.1). Pursuant to FAA guidelines, SCE is required to submit FAA Form 7460–1, Notice of Proposed Construction or Alteration, for project-related features and changes that meet Form 7460–1 height requirements. During FAA review, the FAA will identify which structures pose hazards and will recommend safety devices (e.g., marker balls). FAA will also determine whether any transmission structure heights would be restricted.

Additionally, as discussed in Section 3.19.1.2, portions of the Proposed Project travel adjacent to several Department of Defense (DOD) facilities: Naval Air Weapons Station China Lake (Segment 1), Edwards Air Force Base (Segments 3N and 3S), and Marine Corps Logistics Base Barstow (Segments 3N and 3S). Other portions of the Proposed Project traverse areas where airspace above the Project has been designated for low flying military operations.

The existing subtransmission structures are shorter than 200 feet. While current preliminary design (as defined in Table 2-2) does not define new structures taller than 200 feet, this design may be modified in final design phases. In addition, conductor spans in some locations could pose aviation hazards. The presence of new or taller replacement transmission structures and conductor wire spans proximate to airports and military bases could potentially affect aviation safety or aviation activities. SCE is required to adhere to FAA guidelines with regard to both the height of project components and any safety devices (marker balls, lights, etc.) to be installed on facilities. These regulations and consultations will result in construction of structures that are safe for both private and military aviation; the impact would be less than significant.

Mitigation Measures for Impact T-6

No mitigation is required.

Impact T-7: Create a hazard to the public or the environment through the transport of heavy loads with helicopters.

Construction

LESS THAN SIGNIFICANT WITH MITIGATION. Helicopters would be used to support construction activities and may include, but not limited to, areas where access is limited (e.g., no suitable access road, limited construction area to facilitate on-site structure assembly, and/or there are environmental constraints to accessing the project area with standard construction vehicles and equipment) or where use of helicopters could reduce the required time for electric system outages. Project related helicopter activities may

include transportation of construction workers, delivery of equipment and materials to structure sites, assist with transmission structure placement, structure removal, hardware installation, marker ball installation (if applicable), and conductor and fiber optic cable stringing operations. As described in Section 2.4.1.5, these types of activities would likely utilize light and medium duty helicopters (such as the Bell 500 and Kaman Kmax).

Helicopter construction activities would typically be based out of a staging yard. Staging yards utilized for helicopter operations would be selected based upon a variety of factors, including the optimization of flight time to work locations. Additionally, operation crews, as well as helicopter fueling and maintenance trucks, may be based in the staging yards. Staging yards may also be used for material storage and pole assembly activities. From these staging locations, newly assembled transmission pole sections, transmission hardware, construction equipment, and workers would be transported via helicopter (or ground-based vehicle) to installation sites. Table 2-3 (Potential Staging Yard Locations) identifies all construction yards, some of which would also serve as helicopter staging yards. Additionally, construction-related helicopters typically park overnight at the nearest public or private airport to the staging yard.

Helicopters with external loads, such as those used for construction of the Project, can pose hazards to those on the ground in the event of an accidental release of the load or material falling off. They can also pose a hazard to other aircraft due to limited maneuverability of a helicopter when transporting an external load.

Additionally, as discussed in Section 3.19.1.2, portions of the Proposed Project travel adjacent to several Department of Defense (DOD) facilities: Naval Air Weapons Station China Lake (Segment 1), Edwards Air Force Base (Segments 3N and 3S), and Marine Corps Logistics Base Barstow (Segments 3N and 3S). Other portions of the Proposed Project traverse areas where airspace above the Project has been designated for low flying military operations that could be affected by helicopter use.

With regard to helicopter use, SCE has included APM TRA-2 (see Table 3.19-6). APM TRA-2 simply commits SCE to preparing and implementing a helicopter use plan, but it does not provide any detail that would ensure that helicopter use would be safe in the Project environment. Therefore, Mitigation Measure T-7a (Prepare and implement a Final Helicopter Use Plan) is proposed to supplement APM TRA-2 and requires SCE to prepare and implement a final helicopter use plan and provides specifics for oversight. With the implementation of Mitigation Measure T-7a (Prepare and implement a final helicopter use plan), impacts would be less than significant.

Operations and Maintenance

LESS THAN SIGNIFICANT. During operations and maintenance, helicopters would be used for periodic line inspections and for insulator cleaning. However, the inspection and maintenance activities of the Project would be similar or identical to those occurring under existing conditions for the active transmission line. Therefore, helicopter use during operations and maintenance of the Project would not pose significant hazards to the public. Less than significant impacts would occur.

Mitigation Measures for Impact T-7

T-7a **Prepare and implement a Final Helicopter Use Plan.** SCE shall prepare and obtain approval of a Final Helicopter Use Plan prior to using helicopters to transport personnel, materials, or equipment for the deconstruction of existing project facilities or construction of new or replacement project facilities. The Final Helicopter Use Plan shall draw upon protocols and methods used on previous transmission line projects and shall be submitted to CPUC for review and approval.

The Federal Aviation Agency (FAA) has jurisdiction over U.S. airspace, aircraft, aircraft operations, airports, and pilots and the Department of Defense (DOD) operates several

facilities near the Project. To the extent that provisions do not conflict with any FAA or DOD requirements, the following shall apply to helicopter use and be incorporated in the Final Helicopter Use Plan.

- Measures for ensuring all aircraft and pilots shall be in full compliance with applicable FAA requirements and standards.
- The specific facilities, towers, poles, and spans requiring deconstruction or construction using helicopters shall be identified.
- The yards to and from which helicopters would fly (fly yards) shall be identified and shall be of sufficient size to ensure safe operations, given the other activities occurring at the yards and the vicinity.
- Measures to ensure temporary staging of materials and assembly of tower sections outside of approved yards shall not occur without prior approval of CPUC, as appropriate.
- Fly yards shall be sufficiently far from occupied residences to not create an unacceptable level of noise or dust.
- The means used for dust and noise control and for safe refueling shall be specified for each fly yard.
- Establish designated flight corridors between staging and work areas avoiding residential areas, including flight corridors between utilized airports and staging/work areas.
- Means to ensure external load operations avoid occupied structures and urban areas.
- Locations of traffic control where external load operations would 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.
- All project-related flight paths (including those between airports and fly yards) shall minimize flights near residences, schools, hospitals, nursing homes, and other sensitive group receptors.
- Except in an emergency, helicopters shall land or hover near the ground only in areas previously approved for landing, and all dust control and biological and cultural resource protection requirements shall apply.
- External loads will be secured by appropriate rigging, including boxing, netting, choking, and cabling, or other suitable means. Only qualified riggers shall prepare and attach external loads to helicopters, and rigging shall be appropriate to the nature of the load, including the use of devices as necessary to prevent materials being lost in flight. Where appropriate to reduce load in-flight spinning and movement, drag chutes will be attached to loads. The need for drag chutes will be determined by the pilot and rigging personnel, where appropriate. At locations where rigging is to occur, a sufficient supply of appropriate rigging and containment materials in good repair shall be on hand at all times.
- All aircraft are to be configured with weight sensors such that, when preparing to haul external loads, the pilot is able to determine the weight of the load being lifted

- Yards or landing zones shall have a designated qualified individual managing the movement of aircraft in and out of the yard or landing zone when flight activity is high.
- Appropriate protocols for communication among pilots and between pilots and the ground shall be developed and implemented.
- Daily flight notifications shall be documented prior to commencement of any project flight activity. Information provided in the e-mail shall include pilot name, contact number, aircraft type, aircraft registration number, aircraft color, work/flight area, beginning time, estimated completion time, and scope of work. This information shall be available to CPUC monitors as requested.
- Daily helicopter construction information (for the next workday) shall be emailed to CPUC monitors (on the day prior to the planned work). These notification emails shall provide the specific sites to be used for helicopter picks and the destination of the materials or assemblages being lifted out.
- A GPS-based data system shall be installed in each aircraft:
  - The system shall identify for the pilot all project-approved project flight paths and those areas where overflights are restricted (such as seasonally restricted bird nesting areas and sensitive residential or institutional areas) and shall be updated as often as any flight restrictions are implemented or lifted.
  - The system shall automatically record and preserve flight data sufficient to identify the aircraft's flight path, including altitude above ground. The system shall be capable of providing the information required with regard to flight path and aircraft identifier and provide a location "ping" no less frequently the once every 3 seconds. These data shall be collected daily and maintained by SCE or its contractor for a period of no less than six months and made available to CPUC upon request.

The Helicopter Use Plan shall be submitted to CPUC for review and approval at least 60 days prior to the use of helicopters on the Project.

3.19.4. Mitigation Monitoring, Compliance, and Reporting

Table 3.19-7 presents the mitigation monitoring, compliance, and reporting information for transportation.

Table 3.19-7. Mitigation Monitoring Program – Transportation

Mitigation Component	Text or Description
Mitigation Measure T-1a	**Prepare Construction Transportation Plan**
Location	Regional and local roadways near material yards and access to project ROW
Monitoring / Reporting Action	Construction Transportation Plan submitted to CPUC, Caltrans, and affected local jurisdictions
Effectiveness Criteria	Construction Transportation Plan is implemented as approved
Responsible Agency	CPUC, Caltrans, and affected local jurisdictions
Timing	30 days prior to start of construction
Mitigation Measure T-1b	**Prepare Traffic Control Plan(s)**
Location	Public roads where construction has the potential to temporarily require lane or roadway closures and/or where public roads would be affected by oversize vehicle trips
Monitoring / Reporting Action	Traffic Control Plan(s) are to be submitted to CPUC, Caltrans, and affected local jurisdictions

Mitigation Component	Text or Description
Effectiveness Criteria	Traffic Control Plan(s) are implemented as approved
Responsible Agency	CPUC, Caltrans, and affected local jurisdictions
Timing	30 days prior to construction
Mitigation Measure T-1c	**Obtain Permits or Approvals for Crossing or Working in Railroad Rights of Ways**
Location	Areas where project construction activities cross railroad rights of ways
Monitoring / Reporting Action	Permits or Approvals to be submitted to CPUC
Effectiveness Criteria	Permits or approvals granted by affected rail owners
Responsible Agency	CPUC
Timing	30 days prior to construction
Mitigation Measure T-5a	**Repair Roadways Damaged by Construction Activities**
Location	Roads anticipated to be used by heavy vehicles and those where construction activities could affect roadway surfaces
Monitoring / Reporting Action	Documentation when the coordination has been completed and when the repairs have been completed to be submitted to CPUC
Effectiveness Criteria	Any damage is repaired to pre-construction or better condition
Responsible Agency	CPUC, Caltrans, affected local jurisdictions
Timing	30 days prior to construction; documentation of pre-project conditions. 15 days prior to construction; confirmation of execution of pre-project documentation. 60 days from end of all construction; any damaged repaired.
Mitigation Measure T-7a	**Prepare and implement a final helicopter use plan**
Location	Areas where helicopter use is required for the Proposed Project
Monitoring / Reporting Action	Final helicopter use plan to be submitted to CPUC
Effectiveness Criteria	Final helicopter use plan is implemented as approved
Responsible Agency	CPUC
Timing	60 days prior to the use of helicopters on the Project

3.19.5. References

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3.20. Utilities and Service Systems

This section describes existing environmental conditions and anticipated impacts associated with the Proposed Project for Utilities and Service Systems. This section focuses on the potential for construction of SCE's Proposed Project to affect regional or local water and waste disposal capacity, and the potential for the Proposed Project to affect existing utility operation. Section 3.17, Public Services, discusses potential effects on governmental facilities and emergency services.

The environmental setting for Utilities and Service Systems is presented in Section 3.20.1 and relevant regulations and standards are summarized in Section 3.20.2. Section 3.20.3 describes the impacts on the environment associated with implementation of the Proposed Project. These impact discussions introduce mitigation measures that would reduce or avoid significant adverse environmental impacts. Section 3.20.4 presents the mitigation monitoring, compliance, and reporting information, and Section 3.20.5 lists references cited in this section. Chapter 4 describes the environmental impacts of the alternatives to the Proposed Project. Cumulative impacts for all disciplines are considered in Chapter 5.

There were no comments received during the scoping period that addressed utilities and service systems.

3.20.1. Environmental Setting

3.20.1.1. Regional Setting

Because the I-C Project right-of-way (ROW) extends along 262 linear miles, it has the potential to affect services in several jurisdictions. The area in consideration for the I-C Project includes Inyo, Kern, and San Bernardino Counties and the City of Barstow. The Project would pass near the cities of Bishop and Ridgecrest, as well as several census designated communities.

The primary utilities and services that may be affected by construction and operation of the Proposed Project include:

- Electricity
- Water supply
- Solid waste disposal
- Buried utilities (natural gas pipelines, cable, and telephone systems)

The following systems are also utilities but would not be affected by the Proposed Project due to its design and operational characteristics: stormwater management and sewer and wastewater treatment. The footprints of the subtransmission towers are too small to impact stormwater runoff and would not overlay or impede any stormwater management systems or drainage channels. No part of the Project would impact a wastewater treatment facility. See additional analysis below in Section 3.20.3.1.

3.20.1.2. Environmental Setting by Segment

This discussion describes the existing utilities and service systems (water, waste disposal, and buried utilities) in the vicinity of the Proposed Project components. The project would require as many as 200 construction personnel working at a time, but they would be focused in different areas of the project ROW depending on the construction schedule and the activities occurring. Contractor construction personnel would be based out of the contractor's existing yard or temporary material staging yards set up for the Project. After construction, operations and maintenance activities would be completed by existing SCE staff and consultants, similar to existing conditions.

Segment 1: Bishop to Inyokern

The northern 115 miles of Segment 1 are located in Inyo County, and the southern 11 miles are located in Kern County.

Water

All of Segment 1 and the northern portion of Segment 2 in Kern County are located within the Inyo-Mono Integrated Regional Water Management (IRWM) Program Region. This region wholly encompasses Inyo County and includes a very small portion of Kern County.

The purpose of the Inyo-Mono IRWM Program is to foster coordination, collaboration, and communication among water-related stakeholders in the region for the purpose of developing water management strategies and projects that will benefit multiple entities and enhance water supply, water quality, and watershed health. The IRWM planning region is wholly contained within the Regional Water Quality Control Board Region 6 (Lahontan) boundaries (IMRWMG, 2019).

Inyo County Water Supply

Water is not imported into Inyo County, and there are no plans to do so. Groundwater is a critical water supply source. Water supply in the Inyo-Mono IRWM planning area has not been calculated due to lack of data, but it is known that most of the established water systems use groundwater as their supply source, and most residents who are not on a water system use their own domestic wells. Some water supply comes from surface water originating from snowmelt, and groundwater is recharged by infiltration of snowmelt (IMRWMG, 2019).

There are several public water systems and water districts in Inyo County. The Inyo County Public Works department currently operates community water systems located in Laws, Independence, and Lone Pine, which collectively serve approximately 2,259 people (IMRWMG, 2019). These three water systems were operated by LADWP until 2001, at which time an agreement was reached to transfer these systems to the County (Inyo County, 2001). The water is from an allotment supplied by LADWP under terms of the Long Term Water Agreement between Inyo County and LADWP. Aside from the Inyo County-operated water systems, the following are public water systems or community service districts that provide domestic water in the vicinity of the Proposed Project (IMRWMG, 2019).

- **City of Bishop (3,879 people served).** The City of Bishop Department of Public Works produces and delivers water for consumption, irrigation, and fire suppression for city residents and services. Water is produced and distributed through almost 22 miles of water mains. The City services about 1,100 accounts, including some outside of the City limits. All of this water is groundwater, and produced through two production wells, with one well on standby. A large section of west Bishop is served by individual wells (SCE, 2020). The average daily demand per capita over the period 1997 through 2006 varied between 390 and 490 gallons per day (IMRWMG, 2019). Because much of "greater Bishop" is outside of the official limits of the City of Bishop, other water agencies supply more water to more people than does the City of Bishop Department of Public Works.
- **Big Pine.** The Big Pine area is serviced by the Big Pine Community Service District and Rolling Green Utilities, Inc. The Big Pine Paiute tribe has its own water system.
- **Cartago.** The Cartago Mutual Water Company is the water supplier for Cartago. The largest industrial water user in the Owens Valley is also a water exporter because its product is bottled water. The Crystal Geyser Roxane facility at Cartago on the west side of Owens dry lake pumps groundwater for bottling and has a design capacity of about 150 acre-feet per year. The Crystal Geyser Bottling Plant community services district serves 100 people plus industrial water use for the bottling plant.
- **Independence.** In Independence, the water system and sewer disposal is provided by a town water system operated by Inyo County and sewer system operated by the Los Angeles Department of Water and Power.

The following small providers are also defined in the IMRWMG:

- Baker Creek Campground (100 people served)
- Big Pine Creek Campground (100 people served)
- Big Pine Community Service District (1,000 people served)
- Owens Valley Conservation Corporation (250 people served)
- Coso Junction Ranch Store (1,000 people served)
- Diaz Lake Campground (4,000 people served)
- Foothill Lone Pine Mobile Home Park (100 people served)
- Manzanar National Historic Site (298 people served)
- North Lone Pine Mutual Water Company (70 people served)
- Mount Whitney Golf Club (100 people served)
- Olancha RV and MHP (30 people served)

These water districts and purveyors (if aggregated) cover less than one percent of the area of the Inyo-Mono IRWM region. Most of these entities have considerable financial and operational difficulties related to their small scale and modest customer base. Water supply and water use data was not available for the majority of the local water districts that serve Inyo County (SCE, 2020). Areas that are not served by public water systems are served by individual wells or other household supply or are served by mutual water companies with a small service population (IMRWMG, 2019).

Inyo County Water Demand. The principal uses for water in the Inyo-Mono IRWM planning area are agriculture and export. It is estimated that water applied to irrigated fields and pastures is approximately 250,000 to 350,000 acre-feet per year. From approximately 2009 to 2019, the average export amount dropped to about 211,000 acre-feet (AF) (IMRWMG, 2019).

Inyo County has a groundwater management agreement with the City of Los Angeles through the LADWP (Inyo County, 2001). The predominate demand for water along Segment 1 is for agriculture use, export to Los Angeles, and for environmental mitigation (SCE, 2020). Environmental water demands in the region are primarily related to LADWP mitigation programs. For example, in 2011, these uses amounted to about 95,000 AF for Owens Lake dust abatement, 16,500 AF for the Lower Owens River Project, 10,500 AF for enhancement and mitigation projects, and 10,400 AF for recreation and wildlife (IMRWMG, 2019).

Residential and commercial demands involve much smaller quantities of water because of the low population in the region. A national survey of water use suggested that average per capita use in Inyo County is about 470 gallons per day equivalent to 0.5 acre-feet per year.

Kern County Water Supply

The Indian Wells Valley Water District (IWVWD) and the Inyokern Community Services District provide water in the vicinity of the community of Inyokern. Most of the available water supply is from various groundwater basins (IMRWMG, 2019).

- **Indian Wells Valley Water District**. The IWVWD is a medium-sized public water retailer, providing water to about 12,000 residential and commercial connections, totaling approximately 30,000 residents, in the Ridgecrest area of Kern and San Bernardino Counties, California. The district service area is approximately 38 square miles of the Indian Wells Valley, which lies in the northern Mojave Desert, southeast of the Sierra Nevada and south of Owens Valley. The water source for Indian Wells Valley Water District is a single aquifer, which is a naturally-occurring underground reservoir, and area residents and businesses pump nearly 30,000 AF per year, while replenishment from rain and snow is closer to 10,000 AF. IWVWD has over 200 miles of pipeline as well as storage tanks, wells, pumping plants, boosters, arsenic treatment plants, and office headquarters. The District operates 10 active wells with capacities ranging from 1,000-1,400 gallons per minute. There are eleven storage tanks with capacities ranging from 100,000 gallons to 5 million gallons at strategic locations throughout the District, with at least one

tank located in each of five service zones. In 2001, the IWVWD produced 8,400 acre-feet per year. The district's largest recent capital investment (about $15 million) was to support two arsenic treatment plants (IMRWMG, 2019).

- **The Inyokern Community Services District** serves approximately 420 households according to U.S. Census Bureau data for 2000. In 2001, the Inyokern Community Services District used 97 acre-feet/year of water. Water use has been steadily declining since the mid-1980s, primarily due to reductions in the work force at NAWS China Lake (IMRWMG, 2019).

Non Potable Water

Many communities in the Inyo-Mono planning region primarily depend on groundwater as their potable water supply. However, many water systems within the planning region regularly exceed the state and federal maximum contaminant levels. This is because natural contaminants are commonly found in surface water and groundwater sources due to the chemical composition and weathering processes of the bedrock that underlies most of the region. Because of the limited resources of these small, rural communities, some are unable to bring their drinking water sources into compliance and rely on bottled water as their primary source of drinking water. The Inyo-Mono Regional Water Management Plan described several projects in different stages of implementation, two of which included increasing access to potable water, and one which proposed a wastewater recycling facility to produce and distribute non-potable water landscaping, agriculture, and environmental restoration in the Big Pine area that would otherwise be supplied with an already-limited potable water supply that serves two disadvantaged communities (IMRWMG, 2019).

Solid Waste and Landfills

Inyo County Landfills

The Inyo County Integrated Waste Management Department operates three landfills within Inyo County. Collectively, these have a remaining capacity of approximately 4.4 million cubic yards. They are listed below.

- **Bishop Sunland Landfill (Class III).**[1] Located south of the City of Bishop, and approximately 0.5 miles north of the Proposed Project. The Bishop-Sunland Landfill has a permitted capacity of 6.0 million cubic yards, and a remaining capacity of 3.3 million cubic yards (CalRecycle, 2024a)
- **Independence Landfill (Class III).** Located southeast of the Town of Independence, and approximately 1.6 miles west of the Proposed Project. The Independence Landfill has a permitted capacity of 0.32 million cubic yards, and a remaining capacity of 0.13 million cubic yards (CalRecycle, 2024b)
- **Lone Pine Landfill (Class III).** Located southeast of the Town of Lone Pine, and approximately 0.2 miles east of the Proposed Project. The Lone Pine Landfill has a permitted capacity of 1.0 million cubic yards, and a remaining capacity of 0.99 million cubic yards (CalRecycle, 2024c).

Treated Wood Waste (TWW) needs to be disposed of in specific landfills, which are authorized by the Regional Water Quality Control Board to accept treated wood waste, conditionally upon compliance with all applicable requirements outlined in AB332 (see Section 3.20.2) and set forth in Section 25230 of the Health and Safety Code. There are no landfills in Inyo County that accept TWW (Waterboards, 2023).

Kern County Landfills

The Kern County Public Works Department regulates seven landfills and eight transfer or bin sites (Kern County Public Works, 2024). The Kern County solid waste infrastructure provides adequate disposal

[1] Class III Landfills are defined by the SWRCB as landfills for Nonhazardous Solid Waste.

capacity and is capable of meeting the projected integrated waste management needs of the County through 2040 (Kern County, 2015). There are no landfills within 5 miles of Segment 1 in Kern County.

There are two landfills in Kern County that are approved by the California State Water Resources Control Board (Waterboards) to accept TWW. These are the Bakersfield Metropolitan (Bena) Sanitary Landfill, located approximately 60 miles west of the Proposed Project, in Caliente, California, and the Clean Harbors Buttonwillow, Inc Landfill, which is located approximately 100 miles west of the Proposed Project, in Buttonwillow (Waterboards, 2023).

Electricity

Inyo County Electricity

For electricity, the Pacific DC Intertie is a large 5,000 kV multi-terminal overhead transmission line that extends from Celilo Station in Northern Oregon to Sylmar Station in Southern California. The transmission line extends along the western portion of the County. Southern California Edison maintains these transmission lines in Inyo County. The Los Angeles Department of Water and Power has transmission lines running from Mono County through Inyo County southward to the Southern California metropolitan centers. No major pipelines extend through the County (Inyo County, 2001).

Most of the electricity in western Inyo County is provided by LADWP. The southern portion of Inyo County is served by SCE. Because LADWP has both transmission and distribution systems in Inyo County, SCE's construction and operations efforts in Inyo County are coordinated carefully with LADWP's Bishop Administrative Office, as well as with LADWP's engineering team in its Los Angeles Headquarters. LADWP transmission lines in Segment 1 include the Barren Ridge-Inyo 230 kV transmission line and the Pacific DC Intertie; these lines cross the I-C ROW 6 times and closely parallel it in other areas. SCE's Coso-Kramer 230 kV line also parallels the Segment 1 ROW for about 14 miles, north from the Inyokern Substation.

Electricity service in Inyo County is provided by LADWP and SCE. Those areas to the east of Chicago Valley are provided electricity by Las Vegas Power and Light through an agreement with SCE. Given the minor increase in demand expected in the County, electric loads of the County are within the parameters of the overall projected load growth that they are planning to meet in the area. Unless the demand for electrical generating capacity exceeds their estimates, and provided that there are no unexpected outages to major sources of electrical supply, they expect to meet electrical requirements with current facilities for the next several years in Inyo County (Inyo County, 2001).

Kern County Pipelines and Other Buried Utilities

Inyo County Natural Gas. There are no natural gas providers in Inyo County (Southern California Gas Company, 2015).

Kern County Natural Gas. Natural gas service in Kern County is provided by Southern California Gas Company (Kern County, 2009). Communities that are not served by gas pipelines are served by individual gas tanks.

Inyo County Telephone and Cable TV. USA Media Group provides cable television services for 4,300 customers in the Bishop area, 544 in Big Pine, 113 in Round Valley, 180 in Independence, and customers in Lone Pine. The company has receiver and microwave facilities on Cerro Gordo Peak, Poverty Hill, Poleta Canyon, and in Lone Pine. The company also has an equipment building on a small, leased parcel in each of the four communities it serves (Inyo County, 2001).

Kern County Telephone and Cable TV. The following cable television systems provide cable television and phone service to Kern County: AT&T, Spectrum, Mediacom California, LLC, DirecTV, Charter Communications, CalNeva Broadband, LLC, Frontier Communications, and Dish Network. The County administers those systems operating in the unincorporated areas only. Systems operating within city boundaries are

administered by the respective cities. The County enters into franchise agreements with the cable television systems to permit use of public rights-of-way for cable facilities (Kern County, 2024).

Segment 2: Inyokern to Kramer Junction

The northern 26 miles of Segment 2 are in Kern County, and the southern 23 miles are in San Bernardino County.

Water

Kern County Water Supply

The northern 26 miles of Segment 2 within Kern County is within the Inyo-Mono Integrated Regional Water Management Region. A short portion of Segment 2 within eastern Kern County is within the Antelope Valley-East Kern Water Agency (AVEK), which manages approximately 2,400 square miles in several counties.

The remainder of the Project, including the southern 23 miles of Segment 2, and the entirety of Segments 3N and 3S are within San Bernardino County, and are within the region covered by the Mojave Water Agency (MWA).

Water supply in the project study area is provided by various sources including municipal water departments, local water districts and water agencies, and private water companies. The majority of the available water supply is from various groundwater basins. The following are public water systems or community service districts that provide domestic water that are in the vicinity of the Proposed Project (IMRWMG, 2019).

- **Ridgecrest.** Indian Wells Valley Water District (34,900 people served)
- **Inyokern.** Inyokern Community Service District (984 people served) and East Inyokern Mutual Water (87 people served)

The Indian Wells Valley Water District and the Inyokern Community Services District provide water in the vicinity of the communities of Inyokern and Ridgecrest. Further description is provided for Segment 1 above.

San Bernardino County Water Supply

The unincorporated areas within San Bernardino County have access to domestic water sources that are generally supplied through local and imported water. Approximately 85 percent of the domestic water is supplied by local groundwater sources and the remaining 15 percent is supplied by imported purchased water. Imported water is primarily purchased from the Metropolitan Water District through the State Water Project as a supplemental source to local groundwater supplies (San Bernardino County, 2018). While several regional water wholesalers distribute this imported water throughout the County, there are over 400 retail and private water purveyors manage the majority of the groundwater pumping and distribution (San Bernardino County, 2019).

The Mojave Water Agency is the primary water basin agency in San Bernardino County, but there are also water districts and county special districts (CSDs) that provide distribution services for water supplies. The MWA is a regional wholesale provider responsible for managing groundwater resources and for ensuring a reliable water supply within its service area boundaries. Water supply in the MWA service area comes from numerous sources, which include natural surface water flows, wastewater imports from outside the MWA service area, State Water Project imports, and return flow from pumped groundwater not consumptively used. Almost all of the water used within the MWA service area is supplied by pumped groundwater. Annual water supply in 2010 was 179,438 acre-feet; demand was 145,875 acre-feet. Forecast supply in 2020 is 192,339 acre-feet, with demand estimated to be 159,544 acre-feet. Similar surpluses, of approximately 30,000 acre-feet, are projected through at least 2035 (SCE, 2020).

Solid Waste and Landfills

Kern County Landfills

There are two landfills in Kern County that are in the vicinity of the Proposed Project. These are the Ridgecrest Landfill and the Boron Landfill.

- **Ridgecrest Recycling and Sanitary Landfill (Class III).** Located approximately 2.3 miles east of the Proposed Project (Segment 2), and approximately 4.4 miles southeast of the Inyokern Substation. The Ridgecrest Landfill has a permitted capacity of 10.5 million cubic yards, and a remaining capacity of 5.0 million cubic yards. The landfill has a maximum permitted throughput of 701 tons per day (CalRecycle, 2024d).
- **Boron Sanitary Landfill (Class III).** Located approximately 6 miles west of the Proposed Project and Kramer Junction (Segment 2, 3N and 3S). The Boron Sanitary Landfill has a permitted capacity of 1.1 million cubic yards, and a remaining capacity of 0.2 million cubic yards. The landfill has a maximum permitted throughput of 200 tons per day (CalRecycle, 2024g).

There are two landfills in Kern County that are approved by the California State Water Resources Control Board (Waterboards) to accept TWW. These are the Bakersfield Metropolitan (Bena) Sanitary Landfill, located approximately 60 miles west of the Proposed Project, in Caliente, California, and the Clean Harbors Buttonwillow, Inc Landfill, which is located approximately 100 miles west of the Proposed Project, in Buttonwillow (Waterboards, 2023).

San Bernardino County Landfills

The County of San Bernardino Solid Waste Management Division (SWMD) is responsible for the operations and management of the solid waste disposal system in the county. There are five regional landfills in San Bernardino County, none of which are within 5 miles of Segment 2.

Electricity

SCE provides electricity service to properties in all portions of Segment 2. The I-C ROW parallels SCE's Coso-Kramer 230 kV line along the full length of this segment. At Kramer Junction (the south end of Segment 2), there are multiple transmission lines crossing and paralleling the I-C ROW.

Pipelines and Other Buried Utilities

Kern County Natural Gas. Gas is served to Kern County customers primarily by Pacific Gas & Electric (PG&E) and Southern California Gas Company (Kern County, 2004).

San Bernardino County Natural Gas. Gas is served to San Bernardino County by Southern California Gas Company and by the Southwest Gas Company (San Bernardino County, 2019).

Kern County Telephone and Cable TV. There are several telecommunications companies in Kern County, including AT&T, CAN Communications, Brooks Fiber, Cox Long Distance, Evans Communications, Excel Center, GST Telecom California, GTE Wireless, Howell, LDDS-Metromedia, LCI International, MCI Telecom-munications Corp., National Comtel Network, Inc., Pac-West Telecomm Inc., SBC, Prodial Communications Inc., Sprint, TD Enterprises, and Verizon.

San Bernardino County Telephone and Cable TV. There are six telephone, TV, and internet providers in San Bernardino County, including Spectrum, Earthlink, T-Mobile, Hughesnet, Frontier, and Viasat (CableTV, 2024).

Segment 3N and Segment 3S: Kramer Junction to Barstow to Daggett

These segments pass through unincorporated San Bernardino County, including the communities of Hinkley, Daggett, and the City of Barstow.

Water Supply

While several regional water wholesalers distribute this imported water throughout San Bernardino County, numerous retail and private water purveyors manage the majority of the groundwater pumping and distribution. The following CSDs are within the project vicinity.

- **The Mojave Water Agency** is the primary water basin agency in San Bernardino County, but there are also water districts and county special districts (CSDs) that provide distribution services for water supplies. Water supply for MWA's service area is sourced almost entirely from pumped groundwater from the various basins, subbasins, and aquifers in the area. Groundwater is recharged by natural storm water flows, infiltration of the Mojave river and tributaries, State Water Project imports to recharge basins, wastewater imports, and irrigation and wastewater return flow. It is projected that under a normal year, the MWA would have a total supply of 156,580 acre-feet (Mojave Water Agency, 2021).
- **Daggett CSD.** The Daggett CSD provides water, streetlighting, fire protection, and park and recreation services. While the permanent population of this community is low (current service population approximately 1,000), the services are also used by travelers passing through on Interstate 40. Water production rights are determined by the adjudication of the Mojave Water Basin, with a based annual production of 304 acre-feet (San Bernardino County, 2018).
- **Golden State Water Company.** The City of Barstow currently receives water from the Golden State Water (GSW) Company. The undeveloped portions of the City are currently unserved by the system. (City of Barstow, 2014).

Solid Waste and Landfills

The County of San Bernardino Solid Waste Management Division (SWMD) is responsible for the operations and management of the solid waste disposal system in the county. The disposal system consists in part of five regional landfills; of these, one is located 1.7 miles south of Segment 3S: the Barstow Sanitary Landfill. SWMD provides the waste disposal site for the City of Barstow.

- **Barstow Sanitary Landfill (Class III).** Located 1.7 miles south of the Proposed Project (Segment 3S), in Barstow. The Barstow Landfill has a permitted capacity of 80.4 million cubic yards, and a remaining capacity of 71.5 million cubic yards. The landfill has a maximum permitted throughput of 1,500 tons per day (CalRecycle, 2024e).

There are three landfills in San Bernardino County that accept TWW. These are the Victorville Sanitary Landfill, the California Street Landfill, and the Mid-Valley Sanitary Landfill. The California Street and the Mid-Valley Landfills are both over 50 miles away from the Proposed Project (State Water Resources Control Board, 2023).

- **Victorville Sanitary Landfill (Class III).** Located approximately 20 miles south of the Proposed Project (Segment 3S), near Victorville. The Victorville Landfill has a permitted capacity of 93.4 million cubic yards, and a remaining capacity of 79.4 million cubic yards. The landfill has a maximum permitted throughput of 3,000 tons per day (CalRecycle, 2024f).

Electricity

SCE provides electricity service to properties in all portions of Segments 3N and 3S, including the City of Barstow and the communities of Daggett and Hinkley. At Kramer Junction (the western end of Segments 3N and 3S), there are multiple transmission lines crossing and paralleling the I-C ROW, but all are SCE facilities.

Along the 44-miles of Segment 3S, the I-C ROW does not cross other transmission or subtransmission lines; it shares its ROW with no other lines. Segment 3N parallels the SCE Coolwater-Kramer, Coolwater-Sandlot, and Sandlot-Kramer 230 kV lines along its entire length.

Pipelines and Other Buried Utilities

San Bernardino County Natural Gas. Gas is served to San Bernardino County by Southern California Gas Company and by the Southwest Gas Company (San Bernardino County, 2019).

San Bernardino County Telephone and Cable TV. There are six telephone, TV, and internet providers in San Bernardino County, including Spectrum, Earthlink, T-Mobile, Hughesnet, Frontier, and Viasat (CableTV, 2024).

3.20.2. Applicable Regulations, Policies, and Standards

3.20.2.1. Federal Regulations, Policies and Standards

Federal Solid Waste Disposal Act and Resource Conservation and Recovery Act

The Solid Waste Disposal Act of 1965 (as amended and revised by the Resource Conservation and Recovery Act [RCRA] of 1976) establishes requirements for the management of solid waste. The RCRA gives the EPA the authority to control hazardous waste, including the generation, transportation, treatment, storage, and disposal of hazardous waste. The RCRA also sets forth a framework for the management of nonhazardous solid wastes. The 1986 amendments to the RCRA enabled the EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. The RCRA's key provisions include:

- Identification and listing of hazardous waste and standards applicable to hazardous waste
- Requires reporting of hazardous waste; permitting for storage, transport, and disposal; and includes provisions for oil recycling and Federal hazardous waste facilities inventories
- Management for solid waste, including landfills
- Applicability of Federal, State, and local laws to Federal agencies
- Procurement (recycling) provisions
- Citizen suits, judicial review, and enforcement authority
- Management, replacement, and monitoring of underground storage tanks

3.20.2.2. State Regulations, Policies and Standards

California Government Code – Protection of Underground Infrastructure

The responsibilities of California utility operators working in the vicinity of utilities are detailed in the California Government Code (CGC), "Protection of Underground Infrastructure" (CGC Title 1, Division 5, Chapter 3.1 §§4216-4216.24). This law requires that an excavator must contact a regional notification center at least two days prior to excavation of any subsurface installation. Any utility provider seeking to begin a project that may damage underground infrastructure can call Underground Service Alert, the regional notification center. Underground Service Alert will notify the utilities that may have buried lines within 1,000 feet of the Project. Representatives of the utilities are required to mark the specific location of their facilities within the work area prior to the start of project activities in the area. The code also requires excavators to probe and expose underground facilities by hand prior to using power equipment.

California Integrated Waste Management Act of 1989

(Public Resources Code 40050 et seq. or Assembly Bill (AB) 939, codified in PRC 40000), administered by the California Integrated Waste Management Board (CIWMB), requires all local and county governments to adopt a Source Reduction and Recycling Element to identify means of reducing the amount of solid waste sent to landfills. This law set reduction targets at 25% by the year 1995 and 50% by the year 2000. To assist local jurisdictions in achieving these targets, the California Solid Waste Reuse and Recycling Access Act of 1991 requires all new developments to include adequate, accessible, and convenient areas for collecting and loading recyclable and green waste materials.

CalRecycle is under the umbrella of the California EPA and is responsible for the implementation of AB939.

California Solid Waste Reuse and Recycling Access Act of 1991

Signed into law in 1991, AB 1327 added Chapter 18 to Part 3 of Division 30 of the Public Resources Code. Chapter 18 required the CIWMB to develop a model ordinance for adoption of recyclable materials in development projects. Local agencies were then required to adopt the model, or an ordinance of their own, to govern adequate areas for collection and loading of recyclable materials in development projects by September 1, 1993. If a local agency had not adopted a model ordinance by that date, the CIWMB model would be adopted and enforced by the local agency.

On January 1, 2010, California's recycling and waste reduction efforts were streamlined into the State's Natural Resources Agency. In the Agency, CalRecycle merges the duties of the former California Integrated Waste Management Board with the Department of Conservation's Division of Recycling to manage the State's waste disposal and recycling efforts. The Construction and Demolition Waste Materials Diversion Requirements established in 2002 (SB 1374) require jurisdictions in their annual AB 939 report to include a summary of the progress made in diverting construction and demolition waste.

Assembly Bill 332

AB 332 was signed into effect in August 2021. AB332 adopts new Alternative Management Standards (AMS) for treated wood waste that are codified in Health and Safety Code Section 25230. Treated wood is wood that has gone through a treatment process with chemical preservatives to protect it against pests and environmental conditions. Treated wood is often used for power poles.

The AMS statues allow disposal of treated wood waste at specific non-hazardous waste landfills. All Treated Wood Waste (TWW) handlers and generators that generate more than 10,000 pounds in any calendar year shall obtain an identification Number and submit a Treated Wood Waste Handler Notification within 30 days of exceeding the 10,000 pound limit (CA DTSC, 2021).

3.20.2.3. Local Regulations, Policies and Standards

Pursuant to General Order 131-E, the Project is not subject to local land use authority because the CPUC has exclusive jurisdiction over the siting, design and construction of electric power line projects, distribution lines, substations, and electric facilities constructed by public utilities subject to CPUC jurisdiction. Local ordinance policies and requirements are summarized here only where these requirements are used as the basis for impact analysis.

Inyo County General Plan: Public Services and Utilities, and Water Resources Element

The Inyo County General Plan (Inyo County, 2001) identifies goals, policies, and implementation measures designed to encourage and allow appropriate development with the adequate provision of public services and utilities. Inyo County will work with utility companies to design and locate appropriate expansion of electric systems, while minimizing impact to agriculture and minimizing noise, electromagnetic, visual, and other impacts on existing and future residents. The Inyo County General Plan's Public Services and Utilities Element and Water Resources Element contains the following goals and policies:

- Goal PSU-6: To ensure the safe and efficient disposal or recycling of solid waste generated in Inyo County.
- Policy PSU-7.1 Provision of Services. The County shall encourage the provision of communications and telecommunications service and facilities to serve existing and future needs.
- Goal PSU-10: To provide efficient and cost-effective utilities that serves the existing and future needs of people in the unincorporated areas of the County.

- Policy PSU-10.3 Provision of Services. The County shall encourage the provision of adequate gas and electric service and facilities to serve existing and future needs.
- Goal WR-1. Provide an adequate and high-quality water supply to all users within the County.
- Policy WR-1.1 Water Provisions. The County shall review development proposals to ensure adequate water is available to accommodate projected growth.
- Policy WR-1.3 Water Reclamation. Encourage the use of reclaimed wastewater, where feasible, to augment groundwater supplies and to conserve potable water for domestic purposes.

Kern County General Plan: Land Use, Open Space, and Conservation Element

Kern County recognizes the importance of environmental and public health and has developed goals and policies to protect the public from health and safety hazards in the Kern County General Plan (Kern County, 2009). The Kern County General Plan's Land Use, Open Space, and Conservation Element contains the following goals for Public Facilities and Services.

5. Ensure that adequate supplies of quality (appropriate for intended use) water are available to residential, industrial, and agricultural users within Kern County.

6. Provide a healthful and sanitary means of collecting, treating, and disposing of sewage and refuse for the residents and industries of Kern County.

7. Facilitate the provision of reliable and cost-effective utility services to residents of Kern County.

10. Ensure landfill capacity for Kern County residents and industries.

San Bernardino Countywide Plan, Policy Plan: Infrastructure and Utilities Element

The San Bernardino Countywide Plan acts as the County's General Plan. The Circulation and Infrastructure Element of the San Bernardino Countywide Plan (2022) contains objectives and policies related to the provisions of utilities, including the following:

- Goal IU-1 Water Supply. Water supply and infrastructure are sufficient for the needs of residents and businesses and resilient to drought.
- 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-1.4 Greywater. We support the use of greywater systems for non-potable purposes.
- Goal IU-4 Solid Waste. Adequate regional landfill capacity that provides for the safe disposal of solid waste, and efficient waste diversion and collection for unincorporated areas.
- Policy IU-4.1 Landfill capacity. We maintain a minimum ongoing landfill capacity of 15 years to serve unincorporated waste disposal needs.
- 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-5.4 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-5.6 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.

City of Barstow General Plan: Resource Conservation and Open Space Element

The Resource Conservation and Open Space Element of the City of Barstow General Plan (2014) contains a number of goals, policies, and strategies related to utilities and service systems, including:

- Goal 1: Ensure protection of water quality and quantity for the community by working in cooperation with all water purveyors in the area to preserve, augment, capture, and purify all waters in the Mojave River system.
- Policy 1 A: Ensure a water supply system capable of meeting normal and emergency demand through cooperation between the City and water purveyors.
- Policy 1 C: Strive to ensure that adequate water remains available to the community in order to maintain continued growth.
- Policy 1 E: Maintain a storm drainage system adequate to protect the lives and property of Barstow residents.

3.20.3. Environmental Impacts of the Proposed Project

3.20.3.1. Impact Analysis Approach

This section considers the potential impact to utilities and service systems within the jurisdictions through which the Proposed Project would cross. Utilities and service systems may experience minor impacts because of the Projects need for water or construction waste disposal. Impacts may also occur due to proximity to other utilities and service systems. SCE did not propose any Applicant Proposed Measures (APMs) for impacts related to utilities and service systems, and no APMs relevant to other issue areas are addressed in this section.

Significance Criteria

CEQA Checklist Items Not Analyzed

The following criteria from Appendix G of the CEQA Guidelines related to the impacts to utilities and service systems do not apply to the I-C Project, so these issues are not further analyzed for the reasons explained.

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

The Proposed Project would not exceed wastewater treatment requirements of the Lahontan Regional Water Quality Control Board, nor would it require the construction of new wastewater treatment facilities or expansion of existing facilities. Water would be used during construction to control dust and for other purposes but would be used on site and would not result in wastewater flows being generated. Small volumes of wastewater would be generated by the construction crews, such as in the use of portable toilets that would be provided for workers during the construction phase. The wastewater generated by the portable toilets is likely to be small and would not exceed existing capacity at receiving wastewater plants. Operation of the Project would create no demand for wastewater treatment; this impact is not further analyzed.

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

Construction activity associated with the Proposed Project would not require the development of new large-scale impermeable surfaces that would increase the amount of stormwater discharged from the site, or that would require construction of new off-site stormwater drainage facilities or expansion of existing facilities. The Proposed Project would require installation of subtransmission structure foundations and substation improvements; these would be the only impermeable surfaces. Because no new large-scale impermeable surfaces are proposed, existing facilities would be able to accommodate the existing stormwater flows, as the volume and velocity of stormwater flow is expected to be similar to existing conditions. This impact is not further analyzed.

CEQA Checklist Items Analyzed

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

Operation of the I-C Project would require no ongoing water supply. The subtransmission facilities are existing, and no change in operational use would occur. Construction would require water for dust control; the availability of water for this purpose is addressed in **Impact US-1**.

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

g) Comply with federal, state, and local statutes and regulations related to solid waste?

Construction of the I-C Project would require demolition of all existing subtransmission structures in Segments 1 and 2, and additional structures in Segments 3N and 3S. Impacts associated with solid waste disposal are addressed in **Impact US-2**.

Because the construction and operation of overhead transmission lines have the potential to affect other existing utilities, this section considers the potential for disruption of existing pipelines and utility systems under **Impact US-3**.

3.20.3.2. Impacts and Mitigation Measures

This section presents a discussion of impacts and mitigation measures for the Proposed Project with regard to utilities and service systems. The I-C Project consists of construction to replace transmission system components along multiple 115 kV subtransmission lines and the use of staging yards, all of which could result in impacts on utilities and service systems. Because potential impacts to utilities would occur along, or are similar across, the entire I-C Project route, the impact analysis covers all segments of the Proposed Project.

The Cal City Options defined in Section 2.1.1 and illustrated in Figure 2-2 would have impacts no different from those defined for Impacts US-1 through US-3, because the extent and location of ground disturbance and service systems required for the Proposed Project would be the same as that required for any of the Cal City Options.

Impact US-1: Require new water supply entitlements or place demands on local water providers.

Construction

LESS THAN SIGNIFICANT. As described in Section 2.4.1.9 (Water Uses and Sources), SCE conservatively estimates that it would use up to 1,000 acre-feet of water per year during construction, with a total of up to 3,100 acre-feet. Water would be used for construction activities related to fugitive dust mitigation, vegetation restoration, and soil compaction/concrete placement for the Proposed Project.

SCE would obtain this water from existing surface water and groundwater-fed supplies, through existing entitlements and resources located near the Proposed Project. At this time, SCE has not identified specific water purveyors to provide for the construction water needs. Along the 262-mile right-of-way, water could be obtained from any of the local water districts (see Section 3.20.1.2). These local water districts use a combination of surface water and groundwater for water supply.

Segments 1 and 2 are within Inyo and Kern Counties. All of Segment 1 and the northern portion of Segment 2 in Kern County are located within the Inyo-Mono Integrated Regional Water Management (IRWM) Region. Within this region, water supply has not been calculated due to lack of data. The remainder of the Project is located within the region covered by the Mojave Water Agency (MWA). There are several groundwater basins that underlay the Proposed Project, described below.

Owens Valley Groundwater Basin. The majority of Segment 1 is located over the Owens Valley Groundwater Basin, covering approximately 1,037 square miles. The basin area is highly dependent on groundwater for water supplies. The Owens Valley Groundwater Sustainability Plan, prepared by the Owens Valley Groundwater Authority (OVGA) identifies that the Basin has not been identified with overdraft conditions and is characterized as a low-priority basin, indicating that as a whole, groundwater in the basin is managed sustainably with respect to SGMA. During construction, it is expected that SCE would purchase water from a local community services district and/or municipal or mutual water company providers. As a result of the current sustainable conditions of the Owens Valley Basin, SCE's construction water needs would not significantly affect the sustainable groundwater management of the Owens Valley Groundwater Basin.

Indian Wells Valley Groundwater Basin. The southern portion of Segment 1 and the northern portion of Segment 2 are located over the Indian Wells Valley Groundwater Basin (IWVGB), which underlies approximately 600 square miles of land in portions of Kern, Inyo, and San Bernardino counties. Groundwater pumpers in the region include Indian Wells Valley Water District, Inyokern Community Services District, Searles Domestic Water Company, and mutual water companies. IWVGB serves as the sole supply of potable water in this region, and as described in Section 3.12.2.2, the groundwater basin has been in overdraft conditions since at least the 1960s (IWVGA, 2020). The Indian Wells Valley Groundwater Authority (IWVGA) recognizes the need to balance groundwater management and thus has identified actions to be implemented to avoid and avoid and reduce continued overdraft conditions such that operation of the IWVGB will be within its future sustainable yield. The primary management action, described in greater detail in Section 3.12, Hydrology and Water Quality, implements pumping fees, or Augmentation Fees, to be assessed on pumped water, where the fees would provide funding for the development of supplemental water supplies and other projects and management actions to achieve sustainability (IWVGA, 2020). In the event that SCE would purchase water during construction in this region, the costs of water would include these Augmentation Fees, providing funding to support sustainable use of the groundwater basin. As a result, water use would not cause a substantial decrease in groundwater supplies, and would not require new water entitlements or place demands on local water providers.

Antelope Valley-East Kern Water Agency. AVEK manages approximately 2,400 square miles in several counties including eastern Kern County, which includes a short portion of Segment 2. AVEK's water supplies are comprised of groundwater production and imported SWP water, which AVEK will bank to meet demands during drought periods. Based on the AVEK UWMP (AVEK, 2021) under worst-case five-consecutive year drought conditions, AVEK estimates a water demand of 50,990 acre-feet with a supply estimated at 50,990 acre-feet in 2030, with no surplus. AVEK takes part in water exchanges and water transfers with other State Water contractors to help meet demands within the region during periods of drought (AVEK, 2021), allowing them to procure more water in the event of a drought. Should SCE purchase water from AVEK or one of its retailers during construction, no new water entitlements would be required, nor would high demands be placed on local water providers.

Mojave Water Agency. The MWA manages a service area of approximately 4,900 square miles of eastern San Bernardino County, which includes the southern portion of Segment 2 and all of Segments 3N and 3S.

The MWA forecasts water demands in its service area based on predicted increases in land uses and population growth. Based on the MWA Urban Water Management Plan (UWMP), under worst-case five-consecutive year drought conditions, MWA estimates a water demand of 135,300 acre-feet with a supply estimated at 141,492 acre-feet in 2030, resulting in a surplus of 6,192 acre-feet (MWA, 2020). This surplus represents available waters that are not committed to land, development and population projections, or other uses. The Proposed Project's conservative estimate of approximately 1,000 acre-feet of annual water consumption represents approximately 16.1[2] percent of the 2025 estimated MWA surplus water supply. Therefore, there is sufficient water supply in the region.

Water would be acquired by SCE from one or more local water districts located within the IRWM and MWA, as described above. In areas where the groundwater basin is adjudicated and in overdraft conditions, existing programs are available for SCE to purchase water for temporary construction and would not require new water entitlements.

Because there is sufficient water supply in the Project area, there is no need for new water supply entitlements, and no high demands would be placed on local water providers. Therefore, the impact would be less than significant.

Operation and Maintenance

NO IMPACT. During operation, the Proposed Project components would be unmanned and there would be no change in the use of water supply from the existing maintenance procedures. As with current practices, dust control may be required for certain maintenance actions. Because there would be no change from current practice, there would be no impact.

Impact US-2: Generate solid waste in excess of state or local regulations or in excess of the capacity of local infrastructure.

Construction

LESS THAN SIGNIFICANT. Construction activity associated with the Proposed Project would require the disposal of solid waste, including non-recyclable existing transmission structures and components that would be removed as well as packaging for new project components, spoiled materials, and excavated soil that is not re-used as backfill. Many of the existing transmission structures and components (including metallic structures and components) would be recycled. Depending on the nature of the materials, non-recyclable solid waste would be disposed of in a non-hazardous sanitary landfill or hazardous material disposal facility, as appropriate.

Material from existing infrastructure that would be removed as part of the Proposed Project such as conductor, steel, concrete, and other debris, would be temporarily stored in one or more material yards as the material awaits salvage, recycling, and/or disposal. SCE expects that all existing conductor and lattice steel structures would be salvaged or recycled, which would account for approximately 2.6 million pounds of conductor, and approximately 6.3 million pounds of lattice steel structures, which would not be sent to a landfill.

As stated in Section 2.4.1.11, approximately 4,456 tons of metal (consisting of steel from existing towers and metals from existing conductor) would be removed as part of the Proposed Project, as would approximately 114 tons of concrete from the foundations of existing towers. This is equivalent to 1,003.12 cubic yards of metal, and 56.30 cubic yards of concrete, for a total of 1,059.42 cubic yards of waste that would be produced by the Project.

[2] 141,492 acre-feet (estimated supply, 2030) – 135,300 acre-feet (estimated demand, 2030) = 6,192 acre-feet (surplus). Based on a conservatively estimated construction water use of 1,000 acre-feet per year, the Proposed Project's construction water consumption would represent 16.1 percent (or 1,000 acre-feet/6,192 acre-feet) of the MWA's annual surplus water production.

The landfills within approximately 2 miles of the Proposed Project, discussed in Section 3.20.1.2, have a combined remaining capacity of approximately 80.92 million cubic yards. (CalRecycle, 2024a, b, c, d, e)

The existing wood poles removed under the I-C Project would be disposed of in a Class I hazardous waste landfill, and/or disposed of in the lined portion of a Regional Water Quality Control Board (RWQCB)-certified landfill. SCE estimates that the Project would remove approximately 384 wood poles, each with an average weight of 800 lbs. This is equivalent to an estimated volume of approximately 118.9 cubic yards.

The nearest RWQCB-certified landfill is the Victorville Sanitary Class III Landfill, located approximately 20 miles south of Segment 3S of the Proposed Project. This landfill has a remaining capacity of 79.4 million cubic yards (CalRecycle, 2024f).

This available capacity for both standard waste (80.92 million cubic yards) and treated wood waste (79.4 million cubic yards) is more than sufficient to accommodate all of the solid waste (1,059.42 cubic yards) and treated wood waste (118.9 cubic yards) that would be generated during construction of the Proposed Project (CalRecycle, 2024a, b, c, d, e, f, g). Therefore, impacts related to construction would be less than significant.

Operations and Maintenance

NO IMPACT. During operation, operations and maintenance activities may require replacement of project components as is done with the existing subtransmission line. These activities would not generate significant quantities of solid waste. There would be no change from the existing maintenance activities, and no impact would occur.

Impact US-3: Disrupt existing pipelines and utility systems or cause a collocation accident.

Construction within the existing ROW would result in the collocation of new structures and power lines adjacent to and across existing utility lines. The Proposed Project ROW parallels and crosses several other existing transmission lines, distribution lines, natural gas pipelines, fiber optic cables, storm drains, and water pipelines. All construction activity would occur within or immediately adjacent to existing rights-of-way.

Construction

LESS THAN SIGNIFICANT. Construction of the Proposed Project could create service interruptions or preclude access to some of the utilities for short periods of time. As stated in Section 2.4.2.3, prior to drilling for foundations, SCE would contact Underground Service Alert (USA) to identify any existing underground utilities in the construction zone. Construction activities would begin with the survey of existing underground utilities along the proposed excavation locations, and SCE would notify all applicable utilities via USA to locate and mark existing utilities, verifying the location of existing utilities by conducing exploratory excavations as necessary.

As stated in Section 2.4.2.4, approximately 305 guard structures may need to be temporarily installed for the Proposed Project. Guard structures are temporary facilities that would typically be installed at transportation, flood control, and utility crossings for wire stringing/removal activities, and are designed to stop the conductor from dropping below a conventional stringing height during construction. These structures would minimize the likelihood of conductor stringing affecting other utilities.

As stated in Section 2.4.7, SCE would coordinate with LADWP and NV Energy to reduce the likelihood of accidental disruptions from a collocation accident and leverage system ties during outages in order to maintain uninterrupted service to retail customers. Because LADWP has both transmission and distribution systems in Inyo County, SCE's construction and operations efforts in Inyo County are coordinated carefully with LADWP's Bishop Administrative Office, as well as with LADWP's engineering team in its Los Angeles Headquarters.

Compliance with California Government Code §§4216 4216.9 would reduce the likelihood of accidental disruptions. However, accidental disruptions could still occur during construction, especially due to the large need to maintain operation of existing transmission lines in Segments 1 and 2 while the new facilities are being installed. This process makes construction activities more challenging.

The Proposed Project crosses natural gas pipelines, some of which likely require cathodic protection. Replacement subtransmission lines are not expected to cause any increase in cathodic protection requirements over existing baseline conditions.

SCE's proposed studies and utility coordination, along with the required contacts with the USA network would result in impacts to utilities being less than significant.

Operations and Maintenance

NO IMPACT. During operations and maintenance of the Proposed Project, there would be ongoing periodic needs to repair or replace project components. As is done currently, SCE would coordinate with other utilities prior to construction that may affect other utility facilities. There would be no impact compared with current operation.

3.20.4. Mitigation Monitoring, Compliance, and Reporting

No mitigation is required for impacts related to utilities and service systems.

3.20.5. References

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3.21. Wildfire

This section describes existing environmental conditions and anticipated impacts associated with the Proposed Project for Wildfire. Impacts evaluated in this section include directly or indirectly exacerbating wildfire risks, exposing people or structures to significant wildfire risks including post-fire conditions, and substantially impairing wildfire emergency response, wildfire suppression, or emergency evacuation. Emergency response plans and evacuation plans are addressed in Section 3.11, Hazards and Hazardous Materials.

The environmental setting for wildfire is presented in Section 3.21.1 and relevant regulations and standards are summarized in Section 3.21.2. Section 3.21.3 describes the impacts on the environment associated with implementation of the Proposed Project. These impact discussions introduce mitigation measures that would reduce or avoid significant adverse environmental impacts. Section 3.21.4 presents the mitigation monitoring, compliance, and reporting information, and Section 3.21.5 lists references cited in this section. Chapter 4 describes the environmental impacts of the alternatives to the Proposed Project. Cumulative impacts for all disciplines are considered in Chapter 5.

There were no comments received during the scoping period that addressed wildfire-related impacts.

3.21.1. Environmental Setting

A wildfire (or wildland fire) is an uncontrolled fire in an area of combustible vegetation occurring in a rural area; they are unplanned and unwanted fires. Wildfires can be classified broadly or specifically by the type of vegetation present, such as forest fires, brush fires, and grass fires. Wildfires can be ignited naturally (i.e., lightning) or by human activities and manmade features. Large, severe, wildfires are major threats to people, property, and ecosystems. The likelihood, intensity, and susceptibility of wildfires vary significantly by location, depending on fuel density and topography as well as daily and seasonal conditions (i.e., heat, dryness, and wind). Certain land uses and development within or near wildland areas have the potential to cause or exacerbate wildfires or hazardous post-wildfire conditions (i.e., flooding or landslides), and/or impede fire management, emergency response, or emergency evacuation.

The terminology used in the analysis of wildfire conditions and impacts is provided in Table 3.21-1.

Table 3.21-1. Wildfire Terminology

Term	Definition
Emergency Evacuation	An organized, phased, and supervised withdrawal, dispersal, or removal of civilians from dangerous or potentially dangerous areas, and their reception and care in safe areas.
Emergency Response Provider	Any federal, state, or local emergency public safety, law enforcement, emergency responder, emergency medical (including hospital emergency facilities), and related personnel, agencies, and authorities. It is any organization responding to an emergency, or providing mutual aid support to such an organization, whether in the field, at the scene of an incident, or operations center.
Fire Cause	Agency or circumstance which started a fire or set the stage for its occurrence, source of a fire's ignition. For statistical purposes fires are grouped into broad cause classes. The nine general causes used in the U.S. are lightning, campfire, smoking, debris burning, incendiary, machine use (equipment), railroad, children, and miscellaneous.
Fire Hazard	A fuel complex, defined by volume, type condition, arrangement, and location, which determines the degree of ease of ignition and of resistance to control.
Fire Potential	The likelihood of a wildland fire event measured in terms of anticipated occurrence of fire(s) and management's capability to respond. Fire potential is influenced by a sum of factors that includes fuel conditions (fuel dryness and/or other inputs), ignition triggers, significant weather triggers, and resource capability.

Term	Definition
Fire Prevention	Activities such as public education, community outreach, law enforcement, engineering, and reduction of fuel hazards that are intended to reduce the incidence of unwanted human-caused wildfires and the risks they pose to life, property or resources.
Fire Risk	The chance of fire starting, as determined by the presence and activity of causative agents. A chance of suffering harm or loss.
Fire Suppression	An appropriate management response to wildfire or prescribed fire that results in curtailment of fire spread and eliminates all identified threats from the particular fire.
Fire Threat	A measure of fuel conditions and fire potential in the ecosystem, representing the relative likelihood of damage or difficultly controlling a wildfire occurring for a given area.
Hazard Assessment	Assess hazards to determine risks. Assess the impact of each hazard in terms of potential loss, cost, or strategic degradation based on probability and severity.
Ignition Factor	The conditions, subsequent actions, and sequence of events that bring a competent ignition source into contact with the materials first ignited. Also referred to as the cause of the fire.
Ignition Source	Any process or event capable of causing a fire.
Ignition Trigger	A causative agent for wildland fire. For example, human or lightning.

Sources: (NWCG, 2019)

Information on wildfire was obtained through a review of literature, maps, GIS data, and online sources published by the California Department of Forestry and Fire Protection (CAL FIRE), United States Forest Service (USFS), National Forest Service, Bureau of Land Management (BLM), and CPUC.

3.21.1.1. Regional Setting

Existing Environment

Wildfire is influenced by many factors, including the presence and condition of fuels (vegetation), weather conditions (temperature, humidity, and wind), and topography. A fuel's composition, including moisture level, chemical makeup, and density, determines its degree of flammability. The moisture content and distribution of these fuels define how quickly a fire can spread and how intense or hot a fire may become. Some plants, shrubs, and trees contain oils or resins that promote combustion, causing them to burn more easily, quickly, or intensely than those without such oils. Dense fuels that exist close together also cause fuel to burn more freely. Weather conditions such as wind, temperature, and humidity also contribute to fire behavior. Wind is one of the most important factors because it can bring a fresh supply of oxygen to the fire and push the fire toward a new fuel source. Temperature of fuels is determined by the ambient temperature because fuels attain their heat by absorbing surrounding solar radiation. In general, fuels will ignite more readily at high temperatures than at low temperatures. Humidity, which is the amount of water vapor in the air, affects the moisture level of a fuel. At low humidity levels, fuels become dry and, therefore, catch fire more easily and burn more quickly than when humidity levels are high. Lastly, topographical features such as elevation, slope (the steepness of the land), aspect (the direction a slope faces), or other land features, can help or hinder the spread of fire. For example, a rocky slope can act as a natural fire break due to a lack of fuel and wide gap of open space. Drainages can also act as fire breaks if fuels are moist or there is little vegetation. Elevation and aspect can determine how hot and dry a given area will be. For example, higher elevations will be drier but colder than low ones, and a north-facing slope will be slower to heat up or dry out. Slope can determine how quickly a fire will move up or down hills. For example, if a fire ignites at the bottom of a steep slope, it will spread much more quickly upwards because it can pre-heat the upcoming fuels with rising hot air, and upward drafts are more likely to create spot fires (National Park Service, 2017).

Most of Segment 1 is located in Owens Valley, in the southwestern portion of the Great Basin Desert. Segments 2, 3N, and 3S lie within the Mojave Desert. The majority of the vegetation along the project

alignment consists of shrublands. Tree-dominated vegetation occurs most frequently at higher elevations, as well as along streams and portions of the Owens River at the north end of Segment 1 in the Owens Valley. Herbaceous vegetation is generally scarce within the project area.

The project area is characterized by relatively flat topography; however, localized areas of relatively steep slopes and increased slope hazards occur where the Proposed Project runs within or along the edges of hills and mountains, such as the Coso, El Paso, Cronise, Soda, and Clark-Ivanpah mountains. As mentioned above, areas with steeper slope allow fire to spread quickly upwards and burn up hillsides. Steeper slopes occur in Segment 1 near the existing Haiwee and Coso Substations, and where Segment 2 intersects the El Paso Mountains.

Records of Past Wildfires

The frequency, size, and severity of wildfires that have occurred in an area can be used to qualitatively predict the likelihood of similar events happening in the future, without consideration to other factors that affect fire risk, such as changing climate and weather trends, presence or absence of fuels, or other long-term change in wildfire risk levels.

According to wildfire data published by CAL FIRE, 16 wildfires have been recorded within 1 mile of the project alignment. Past wildfires that have occurred within 1 mile of the Proposed Project are described in Table 3.21-2. The majority and the largest wildfires have occurred in the vicinity of Segment 1 where dense vegetation and forested areas are present on mountain slopes. Finally, one relatively small fire (10 acres) occurred within 1 mile of Segment 3N in 2017.

Table 3.21-2. Wildfires within 1 mile of the Proposed Project Alignment

Year	Fire Name	Cause	Acres	Project Segment
1960	Crater Mountain	Unknown / Unidentified	1,580	1
1995	Aberdeen	Lightning	31	1
1998	Manzanar Fire	Unknown / Unidentified	340	1
2007	Sage	Lightning	6,463	1
2009	Fort	Escaped Prescribed Burn	943	1
2011	Center	Unknown / Unidentified	441	1
2011	John	Unknown / Unidentified	5,800	1
2012	Fish	Unknown / Unidentified	1,135	1
2013	River	Unknown / Unidentified	407	1
2014	Keough	Unknown / Unidentified	18	1
2017	Irwin	Unknown / Unidentified	10	3N
2018	Moffat	Campfire	1,254	1
2021	Calvert	Escaped Prescribed Burn	270	1
2021	Aberdeen	Unknown / Unidentified	45.5	1
2021	Crystal	Campfire	2	1
2024	Cartago	Powerline	101	1

Source: CAL FIRE, 2025a

Fire Hazard Severity Zones

Within California, fire hazard severity zones (FHSZs) are designated by CAL FIRE. FHSZ designation is based on that factors that influence fire likelihood and fire behavior such as fire history, existing and potential fuel (natural vegetation), predicted flame length, blowing embers, terrain, and typical fire weather for the area. FHSZ designations include moderate, high, very high. FHSZs are administered by the federal, state,

or local government that is financially responsible for preventing and suppressing wildfires in a given area, and are categorized into the following groups:

- State Responsibility Area (SRA): The state is financially responsible for wildfire suppression.
- Local Responsibility Area (LRA): Cities or counties are financially responsible for wildfire suppression.
- Federal Responsibility Area (FRA): The federal government is financially responsible for wildfire suppression.
- Unspecified Responsibility Area (URA): Fire hazard severity zone not within an SRA, LRA, or FRA.

The existing subtransmission lines and substations associated with the Proposed Project are located within moderate, high, and un-zoned FHSZs in all responsibility areas. The majority of the project alignment is located within moderate FHSZs, with the remainder in High FHSZs or un-zoned areas that include non-wildland/non-urban land. No portion of the Proposed Project is within a Very High FHSZ. FHSZs in the project area are shown in Figure 3.21-1a through 3.21-1c (CAL FIRE Fire Hazard Severity Zones). High FHSZs are in proximity to the Proposed Project only along Segment 1, so maps are not presented for other segments.

Table 3.21-3 lists the number of miles the project alignment is located within each FHSZ category.

Table 3.21-3. Miles of the Proposed Project Alignment within Fire Hazard Severity Zones

		Distance (linear project miles within each zone)				
Segment	**FHSZ Category**	**SRA**	**LRA**	**FRA**	**URA**	**Total**
1	Very High	--	--	--	--	--
	High	24.5	3.2	17.2	0.5	45.4
	Moderate	46.8	10.5	22.9	--	80.2
	Unzoned	--	--	0.6	--	0.6
2	Very High	--	--	--	--	--
	High	--	--	--	--	--
	Moderate	--	20.9	24.2	1.9	47.0
	Unzoned	--	0.4	--	--	0.4
3N	Very High	--	--	--	--	--
	High	--	--	--	--	--
	Moderate	--	21.7	12	9.7	43.4
	Unzoned	--	0.7	--	0.1	0.8
3S	Very High	--	--	--	--	--
	High	--	--	--	--	--
	Moderate	--	18.9	7	14.4	40.3
	Unzoned	--	1.2	--	0.1	1.3

Sources: CAL FIRE, et al., 2019; CAL FIRE, 2024 and 2025

Fire Threat

Fire threat provides a measure of fuel conditions and fire potential in the ecosystem, representing the relative likelihood of damage or difficulty controlling a wildfire occurring for a given area. Fire threat is not a risk assessment by itself but can be used to assess the potential for impacts on various assets and values susceptible to fire. Impacts from wildfires are more likely to occur and/or be of increased severity for the higher threat classes.

CAL FIRE's Fire and Resource Assessment Program produces wildland fire threat maps based on the combination of potential fire behavior (including fuel availability) and expected fire frequency. Fire threat classifications include not mapped, low, moderate, high, very high, and extreme. The majority of Segment 1 is in areas classified as having a moderate fire threat. The vast majority of Segment 2, and the entirety of Segments 3N and 3S, are in areas designated as having a moderate fire threat or not mapped. Fire threat mapping in the project area is shown in Figure 3.21-3a through 3.21-3e (CAL FIRE Fire Threat).

High Fire Threat Districts

In 2018, the CPUC adopted High Fire Threat District (HFTD) maps identifying areas of high hazard, elevated risk and extreme risk for destructive utility-associated wildfires in the State (CPUC, 2025). The HFTDs identified in the maps encompass areas where stricter fire safety regulations apply to utility infrastructure and operations. Regulated electrical utility corporations like SCE are required to implement enhanced wildfire prevention measures where their facilities are located within HFTDs, as specified in their Wildfire Mitigation Plans (WMPs) that are prepared and implemented in accordance with SB 901 and Public Utilities Code Section 8386. The HFTD maps designate three district types, which include the following:

- Tier 3: Extreme fire risk (including likelihood and potential impacts on people and property) from utility-associated wildfires.
- Tier 2: Elevated fire risk (including likelihood and potential impacts on people and property) from utility-associated wildfires.
- Zone 1: Areas identified as Tier 1 High Hazard Zones on the joint map developed by the USDA Forest Service and CAL FIRE.

The CPUC HFTDs resemble the CAL FIRE FHSZs and fire threat very high and extreme ratings, but the mapping does not directly correspond. Portions of Segment 1 of the Proposed Project are located within or adjacent to Tier 2 HFTDs. No other HFTDs are present in the project vicinity. The CPUC HFTDs in the project area are shown in Figure 3.21-2 (CPUC High Fire Threat Districts) for Segment 1 only.

Wildland Urban Interface

Uncontrolled wildfire poses the greatest risk to human life and property in the wildland urban interface (WUI). The WUI is an area where houses and other structures are built close to, or intermingled with, undeveloped wildlands. The WUI poses significant concern in the event of wildfire as it combines the characteristics of wildlands, where larger fires generally occur, and developed areas, where lives, homes, and property are vulnerable. WUI maps are published through funding from the government and made available through the USFS (Radeloff, et al., 2023).

Figures 3.21-4a through 3.21-4c (Wildland-Urban Interface Areas) show the areas of the project route that are within the WUI. The WUI areas near the Proposed Project occur primarily:

- In the southernmost portion Segment 1 (see Figure 3.21-4a, Wildland-Urban Interface Areas, Segment 1 South and Segment 2 North)
- In the northernmost portion of Segment 2, near the Inyokern Substation (see Figure 3.21-4a, Wildland-Urban Interface Areas, Segment 1 South and Segment 2 North)
- In the Randsburg area of Segment 2 (see Figure 3.21-4b, Wildland Urban Interface Areas, Segment 2 Central)
- In the eastern portion of Segments 3N and 3S (see Figure 3.21-4c, Wildland-Urban Interface Areas, Segments 3N and 3S).

Emergency Response and Evacuation

The California Governor's Office of Emergency Services (Cal OES) is responsible for overseeing and coordinating emergency preparedness, response, recovery and homeland security activities within the State of California. Cal OES established a Standard Emergency Management System (SEMS) to harmonize incident command, mutual aid agreements, roles, responsibilities, and training. Kern County, Inyo County, San Bernardino County, and the City of Barstow each have developed and implemented emergency response plans, described in Section 3.21.2.3 below. No designated evacuation routes are crossed by the project alignment or identified in the immediate area (SCE, 2020).

3.21.1.2. Environmental Setting by Segment

Segment 1: Bishop to Inyokern

Segment 1 spans approximately 126 miles from the existing Control Substation in the north to the existing Inyokern Substation in the south. Segment 1 passes through lands designated as High and Moderate FHSZ in either a FRA, SRA, or LRA. Portions of Segment 1 in the vicinity of Bishop and Lone Pine are located in areas designated by CAL FIRE as having a very high fire threat; however, the majority of Segment 1 is located in areas designated as having a moderate fire threat. The northern region of Segment 1 is also located within or adjacent to Tier 2 HFTDs, which indicates an elevated fire risk. See Figure 3.21-2 (CPUC High Fire Threat District).

Figure 3.21-4a (Wildland-Urban Interface Area, Segment 1 South and Segment 2 North) shows the areas of WUI in Segment 1.

Shrublands, dominated by one of several species of saltbush, occur along Segment 1 from the Control Substation south to Little Lake. Desert scrub vegetation is common along Segment 1 south of the Haiwee Substation. Segment 1 of the Proposed Project has a high to moderate overall fire risk due to vegetation and slope conditions, as indicated by the CAL FIRE and CPUC fire risk designations. Segment 1 is located near several rural residential areas including the City of Bishop and the census-designated places of West Bishop, Wilkerson, Big Pine, Independence, Lone Pine, Cartago, Olancha, Pearsonville, and Inyokern.

Segment 2: Inyokern to Kramer Junction

Segment 2 spans approximately 48 miles from the existing Inyokern Substation in the north to the existing Kramer Substation in the south and includes the existing Randsburg Substation between the two. The entirety of Segment 2 that is within an FRA is designated as moderate FHSZ. The remaining portion of Segment 2 are designated as non-fuel. No HFTDs are present near Segment 2. Desert scrub vegetation dominates the landscape along Segment 2. Segment 2 is located near the census-designated places of Inyokern and Randsburg as well as Kramer Junction, an unincorporated community in San Bernardino County.

Figure 3.21-4a (Wildland-Urban Interface Areas, Segment 1 South and Segment 2 North) and Figure 3.21-4b (Wildland-Urban Interface Areas, Segment 2 Central) show the areas of WUI in Segment 2.

Segment 3N: Kramer Junction to Daggett

Segment 3N spans approximately 44 miles from the existing Kramer Substation in the west to the existing Coolwater Substation in the east. Portions of Segment 3N within a FRA, LRA, or URA are designated as moderate FHSZ. The remaining portions of Segment 3N are identified as non-fuel. No HFTDs are present near Segment 3N. Desert scrub vegetation dominates the landscape along Segment 3N. Segment 3N traverses the rural residential areas of Kramer Junction and Daggett in San Bernardino County.

Figure 3.21-4c (Wildland-Urban Interface Areas, Segments 3N and 3S) shows the areas of WUI in Segment 3N.

Segment 3S: Kramer Junction to Barstow to Daggett

Segment 3S spans approximately 44 miles from the existing Kramer Substation in the west to the existing Coolwater Substation in the east and includes the existing Tortilla Substation between the two. Portions of Segment 3S within a FRA, LRA, or URA are designated as moderate FHSZ. The remaining portions of Segment 3S are designated ass non-fuel. No HFTDs are present near Segment 3S. Desert scrub vegetation dominates the landscape along Segment 3S. Segment 3S traverses the unincorporated communities of Kramer Junction, Daggett, and Hinkley in San Bernardino County, the census-designated place of Lenwood, and the City of Barstow.

Figure 3.21-4c (Wildland-Urban Interface Areas, Segments 3N and 3S) shows the areas of WUI in Segment 3S.

3.21.2. Applicable Regulations, Policies, and Standards

3.21.2.1. Federal Regulations, Policies and Standards

National Electric Safety Code and American National Standards Institute Guidelines

A variety of line and tower clearance standards are used throughout the electric transmission industry. Nationally, most transmission line owners follow the National Electric Safety Code (NESC) rules or American National Standards Institute (ANSI) guidelines, or both, when managing vegetation around transmission system equipment. The NESC deals with electric safety rules, including transmission wire clearance standards, whereas the applicable ANSI code deals with the practice of pruning and removal of vegetation.

3.21.2.2. State Regulations, Policies and Standards

California State Hazard Mitigation Plan

The Cal OES 2023 California State Hazard Mitigation Plan (SHMP) represents the state's primary hazard mitigation guidance document. The 2023 SHMP continues to build upon the state's commitment to reduce or eliminate potential risks and impacts of natural and human-caused disasters to help communities with their mitigation and disaster resiliency efforts. The 2023 plan includes: an updated statewide risk assessment, disaster history, and statistics; recent mitigation progress, success stories, and best practices; updated state hazard mitigation goals, objectives, and strategies; and updated climate mitigation progress and adaptation strategies. The Federal Emergency Management Agency (FEMA) approved California's 2023 SHMP on August 30, 2023.

Chapter 9 – Wildfire of the SHMP identifies and profiles wildfire hazards throughout the state and includes a comprehensive state fire hazards risk assessment. Chapter 9 emphasizes that preparation and implementation of Local Hazard Mitigation Plans with linkage to a jurisdiction's general plan play an important role in the fire mitigation process (Cal OES, 2023).

California Department of Forestry and Fire Protection

Pursuant to Public Resources Code (PRC) Section 4201 to 4204 and Government Code Section 51175 to 51189, CAL FIRE has created FHSZ maps for the state that identify areas that are within state or local responsibility for preventing or suppressing fires. Within SRAs, the Director of CAL FIRE has designated areas as moderate, high, and very high FHSZ (PRC Section 4202). Outside of SRAs and within LRAs, the Director of CAL FIRE was charged with recommending the locations of very high zones FHSZ (Government Code Section 51178). These recommendations were to be reviewed and adopted in ordinances by local agencies (Government Code Section 51179), although not all local agencies have complied. All designations are mapped on the CAL FIRE website.

California Public Utilities Commission General Order 95

CPUC's GO 95 is the key standard governing the design, construction, operations, and maintenance of overhead electric lines in the State. GO 95 Rule 35 governs tree trimming requirements, including minimum vegetation clearances around power lines in extreme and very high fire threat zones in Southern California. The rule requires radial clearances be 120 inches from vegetation for bare line conductors in Extreme and Very High Fire Threat Zones in Southern California. GO 95 Rule 31.2 requires that lines be inspected frequently and thoroughly to ensure that they are in good condition, and that lines temporarily out of service be inspected and maintained in such condition so as not to create a hazard.

California Public Utilities Commission General Order 166

The purpose of the standards contained in GO 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, among others, that each jurisdictional 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 Resources Code Sections 4292 and 4293

PRC 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 PRC 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. PRC 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.

California Health and Safety Code Section 13009

Health and Safety Code Section 13009 permits CAL FIRE to file civil actions to recover fire suppression costs from a party who causes a fire (1) negligently, or (2) in violation of a law or an order to correct a fire hazard. CAL FIRE established a Civil Cost Recovery Program to satisfy the statute's intent to assign financial responsibility to culpable parties and to prevent fires through deterrence.

Power Line Fire Prevention Field Guide 2008 Edition

CAL FIRE, the state's three investor-owned utilities (Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas and Electric), and other California electric utilities have mutually developed a comprehensive field guide for their personnel. Its purpose is "to provide information and guidance to the personnel of the fire service agencies and electrical operators for minimum uniform application within the areas of their respective jurisdiction and franchise responsibilities." In addition to safety of the public, the guide details fire hazard reduction maintenance procedures for the safety of conductors and certain hardware.

Senate Bill 901 and Public Utilities Code Section 8386

SB 901, enacted in 2018, established a comprehensive legislative framework to enhance wildfire prevention, mitigation, and utility accountability in California. Among its key provisions, SB 901 authorized the CPUC to require regulated utility companies like SCE to prepare and implement WMPs, focusing on infrastructure hardening, vegetation management, and system operations to reduce wildfire risks. Public Utilities Code Section 8386 also mandates that California electrical corporations develop and submit annual WMPs. These WMPs are filed with the Office of Energy Infrastructure Safety (Energy Safety); minor

updates to the base plans occur annually, and more comprehensive updates to the base plans are required every 3 years (Energy Safety 2025).

SCE's current 2026-2028 WMP defines goals to reduce the risk of wildfires associated with utility equipment and to lessen the scope, scale, frequency, and impacts of Public Safety Power Shutoff (PSPS) events (SCE, 2025). To meet these goals, the WMP includes strategies, programs and activities that are in place, being implemented or are under development by SCE to proactively address and mitigate the threat of electrical infrastructure-associated ignitions that could lead to wildfires, including grid hardening in high risk areas (e.g., utilizing covered conductor, targeted undergrounding, and deployment of Rapid Earth Fault Current Limiters, and other protection schemes); risk-informed inspection and maintenance programs; ongoing utility vegetation management; expanded situational awareness through a dense network of weather stations, high-definition cameras, and enhanced forecasting tools; and emergency preparedness, agency coordination, and customer support programs (e.g., PSPS communications, backup power programs, and support for aerial suppression resources). The WMP is implemented using SCE's Integrated Wildfire Mitigation Strategy, which prioritizes specific locations based on modeled wildfire consequence and continually updates risk modeling to account for evolving fuel, development, and climate conditions, while retaining PSPS as a last-resort tool when fire weather conditions exceed design thresholds (SCE, 2025).

Fire Prevention Standards for Electric Utilities

The Fire Prevention Standards for Electric Utilities (CCR Title 14, Sections 1250-1258) provide definitions, maps, specifications, and clearance standards for applying the requirements of PRC Sections 4292-4296 to projects in SRAs under the jurisdiction of CAL FIRE.

California Fire Code

The California Fire Code 2016 (CCR Title 24, Part 9) is based on the International Fire Code from the International Code Council and contains consensus standards related to establishing good practices to safeguard the public health, safety, and general welfare from the hazards of fire, explosion, or dangerous conditions in new or existing buildings, structures, and premises.

Government Code Section 51175-89

Government Code Section 51175-89 directs CAL FIRE to identify areas of very high fire hazard severity within LRAs. Mapping of the areas, referred to as VHFHSZ, is based on data and models of potential fuels over a 30-to-50-year time horizon and their associated expected fire behavior, and expected burn probabilities to quantify the likelihood and nature of vegetation fire exposure to buildings.

LRA VHFHSZ maps were initially developed in 1996 and are now being updated based on improved science, mapping techniques, and data. Local governments had 120 days to designate, by ordinance, very high fire hazard severity zones within their jurisdiction after receiving the CAL FIRE recommendations. Local governments were able to add additional VHFHSZs. There was no requirement for local government to report their final action to CAL FIRE when the recommended zones are adopted. Consequently, users are directed to the appropriate local entity (county, city, fire department, or Fire Protection District) to determine the status of the local fire hazard severity zone ordinance.

Effective in 2008, the California Building Commission adopted California Building Code Chapter 7A requiring new buildings in VHFHSZs to use ignition resistant construction methods and materials. These new codes include provisions to improve the ignition resistance of buildings. The updated very high fire hazard severity zones will be used by building officials for new building permits in LRAs. The updated zones will also be used to identify property whose owners must comply with natural hazards disclosure requirements at time of property sale and 100-foot defensible space clearance.

Best Practices for Analyzing and Mitigating Wildfire Impacts of Development Project Under CEQA

The State of California office of the Attorney General issued guidance in 2022 for evaluation of wildfire impacts under CEQA. The guidance recommends considering project density for development projects and the difficulty of accessing the Proposed Project for disconnected developments. Project location in the landscape also needs to be considered and "For example, if a project site is located in a wind corridor, above-ground power lines may become a source of ignition." Consideration should also be given to water supply and infrastructure and analyzing the adequacy of water supplies to support firefighting within the project site. For projects that present significant increased fire risk mitigation applicable to electrical utilities could include underground power lines and fire hardening of infrastructure. However, mitigation should be tailored to the specifics of the Proposed Project and the landscape (Office of Attorney General, 2022).

3.21.2.3. Local Regulations, Policies and Standards

GO 131-E. *Rules Relating to the Planning and Construction of Electric Generation, Transmission/ Power/ Distribution Line Facilities, and Substations Located in California* (adopted on January 30, 2025), defines the CPUC's jurisdiction over the siting and design of electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities in the State of California. Although such projects are exempt from local land use and zoning regulations and permitting, GO 131-E, Section XI.B requires that "… the public utilities shall consult with local agencies regarding land use matters." GO 131-E also defines that the CPUC is the Lead Agency under CEQA with respect to such Proposed Project elements within the State of California. Southern California Edison Company (SCE) is required to comply with GO 131-E and is seeking a Permit to Construct from the CPUC for the Proposed Project.

Inyo County Emergency Operations Plan

The Inyo County 2016 Emergency Operations Plan (EOP) establishes the necessary emergency management organization and assigns functions and tasks consistent with California's Standardized Emergency Management System (SEMS) and the National Incident Management System (NIMS). The EOP plan provides for the integration and coordination of planning efforts of the County/Operational Area with those of its city, special districts and the state region. The Inyo County EOP includes specific criteria for wildfire protection, response, and firefighting coordination (Inyo County, 2016).

Inyo County and City of Bishop Multi-Jurisdictional Hazard Mitigation Plan

The Inyo County and City of Bishop Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) establishes a strategy for Inyo County to reduce hazard impacts. The plan focuses on hazard mitigation in reducing the impacts of disasters by identifying effective and feasible actions to reduce the risks posed by potential hazards. The plan develops mitigation actions to strengthen community resilience, which helps ensure coordinated and consistent hazard mitigation activities across Inyo County. Inyo County and the City of Bishop have developed this plan to be consistent with current standards and regulations, ensuring that the understanding of hazards facing the communities reflects best available science and current conditions. The current update to the plan was approved by FEMA in December 2017 (Inyo County and City of Bishop, 2017).

Kern County Emergency Operations Plan

Kern County Fire Department maintains and implements the Kern County EOP which establishes an emergency management organization and assigns functions and tasks consistent with California's Standardized Emergency Management System and the National Incident Management System. The EOP is comprised of four sections: (1) Basic Plan; (2) Emergency Operations Center Procedures; (3) Functional Annexes; and (4) Contingency Plans. The Fire, Rescue and Hazardous Materials Branch in the Emergency Operations

Center Operations Section coordinates the activities of all personnel engaged in fire, rescue and hazardous materials response (Kern County Fire Department, 2022).

Kern County Fire Department Unit Strategic Fire Plan

The Kern County Fire Department Unit Strategic Fire Plan documents the assessment of the wildland fire situation throughout the SRA within the county. It includes stakeholder contributions and priorities and identifies strategic targets for pre-fire solutions as defined by the people who live and work with the local fire problem. The goal of the plan is to reduce costs and losses from wildfire by protecting assets at risk through focused pre-fire management prescriptions and increasing initial attack success (Kern County Fire Department, 2018).

Kern Multi-Jurisdictional Hazard Mitigation Plan

In 2020, Kern County and several participating jurisdictions prepared a Comprehensive Update to the Multi Jurisdiction Hazard Mitigation Plan, the plan was approved by FEMA in 2021. The purpose of this plan is to guide hazard mitigation planning to better protect the people and property of Kern County from the effects of hazard events. 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, 2020).

San Bernardino County Emergency Operations Plan

The San Bernardino County EOP addresses the County's response to emergencies associated with natural disasters or human-caused emergencies. Th EOP describes the methods for conducting emergency operations, the process for rendering mutual aid, the emergency services of governmental agencies, how resources are mobilized, how the public will be informed, and the process to ensure continuity of government during an emergency or disaster. The EOP includes a description of wildfire hazard in San Bernardino County and strategies for prevention and mitigation of wildfire (San Bernardino County, 2019).

San Bernardino County Multi-Jurisdictional Hazard Mitigation Plan

The current San Bernardino County MJHMP was FEMA approved in October 2017. The purpose of the San Bernardino MJHMP is to demonstrate the plan for reducing and/or eliminating risk in the unincorporated areas of San Bernardino County and within areas overseen or managed by the Flood Control District, Fire District and Special Districts Department. The MJHMP process encourages communities within the unincorporated county to develop goals and projects that will reduce risk and build a more disaster resilient community by analyzing potential hazards (San Bernardino County, 2022).

City of Barstow Emergency Operations Plan

The City of Barstow maintains and implements an EOP that provides guidance for the City of Barstow's response to extraordinary emergency situations associated with natural, human-made and technological disasters. The EOP contains Annexes describing plans for various emergency events, including wildfires (City of Barstow, 2015).

3.21.3. Environmental Impacts of the Proposed Project

3.21.3.1. Impact Analysis Approach

This impact analysis considers whether implementation of the Proposed Project would result in significant wildfire impacts. In assessing impacts during construction, consideration is given to existing conditions, including vegetation and existing transmission lines and equipment, and how those may be altered as a result of implementing the Proposed Project. Consideration also is given to the fire-safety related procedures and practices that would apply during construction.

Risk of wildfire can occur during both construction and operation of a transmission line and its associated facilities. The degree of risk depends on local conditions, such as weather, the type and condition of vegetation, and safety procedures in place. Construction involves numerous personnel, a wide range of work activities, and use of a variety of types of equipment along the ROW, at substations, and at construction yards. During construction, the center concerns on worksite preparation to reduce the availability of fuel and the implementation of appropriate procedures to eliminate or manage potential ignition sources.

Operations and maintenance involve considerably fewer personnel, limited activities, and much less equipment on the ROW and at substations that during construction. During ongoing operations and maintenance, concerns center on ensuring fuel (vegetation), ground surfaces, and equipment are maintained according to applicable standards and that fire safety requirements and procedures are implemented.

SCE implements standard fire prevention protocols during construction activities, as outlined in the example Transmission Line Project Fire Plan provided by SCE (SCE, 2025). SCE's standard fire protocols are discussed in the following sections. In assessing impacts during operations and maintenance, consideration is given to ongoing vegetation management and equipment maintenance and safety practices, procedures, and training. Table 3.21-4 summarizes the Applicant Proposed Measures (APMs) relevant to wildfire.

Pursuant to APM HAZ-3, [1] SCE would prepare and implement a Fire Management Plan. Pursuant to APM TRA-1, SCE would follow standard traffic safety practices, which would provide safe access of police, fire, and other rescue vehicles during a wildfire. Implementation of these APMs is considered part of the Proposed Project for purposes of the evaluation of environmental impacts.

Table 3.21-4. Applicant Proposed Measures – Wildfire

APM	Description
Wildfire	
HAZ-3	Prepare and Implement a Fire Management Plan. A Fire Prevention and Emergency Response Plan would be developed to ensure the health and safety of construction workers, SCE personnel, and the public during Project construction. The Plan shall cover: ■ The purpose and applicability of the plan ■ Responsibilities and duties ■ Project areas where the plan applies ■ Procedures for Red Flag warning days ■ Procedures for fire reporting, response, prevention, and evacuation routes ■ Coordination procedures with federal and local fire officials ■ Crew training, including fire safety practices and restrictions ■ Fire suppression and communication equipment required to be on hand during construction ■ Method for verification that Plan protocols and requirements are being followed Post-construction fire prevention and response measures. The Project-specific Fire Prevention and Emergency Response Plan for construction of the project shall be prepared by SCE and submitted to CPUC, BLM, CAL FIRE, Inyo, Kern and San Bernardino Counties, and local municipal fire agencies for review at least 30 days prior to initiation of construction. SCE shall address all comments received from reviewing agencies and provide the final Fire Prevention and Emergency Response Plan to reviewing agencies for approval prior to initiating construction activities.
TRA-1	SCE shall 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 is a member of the California Inter-Utility Coordinating Committee, which published the Manual on Uniform Traffic Control Devices, as amended for the state of California (CA MUTCD; CALTRANS, 2018) and using standard templates from the California Temporary Traffic Control Handbook. (CATTCH, 2018) This handbook was previously known as the California Joint Utility Traffic Control Manual. (CJUTCM,

[1] Note that APM HAZ-3 is numbered as it is presented in SCE's Proponent's Environmental Assessment. It is included in this Wildfire section because the EIR Hazards section does not address wildfire.

APM	Description
	2010) SCE will follow the recommendations in this manual regarding basic standards for the safe movement of traffic on highways and streets in accordance with Section 21400 of the CVC. These recommendations include provisions for safe access of police, fire, and other rescue vehicles.

3.21.3.2. Impact Significance Criteria

The following significance criteria for wildfire have been identified based on the CEQA Appendix G Environmental Checklist. An impact related to wildfire would be considered significant and mitigation would be required if a project located in or near state responsibility areas or lands classified as very high fire hazard severity zones met the following criteria:

- **WF 1:** Substantially impair emergency response or emergency evacuation
- **WF 2:** Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose people to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire
- **WF-3:** 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
- **WF-4:** 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?

3.21.3.3. Impacts and Mitigation Measures

This analysis considers the entire Proposed Project (Segments 1, 2, 3N, and 3S) and does not present analysis by segment. The Cal City Options defined in Section 2.1.1 and illustrated in Figure 2-2 would have impacts no different from those defined for Impacts WF-1 through WF-4, because the extent of construction and operational activity required for the Proposed Project would be the same as that required for any of the Cal City Options.

Impact WF-1: Substantially impair emergency response or emergency evacuation.

Construction

LESS THAN SIGNIFICANT. No emergency evacuation routes are located in the project area or crossed by the Proposed Project. As discussed in Section 3.19 (Transportation), the Proposed Project would not be expected to significantly impact traffic circulation or increase demands on existing emergency response services during temporary construction activities. Construction equipment and materials would be parked and staged off public roads. Access would always be granted to emergency responders in the event of an emergency to allow safe access.

Subtransmission-related construction activities may require temporary closure of travel lanes on public roadways, private roads, and driveways, and would involve the movement of oversize vehicles that could affect emergency vehicle access to and through construction areas or affect emergency evacuation along area roads. Implementation of APM TRA-1 requires coordination with local authorities, including emergency responders, regarding construction schedules and temporary road closures. APM TRA-1 would also ensure that the project contractors follow appropriate emergency response procedures to ensure that emergency vehicles have appropriate access through construction areas.

SCE would also be required to obtain the appropriate permits from local jurisdictions, including Union Pacific Railroad (UPRR), BNSF Railway, and Caltrans, as applicable, for construction activities that would encroach upon any public ROW or easement. Vehicle movements along, and use of, access roads would be communicated to and coordinated with the appropriate agencies as necessary. At construction work areas, equipment would be situated or attended to facilitate adequate emergency vehicle access. In

addition, all workers and construction equipment would be evacuated from the construction area in the event of an emergency evacuation so that the construction vehicles would not interfere with emergency evacuation. With implementation of APM TRA-1, construction of the Proposed Project would not interference with emergency response or evacuation plans. Impacts would be less than significant, and no mitigation is required.

Operations and Maintenance

LESS THAN SIGNIFICANT. Operations and maintenance activities for the Proposed Project would be similar to existing operations and maintenance performed at the existing subtransmission line and substations. Operations and maintenance activities would generally not occur in roadways; however, operations and maintenance activities associated with the project facilities may infrequently require temporary lane closures to allow access to the Proposed Project. The frequency and duration of lane closures would be similar to the lane closures required for existing facilities, but could be less due to the newer equipment, which meets modern design and engineering standards. The steel structures would be at reduced risk of failure in the event of a wildfire where the steel structures are replacing wood poles. The steel structures would pose a reduced risk of burning and creating a circumstance in which the subtransmission line would block a road during an emergency evacuation. Operations and maintenance of the Proposed Project would not increase impacts on emergency access or emergency evacuation. Impacts would be less than significant.

Impact WF-2: Exacerbate wildfire risks, due to slope, prevailing winds, and other factors, which would thereby expose people to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire.

Construction

LESS THAN SIGNIFICANT. Construction of the Proposed Project would occur along the existing subtransmission alignment within areas that are a high FHSZ and HFTD within Segment 1. The project construction areas and alignment include areas that contain vegetation within and adjacent to wildlands. Construction-related activities within areas located in or near wildlands have the potential to ignite a wildland fire. Examples of construction-related ignition sources include sparks from vehicles, equipment, welding or from metal striking metal or stone, which could ignite surrounding vegetation. Fires could also be ignited by parking vehicles over dry vegetation, where hot undercarriages could ignite grass or shrubs, and improperly discarded smoking materials.

SCE would implement various standard fire prevention protocols identified in SCE's example Transmission Line Project Fire Plan (SCE, 2025). The standard specifications were developed for use by SCE to ensure uniform guidelines for prevention, control, and extinguishment of fires during transmission line construction projects. These protocols include, but are not limited to, prohibiting smoking on-site, use of spark arresters on construction equipment, availability of firefighting equipment on-site at all times, designation of a fire patrolperson equipped with reliable communication equipment, and work restrictions based upon project activities.

While these standard procedures would reduce wildfire risk, they do not address the project-specific risk of constructing in wildlands in a high FHSZ. Because the Proposed Project is in and adjacent to wildlands in areas of high FHSZ and HFTD, a wildfire ignited by construction of the Proposed Project would be expected to spread.

A project-specific Fire Prevention and Emergency Response Plan would be developed by SCE as part of APM HAZ-3 to address the risks of wildfire during construction. APM HAZ-3 requires procedures for red flag warning days, worker training to reduce wildfire ignition, and fire response procedures to reduce the risk that a fire ignited by construction activities would spread and become a wildfire. The project-specific fire prevention plan for construction of the Proposed Project would be submitted to CPUC, BLM, CAL FIRE,

Inyo, Kern and San Bernardino Counties, and local municipal fire agencies for review prior to initiation of construction to ensure that the project fire prevention procedures meet the best practices for all agencies involved. With implementation of SCE protocols defined in its example Transmission Line Project Fire Plan (SCE, 2025) and the requirements defined in APM HAZ-3, the impact from construction of the Proposed Project would be less than significant.

Operations and Maintenance

LESS THAN SIGNIFICANT. Implementation of the Proposed Project would not expose new areas to risk of wildfire because the Proposed Project would replace the existing subtransmission line, which would be removed. In addition, the existing subtransmission line does not meet the current standards for ground clearance and includes wood poles in Segment 3 that increase the risk of igniting and exacerbating a wildfire. The Proposed Project would install stronger and taller steel poles that would increase the clearance with the ground and vegetation and thereby reduce the potential for fire ignition compared to existing conditions.

Maintenance activities necessary for the Proposed Project would be similar to the existing subtransmission lines, substations, and associated facilities. As with current operations and maintenance, SCE would comply with all current federal and State laws related to vegetation clearance and fire prevention. SCE would also implement its WMPs required under SB 901 and Public Utilities Code Section 8386 during operations and maintenance activities of the Proposed Project, including in Segment 1 where there is an increased risk of wildfire (Figures 3.21-1a through 3.21-1c, CAL FIRE Fire Hazard Severity Zones, Segment 1, Figure 3.21-2, CPUC High Fire Threat District, and Figures 3-21.3a through 3-21.3c, CAL FIRE Fire Threat, Segment 1)). WMPs are subject to CPUC and Energy and Safety oversight and are designed to mitigate wildfire risk associated with SCE's infrastructure and operational activities. Therefore, operations and maintenance of the Proposed Project would not exacerbate wildfire risks. Impacts would be less than significant.

Impact WF-3: Require the installation or maintenance of 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.

Construction

LESS THAN SIGNIFICANT. Construction activities would require the installation or maintenance of power lines. The subtransmission lines would replace the existing SCE subtransmission lines in the area. As discussed above in Impact WF-2, with the implementation of SCE protocols defined in its example Transmission Line Project Fire Plan (SCE, 2025) and the requirements defined in APM HAZ-3, construction of the Proposed Project would not exacerbate wildfire risks. Impacts would be less than significant.

Operations and Maintenance

LESS THAN SIGNIFICANT. Implementation of the Proposed Project would require the installation of a new subtransmission line adjacent to the existing subtransmission line, which would be removed. The existing subtransmission line does not meet the current standards for ground clearance and includes wooden poles in Segment 3 that increase the risk of igniting and exacerbating a wildfire. The Proposed Project would install stronger and taller steel poles that would increase the clearance with the ground and vegetation and thereby reduce the potential for fire ignition compared to existing conditions.

Maintenance activities for the Proposed Project would be similar to the existing subtransmission lines, substations, and associated facilities. SCE would continue to implement its standard fire prevention protocols during maintenance activities, comply with applicable laws and regulations. Among the maintenance activities that would continue after construction would be ongoing implementation of SCE's Wildfire

Mitigation Plan in Segment 1, which is located in an area designated by the CPUC as Fire Threat Area Tier 2–Elevated.

The Wildfire Mitigation Plan describes strategies, programs and activities that are in place, being implemented or are under development by SCE to proactively address and mitigate the threat of electrical infrastructure-associated ignitions that could lead to wildfires. Therefore, operations and maintenance of the Proposed Project would not exacerbate wildfire risks. Impacts would be less than significant.

Impact WF-4: 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.

Construction

LESS THAN SIGNIFICANT. Wildfire is influenced by many factors, including the presence and condition of fuels (vegetation), weather conditions (temperature, humidity, and wind), and topography. Topographical features, such as elevation, slope (the steepness of the land), aspect (the direction a slope faces), or other land features, can help or hinder the spread of fire. Drainages can also act as fire breaks if fuels are moist or there is little vegetation. Elevation and aspect can determine how hot and dry a given area will be.

Most of Segment 1 is located in Owens Valley, in the southwestern portion of the Great Basin Desert. Segments 2, 3N, and 3S lie within the Mojave Desert. The majority of the vegetation along the project alignment consists of shrublands. Tree-dominated vegetation occurs most frequently at higher elevations, as well as along streams and portions of the Owens River at the north end of Segment 1 in the Owens Valley. Herbaceous vegetation is generally scarce within the project area.

The project area is located in valley areas with relatively flat topography that would not be susceptible to post-fire slope instability. Localized areas of relatively steep slopes and increased landslide hazards occur where the Proposed Project runs along the edges of hills and mountains, including the Coso and El Paso Mountains. Areas with steeper slope allow fire to spread quickly upwards and burn up hillsides.

Steeper slopes occur in Segment 1 near the existing Haiwee and Coso Substations, and where Segment 2 intersects the El Paso Mountains. These localized areas may be susceptible to post-fire slope instability; however, these areas are generally designated to have a moderate fire hazard severity rating, indicating that the vegetation in the area is less susceptible to fire or is sparser than in other areas, or that few structures susceptible to fire (and thus inhabitants) are present.

In Segment 1, where the Proposed Project is in a high FHSZ and HFTD, the Proposed Project is generally located within a valley flanked by the Sierra Nevada mountain range to the west and Inyo mountains to the east. While the Proposed Project is in the valley and not adjacent to the mountains for the most part, if a wildfire ignited in the valley spread to the mountains, it would be expected to spread upslope and could cause loss of significant vegetation along the slope thereby increasing the risk of flooding or landslides.

SCE has proposed APM HAZ-3 which includes procedures for reporting and responding to a fire during construction to help contain any fire ignited by construction. Therefore, although construction activities could ignite a wildfire that could burn the surrounding hill slopes, implementation of APM HAZ-3 would contain fires started by construction so that they do not extend beyond the valley and create subsequent landslide or flooding conditions in the surrounding mountain areas. The impact would be less than significant.

Operations and Maintenance

LESS THAN SIGNIFICANT. As discussed above, the project structures would be maintained by SCE and SCE would comply with all current federal and State laws related to vegetation clearance and fire prevention. The project structures would consist of modern steel poles that increase the clearance between the subtransmission line and the ground/vegetation. The increased ground clearance would overall reduce

the likelihood of the Proposed Project causing a wildfire. The new structures would not be more likely to expose people or structures to any significant risks above baseline. Maintenance activities for the Proposed Project would be similar to the existing maintenance activities and would include implementation of SCE's Wildfire Mitigation Plan. The operations and maintenance impact on wildfire-induced flooding and landslides would be less than significant.

3.21.4. Mitigation Monitoring, Compliance, and Reporting

No mitigation is required for impacts related to wildfire.

3.21.5. References

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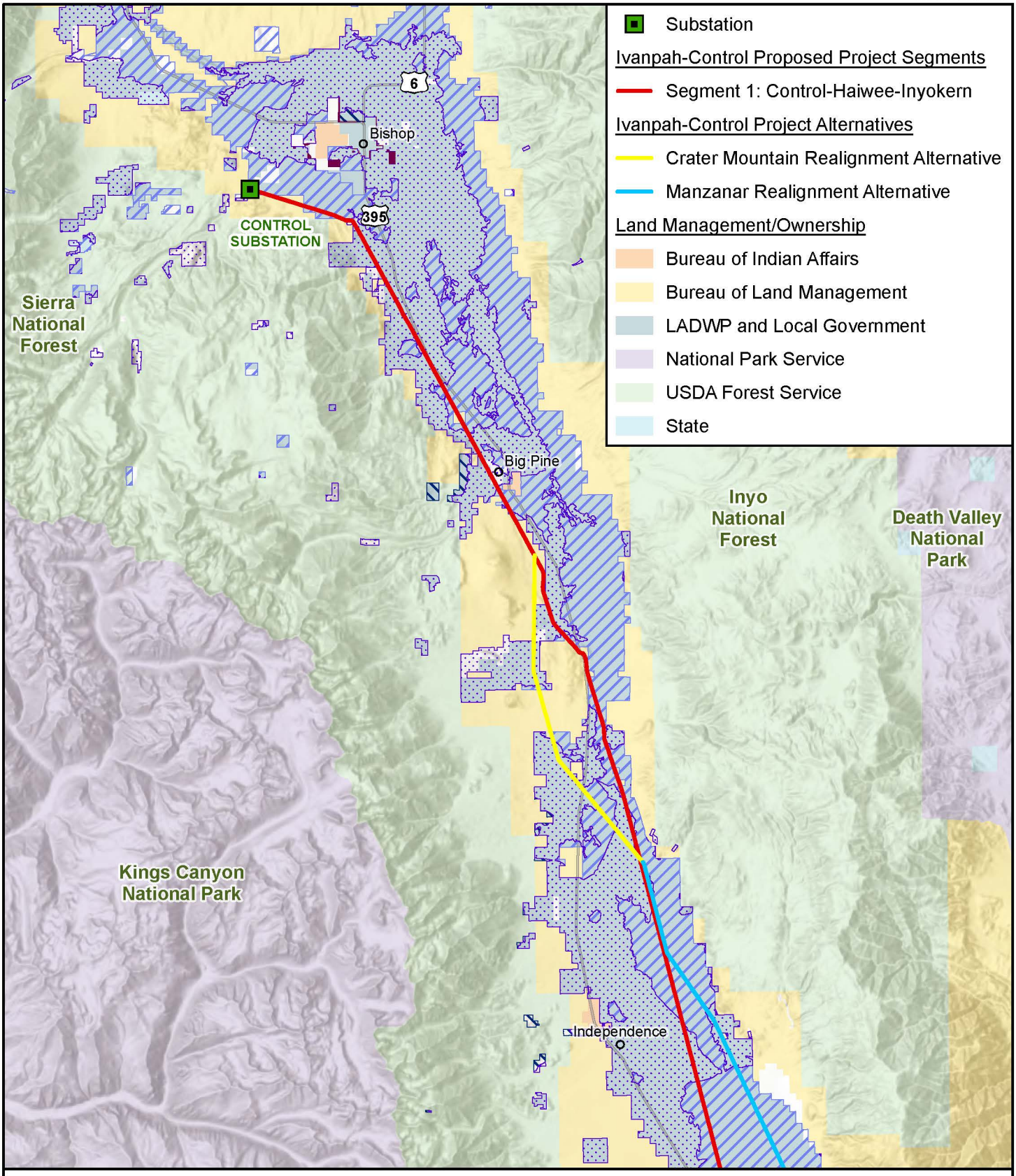


Source: Aspen, 2025; CAL FIRE, 2025; BLM, 2025; Esri, 2025; SCE, 2025.

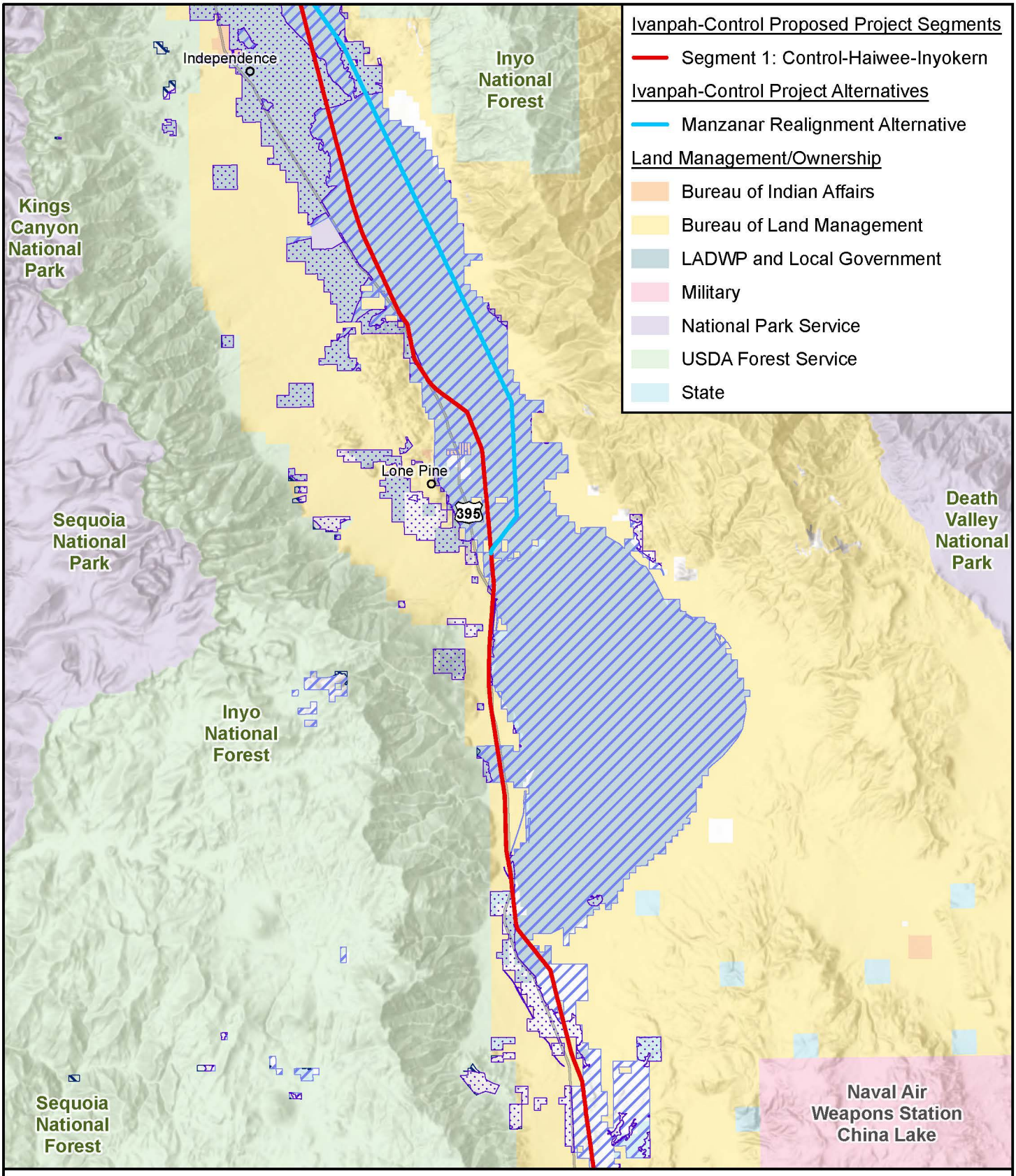
Figure 3.21-1a

CAL FIRE Fire Hazard Severity Zones Segment 1 North

Fire Hazard Severity Zones in Local Responsibility Area
- High

Fire Hazard Severity Zones in State Responsibility Area
- Very High
- High
- Moderate

1:350,000
0 5 miles
N



Source: Aspen, 2025; CAL FIRE, 2025; BLM, 2025; Esri, 2025; SCE, 2025.

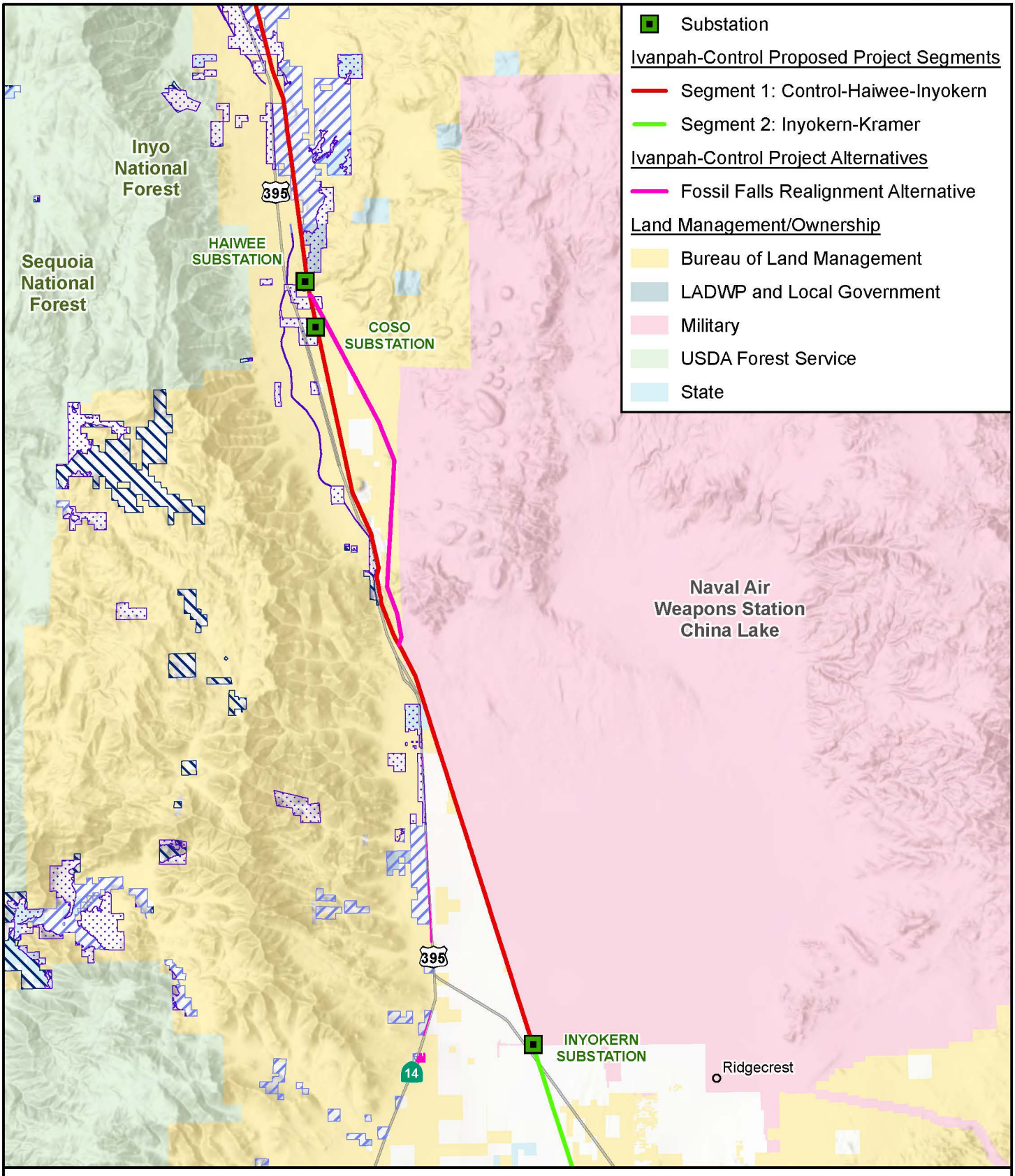
Figure 3.21-1b

CAL FIRE Fire Hazard Severity Zones Segment 1 Central

Fire Hazard Severity Zones in Local Responsibility Area
- High
- Moderate

Fire Hazard Severity Zones in State Responsibility Area
- Very High
- High
- Moderate

1:350,000
0 5 miles
N



Source: Aspen, 2025; CAL FIRE, 2025; BLM, 2025; Esri, 2025; SCE, 2025.

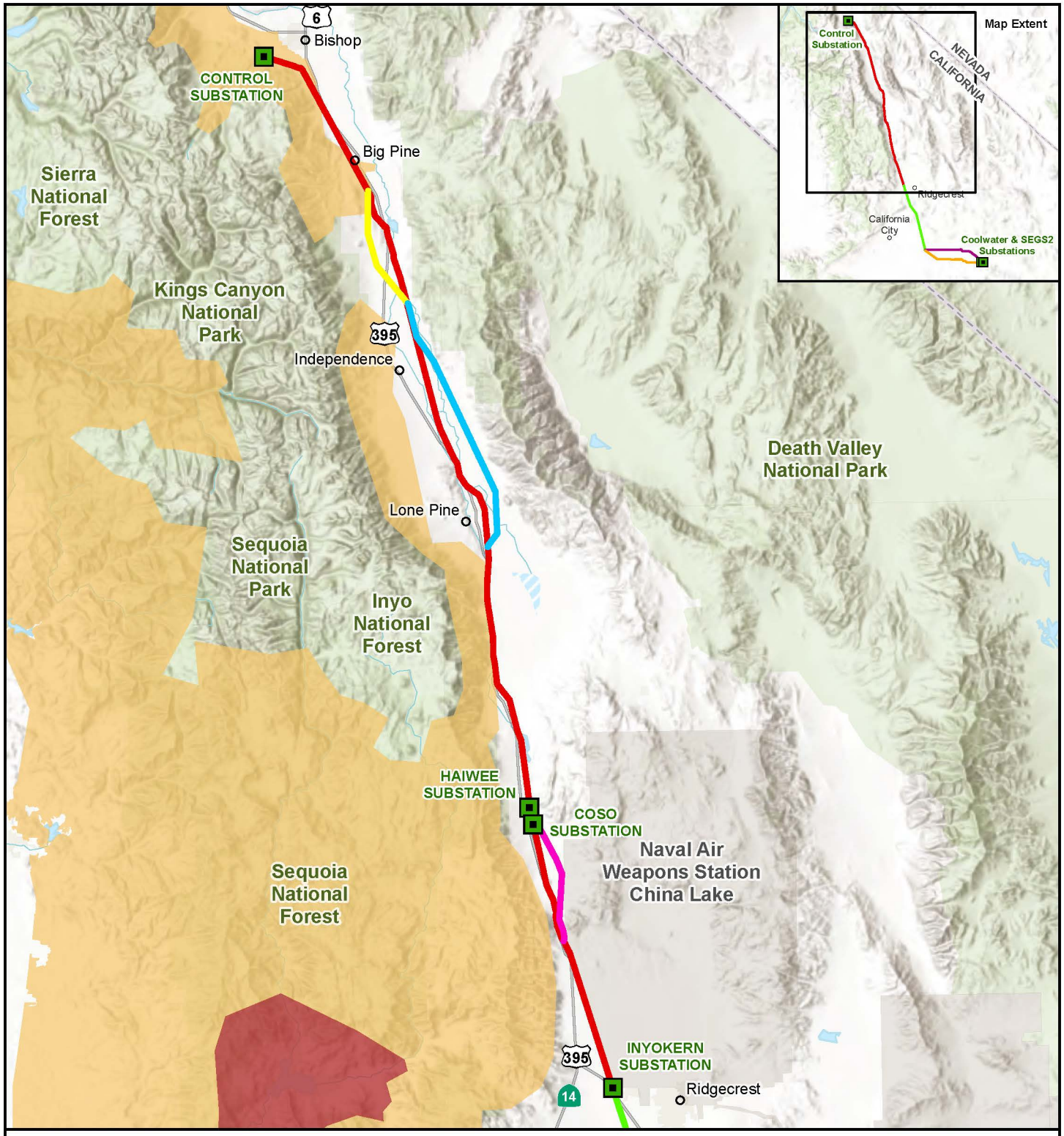
Figure 3.21-1c

CAL FIRE Fire Hazard Severity Zones Segment 1 South

Fire Hazard Severity Zones in Local Responsibility Area
- Moderate

Fire Hazard Severity Zones in State Responsibility Area
- Very High
- High
- Moderate

1:350,000
0 5 miles
N



Source: Aspen, 2024; CPUC, 2024; Esri, 2024; SCE, 2024.

Figure 3.21-2

CPUC High Fire Threat District

Ivanpah-Control Proposed Project Segments
- Segment 1: Control-Haiwee-Inyokern
- Segment 2: Inyokern-Kramer

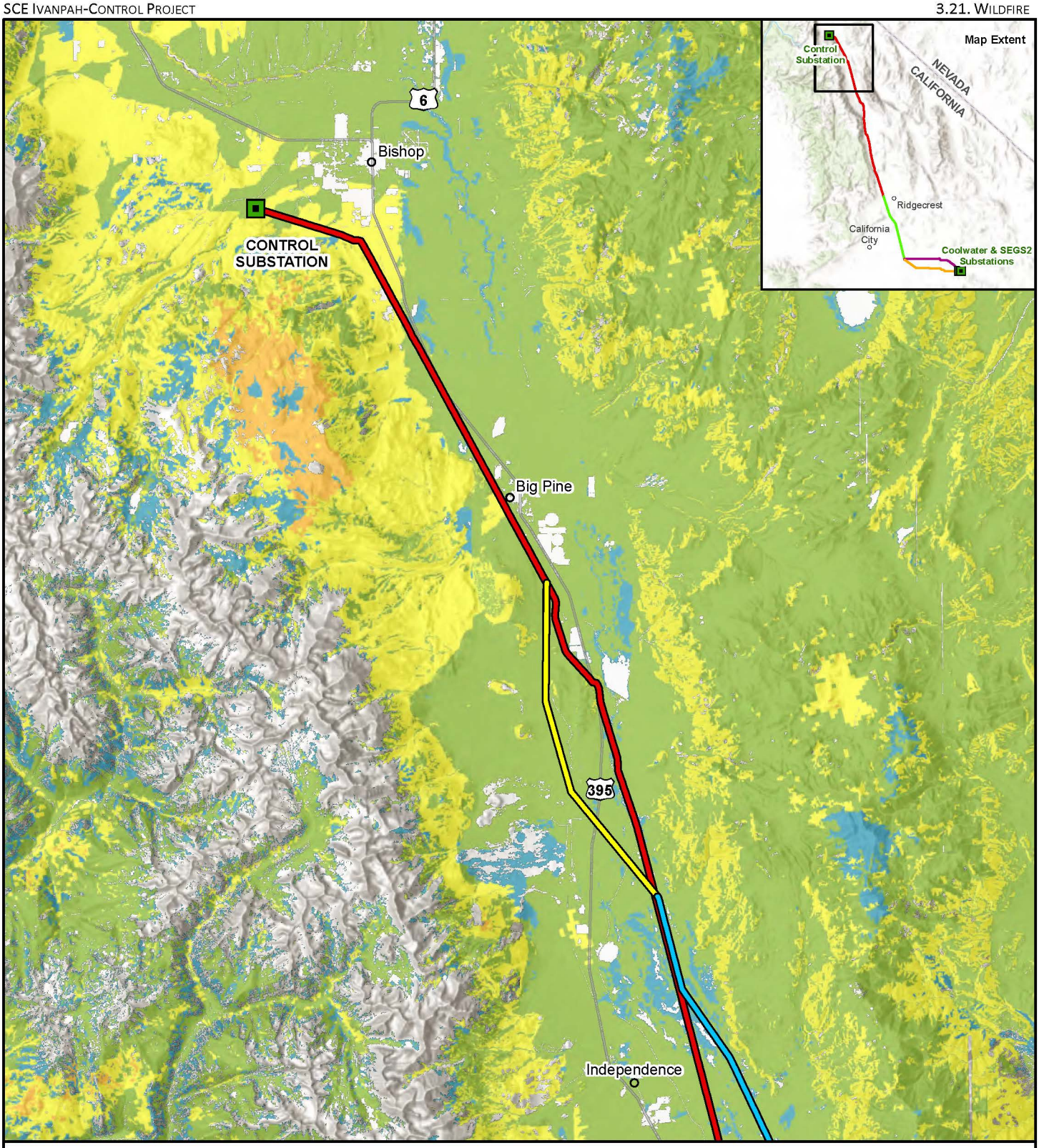
Ivanpah-Control Project Alternatives
- Crater Mountain Realignment Alternative
- Fossil Falls Realignment Alternative
- Manzanar Realignment Alternative

Substation

CPUC Fire Threat
- Tier 2
- Tier 3

1:1,000,000

N 0 10 miles



Source: Aspen, 2025; CAL FIRE, 2025; Esri, 2025; SCE, 2025.

Substation

Figure 3.21-3a

CAL FIRE Fire Threat Segment 1 North

Fire Threat
- Very High
- High
- Moderate
- Low

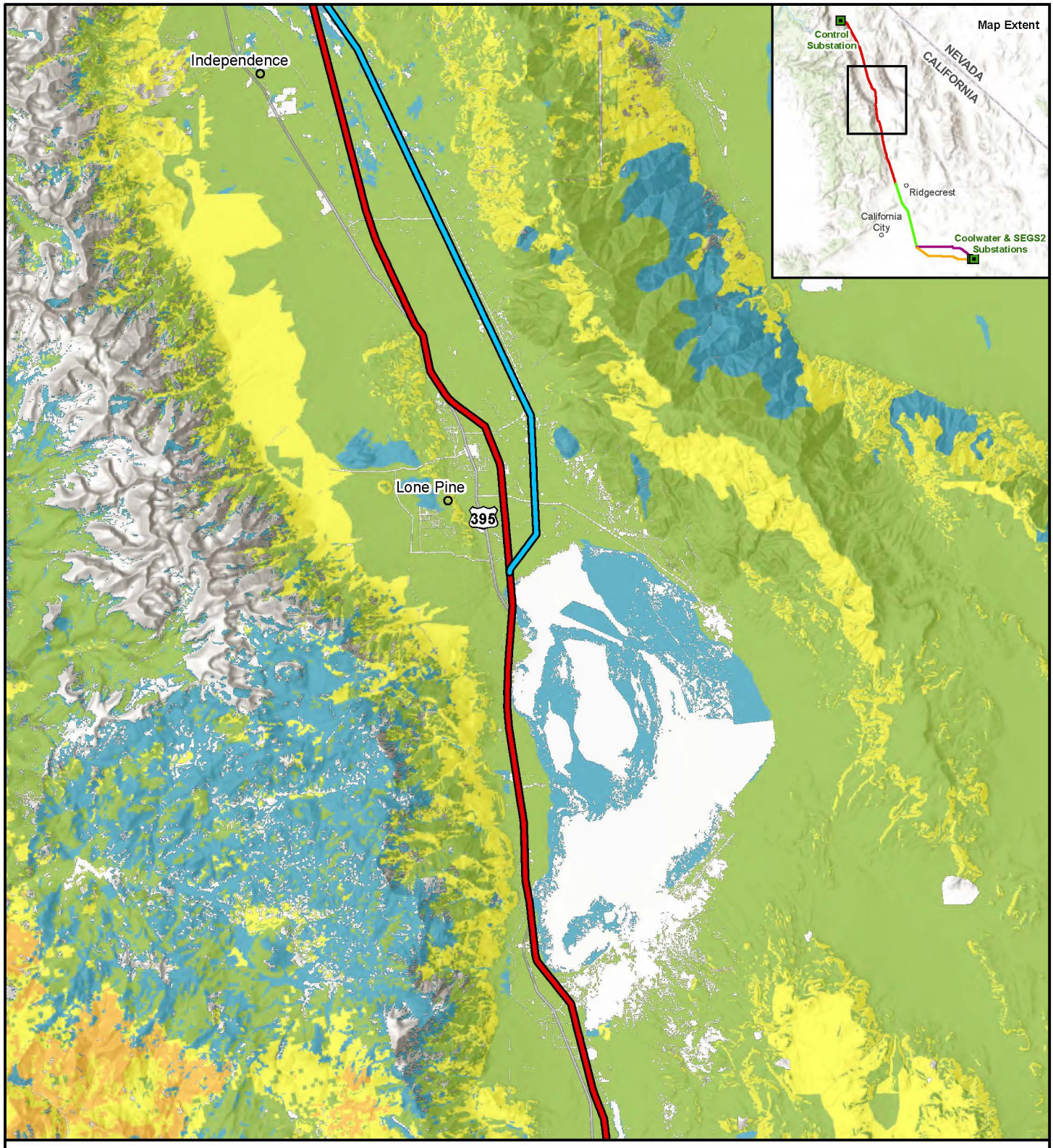
Ivanpah-Control Project Alternatives
- Crater Mountain Realignment Alternative
- Manzanar Realignment Alternative

Ivanpah-Control Proposed Project Segments
- Segment 1: Control-Haiwee-Inyokern

N

1:350,000

0 5 miles



Source: Aspen, 2025; CAL FIRE, 2025; Esri, 2025; SCE, 2025.

Figure 3.21-3b

CAL FIRE Fire Threat Segment 1 Central

Fire Threat
- Very High
- High
- Moderate
- Low

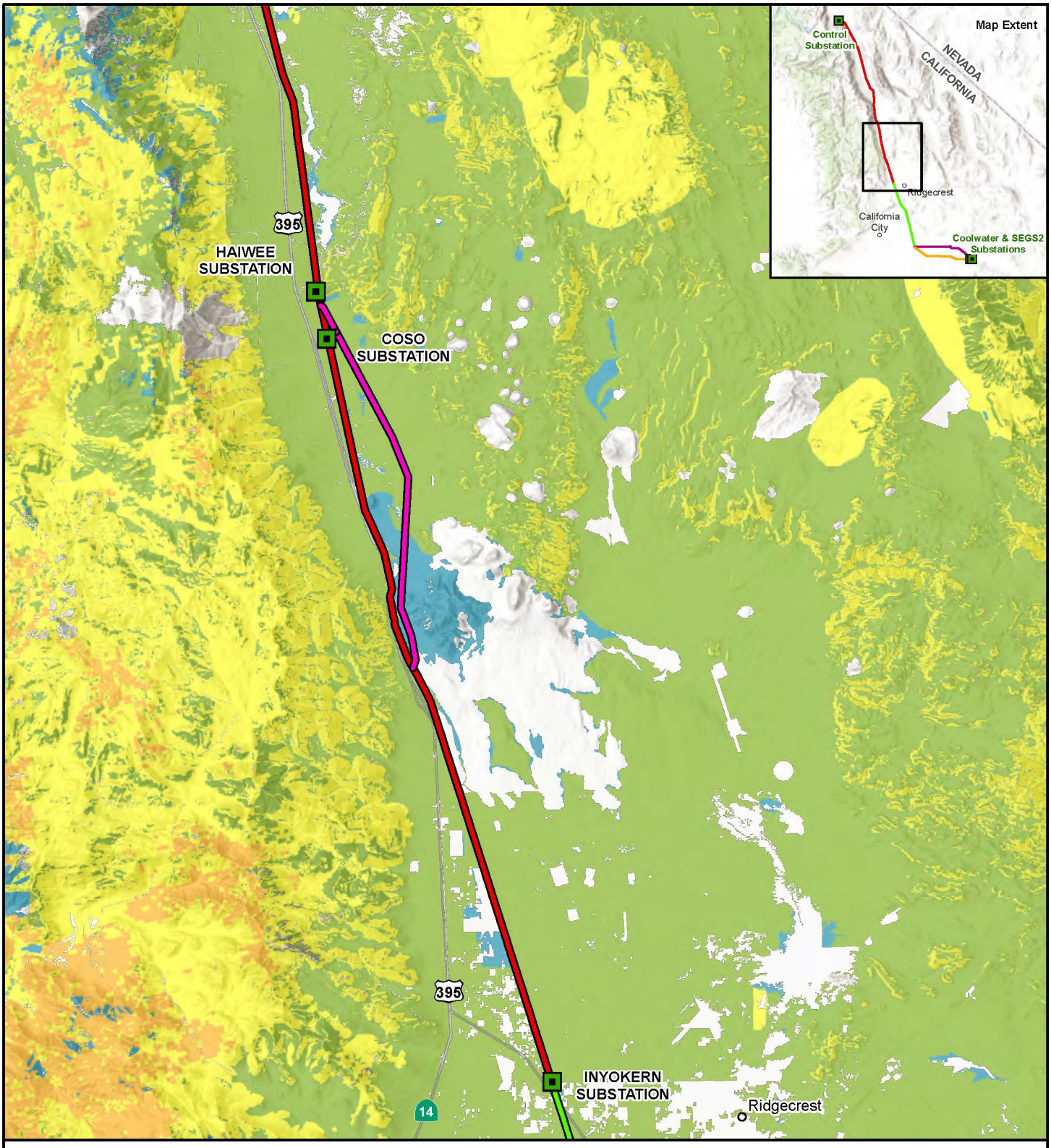
Ivanpah-Control Project Alternatives
- Manzanar Realignment Alternative

Ivanpah-Control Proposed Project Segments
- Segment 1: Control-Haiwee-Inyokern

N

1:350,000

0 5 miles



Source: Aspen, 2025; CAL FIRE, 2025; Esri, 2025; SCE, 2025.

Substation

Figure 3.21-3c

CAL FIRE Fire Threat Segment 1 South

Fire Threat
- Very High
- High
- Moderate
- Low

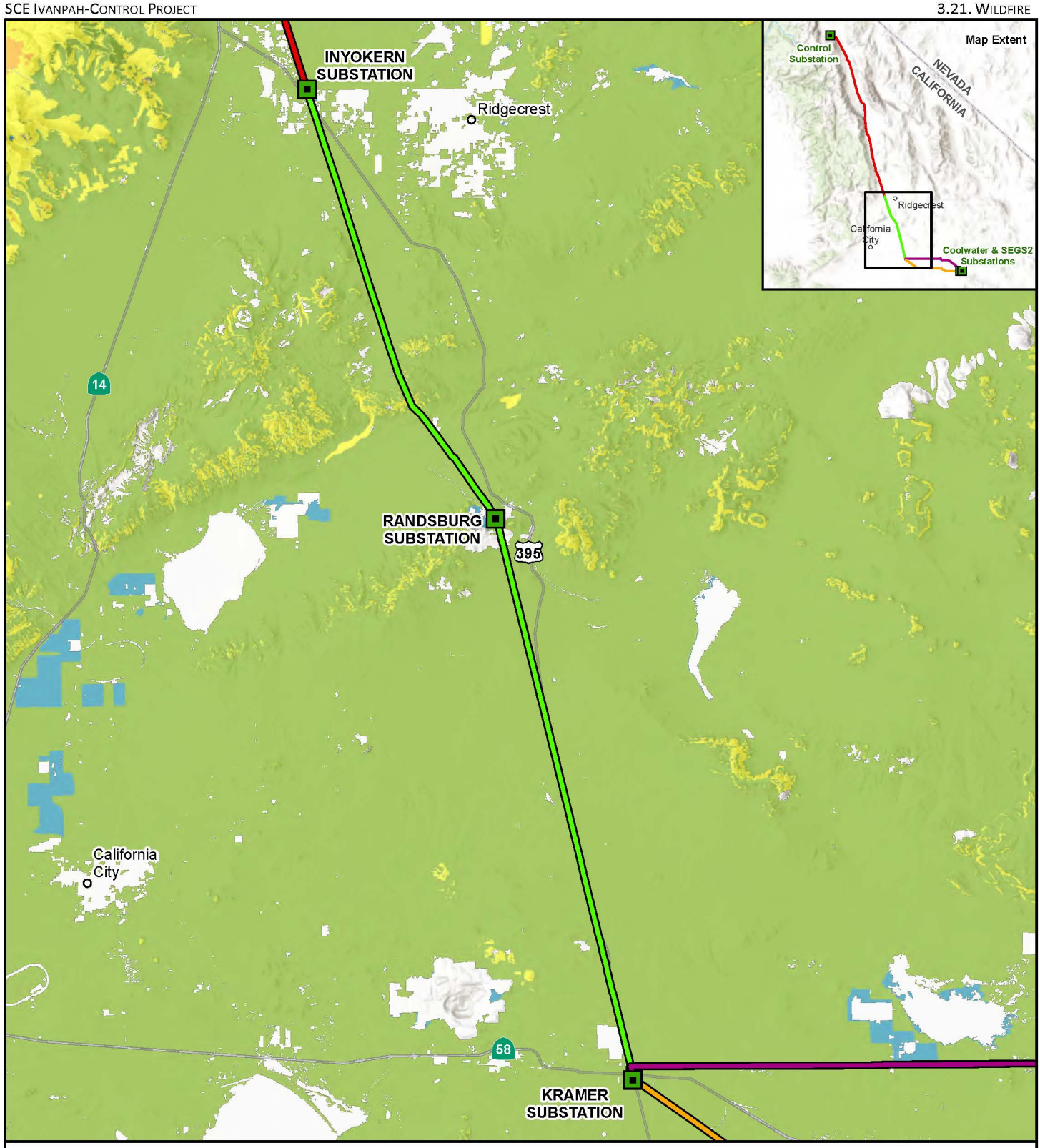
Ivanpah-Control Project Alternatives
- Fossil Falls Realignment Alternative

Ivanpah-Control Proposed Project Segments
- Segment 1: Control-Haiwee-Inyokern
- Segment 2: Inyokern-Kramer

N

1:350,000

0 5 miles



Source: Aspen, 2025; CAL FIRE, 2025; Esri, 2025; SCE, 2025.

Figure 3.21-3d

CAL FIRE Fire Threat Segment 2

Substation

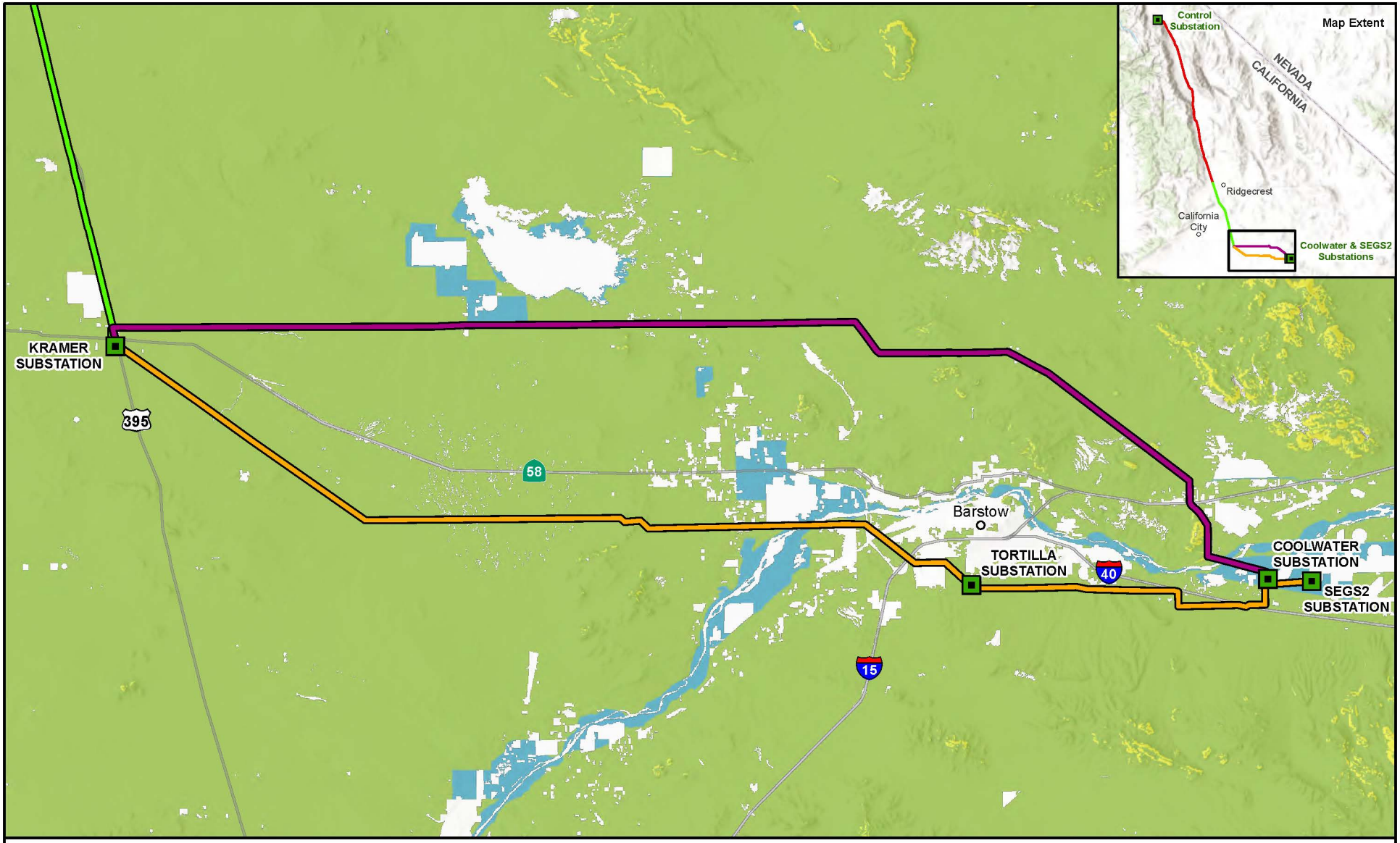
Fire Threat
- Very High
- High
- Moderate
- Low

Ivanpah-Control Proposed Project Segments
- Segment 1: Control-Haiwee-Inyokern
- Segment 2: Inyokern-Kramer
- Segment 3N: Kramer-Coolwater
- Segment 3S: Kramer-Tortilla-Coolwater

N

1:400,000

0 5 miles



Source: Aspen, 2025; CAL FIRE, 2025; Esri, 2025; SCE, 2025.

Substation

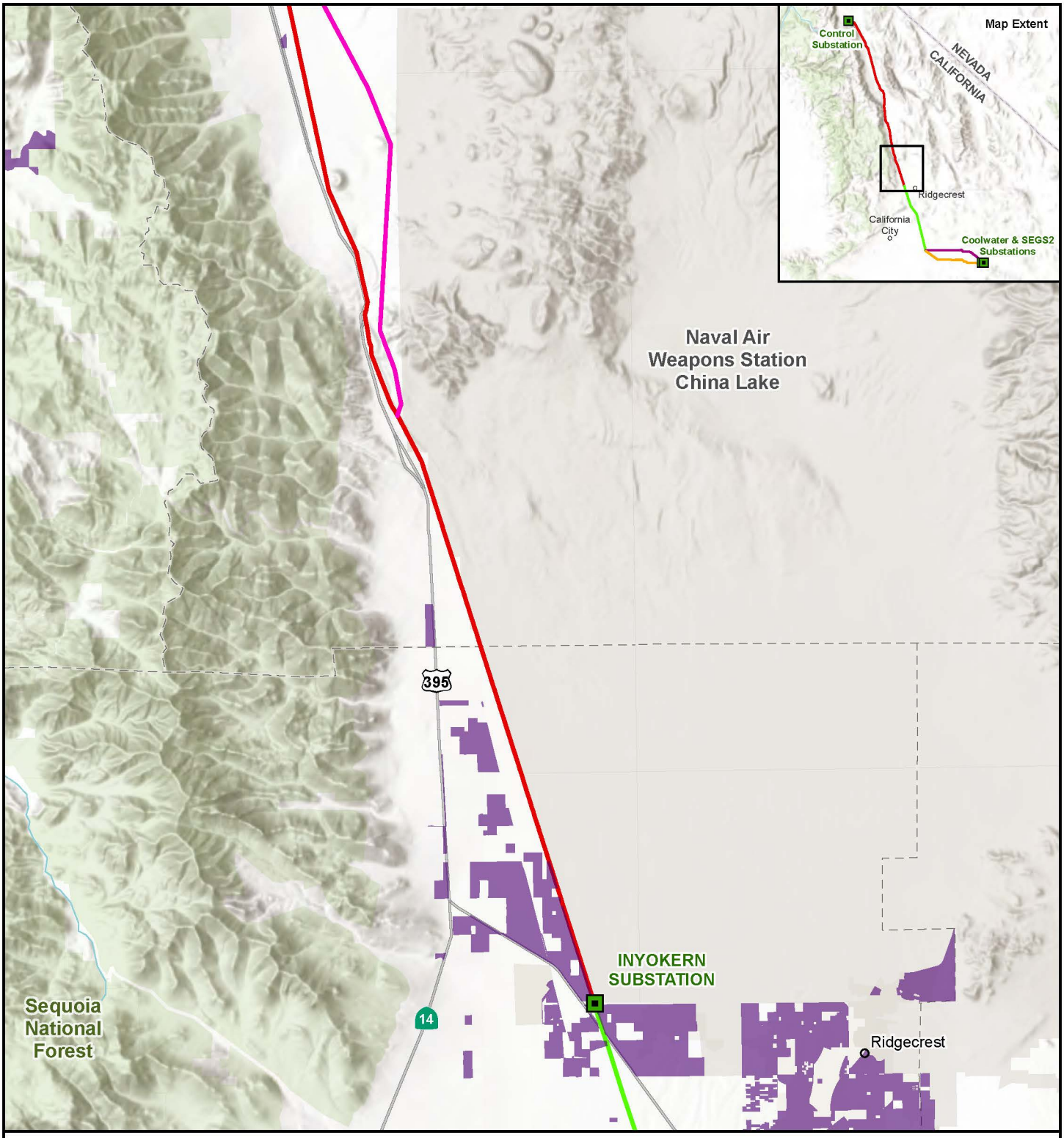
Fire Threat
- High
- Moderate
- Low

Ivanpah-Control Proposed Project Segments
- Segment 2: Inyokern-Kramer
- Segment 3N: Kramer-Coolwater
- Segment 3S: Kramer-Tortilla-Coolwater

Figure 3.21-3e

CAL FIRE Fire Threat Segments 3N and 3S

1:350,000
N 0 5 miles



Source: Aspen, 2024; Esri, 2024; SCE, 2024; USFS, 2023.

Figure 3.21-4a

Wildland-Urban Interface Areas Segment 1 South and Segment 2 North

Ivanpah-Control Proposed Project Segments
- Segment 1: Control-Haiwee-Inyokern
- Segment 2: Inyokern-Kramer

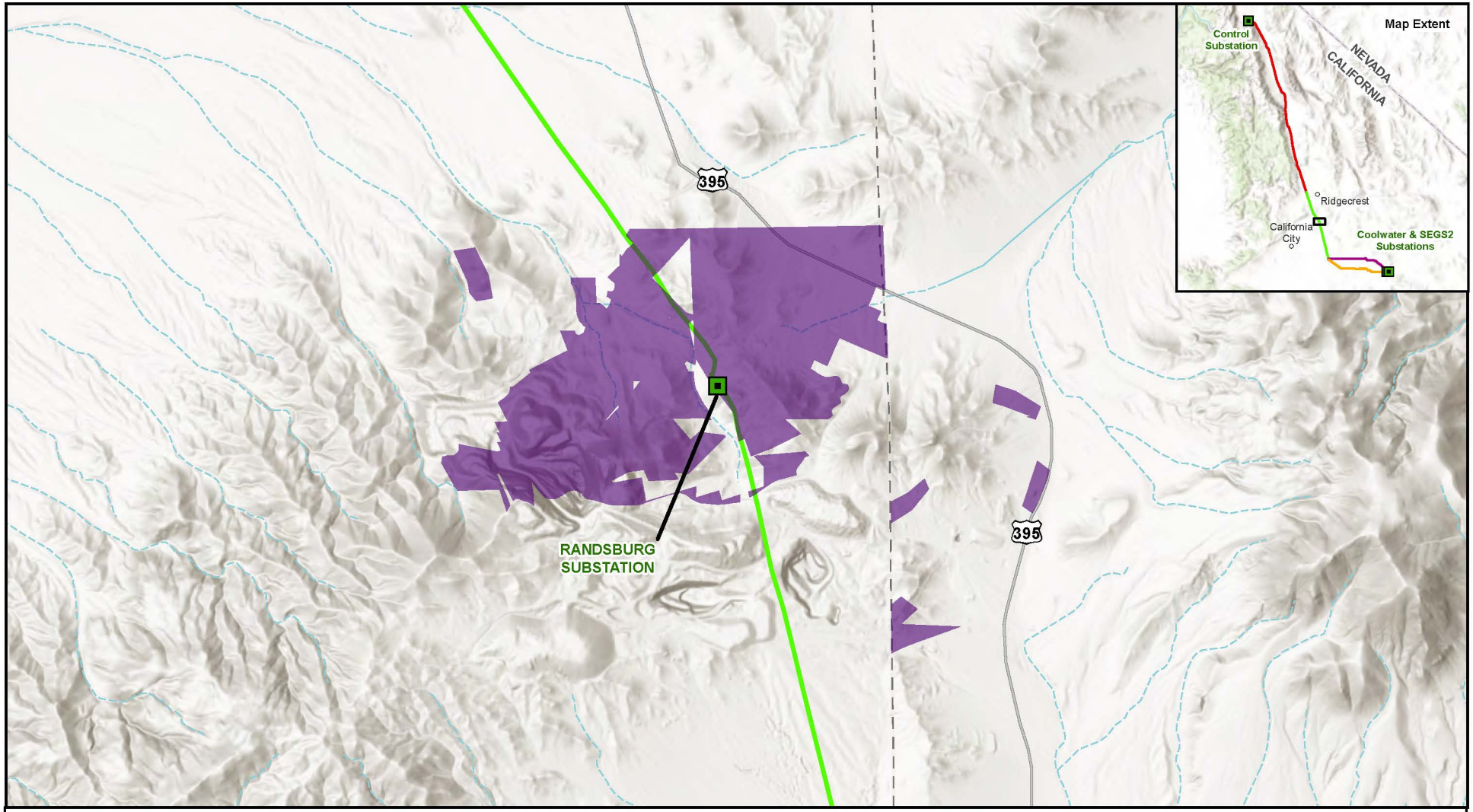
Ivanpah-Control Project Alternatives
- Fossil Falls Realignment Alternative

- Substation
- Wildland-Urban Interface (WUI)

1:250,000

N 0 4 miles

**WUI designations depicted include the following: High Density Interface, High Density Intermix, Medium Density Interface, Medium Density Intermix, Low Density Interface, and Low Density Intermix.*



Source: Aspen, 2024; Esri, 2024; SCE, 2024; USFS, 2023.

Figure 3.21-4b

Wildland-Urban Interface Areas Segment 2 Central

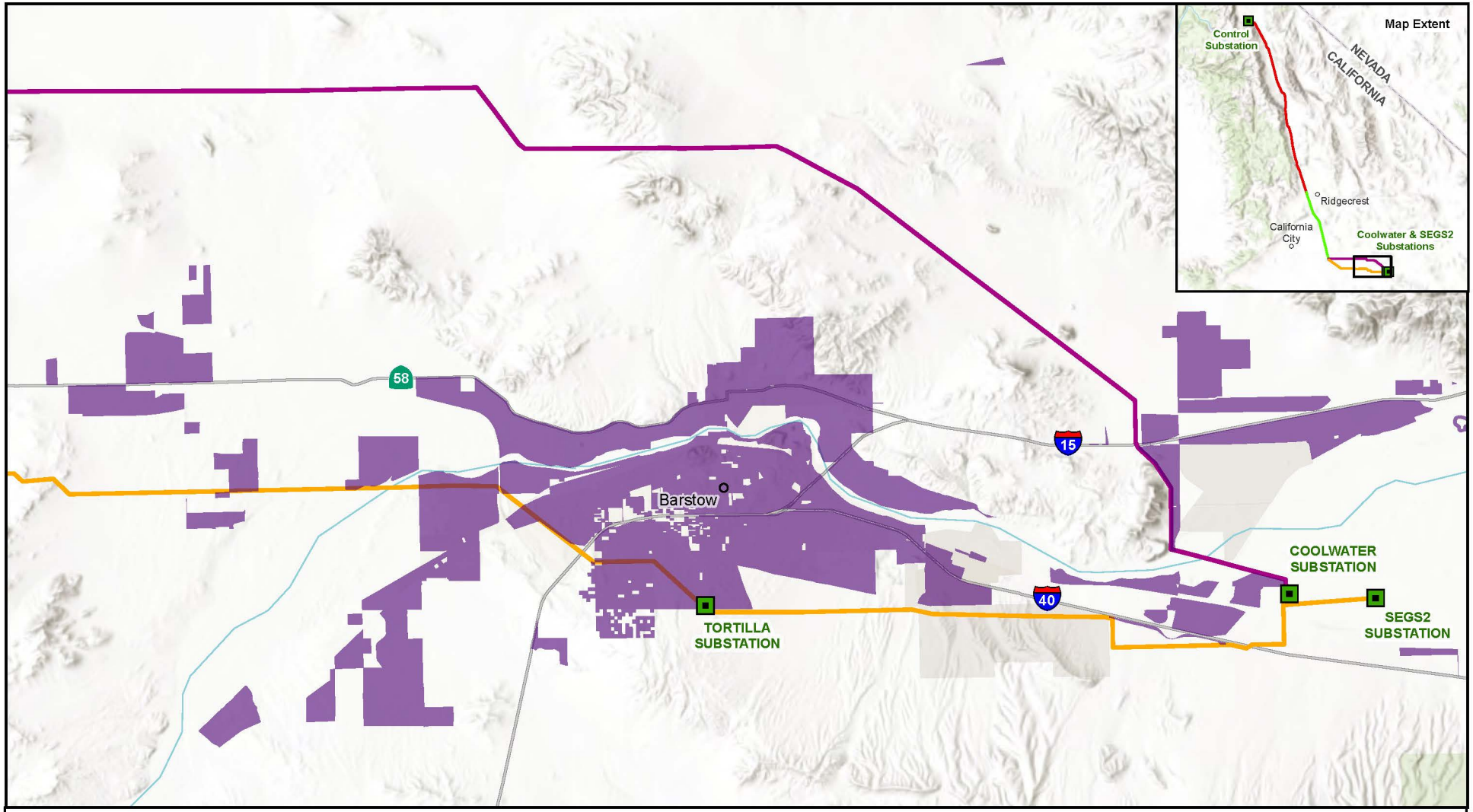
Ivanpah-Control Proposed Project Segments

- Segment 2: Inyokern-Kramer
- Substation
- Wildland-Urban Interface (WUI)

1:48,000

N 0 1 miles

**WUI designations depicted include the following: High Density Interface, High Density Intermix, Medium Density Interface, Medium Density Intermix, Low Density Interface, and Low Density Intermix.*



Source: Aspen, 2024; Esri, 2024; SCE, 2024; USFS, 2023.

Figure 3.21-4c

Wildland-Urban Interface Areas Segments 3N and 3S

Ivanpah-Control Proposed Project Segments

- Segment 3N: Kramer-Coolwater
- Segment 3S: Kramer-Tortilla-Coolwater
- Substation
- Wildland-Urban Interface (WUI)

1:160,000

N 0 4 miles

**WUI designations depicted include the following: High Density Interface, High Density Intermix, Medium Density Interface, Medium Density Intermix, Low Density Interface, and Low Density Intermix.*

4. PROJECT ALTERNATIVES

This section presents the methodology for alternatives selection, the rationale for evaluation of alternatives retained for analysis, and the rationale for elimination of alternatives from detailed consideration. The conclusions regarding comparison of alternatives' environmental impacts with those of the Proposed Project are presented in Section 4.5, and the environmentally superior alternative is presented in Section 4.6.

Detailed impact assessment of alternatives is presented in Sections 4.7 through 4.11.

4.1. CEQA Requirements for Alternatives

CEQA Guidelines Section 15126.6 (a) states that:

> An EIR shall describe a reasonable range of alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project.

The CEQA Guidelines require an EIR to evaluate the comparative merits of each alternative selected for analysis and provide sufficient information about each alternative to compare it with the Proposed Project. An EIR should explain how the project alternatives were selected for analysis as well as identifying the alternatives that were rejected as infeasible and briefly explaining why they were rejected (CEQA Guidelines Section 15126.6[a], [c], [d]). The CEQA Guidelines state that the discussion of alternatives shall focus on alternatives capable of eliminating or reducing significant adverse environmental effects of a project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly. However, the CEQA Guidelines provide that an EIR need not consider an alternative whose effects cannot be reasonably ascertained and whose implementation is remote or speculative.

To comply with CEQA's requirements, each alternative that was initially identified for the Proposed Project was evaluated in three ways:

- Does the alternative meet most of the basic project objectives?
- Is the alternative potentially feasible (from economic, environmental, legal, social, and technological standpoints)?
- Does the alternative avoid or substantially lessen any significant effects of the Proposed Project, including consideration of whether the alternative itself could create significant environmental effects potentially greater than those of the Proposed Project?

4.2. Alternatives Screening Methodology

Alternatives were evaluated using a screening process that consisted of three steps:

- **Step 1:** Clearly define each alternative that would avoid or substantially lessen any of the significant effects of the Proposed Project to allow comparative evaluation.
- **Step 2:** Evaluate each alternative in comparison with the Proposed Project using CEQA criteria (defined below).
- **Step 3:** Based on the results of Step 2, determine the suitability of each alternative for full analysis in the EIR by looking at whether the alternative: (1) achieves all or most of the project's objectives, (2) is potentially feasible, and (3) avoids or substantially lessens an environmental impact of the project as proposed. If the alternative does not meet these criteria, eliminate it from further consideration.

Infeasible alternatives and alternatives that did not offer any overall environmental advantage (i.e., the alternative either did not reduce or avoid one or more of the Proposed Project's significant effects or if it did, other effects were significantly increased) were removed from further consideration and analysis.

Following the screening process, the advantages and disadvantages of the remaining alternatives were carefully weighed with respect to CEQA's criteria for consideration of alternatives.

4.2.1. Project Objectives

SCE's project objectives are defined in PEA Section 1.3:

- Ensure compliance with standards contained in CPUC General Order 95 and NERC Facility Ratings for this project.
- Continue to provide safe and reliable electrical service.
- Meet I-C Project needs while minimizing environmental impacts.
- Design and construct the physical components of the I-C Project in conformance with industry and/or SCE's approved engineering, design, and construction standards for substation and subtransmission system projects.

As stated in EIR Section 1.2, for consideration in this EIR, the CPUC has defined three basic project objectives as follows:

- Rebuild or modify the subtransmission components of the existing I-C line segments so they are compliant with CPUC General Order 95, and they meet the reliability requirements defined in the NERC Facility Ratings.
- Design and construct the physical components of the I-C Project to meet current engineering, design, and construction standards for substation and subtransmission system projects.
- Continue to provide safe and reliable electrical service while minimizing environmental impacts.

The CPUC's basic project objectives are considered in the identification and screening of alternatives.

4.2.2. Feasibility

The CEQA Guidelines (Section 15364) define feasible as "...capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors." The alternative screening process is largely governed by what CEQA terms the "rule of reason," meaning that the analysis should remain focused, not on every possible eventuality, but rather on the alternatives necessary to permit a reasoned choice. Those alternatives that are potentially feasible, meet most of the project objectives, and would reduce significant impacts of the Proposed Project are fully analyzed in the EIR.

According to CEQA Guidelines Section 15126.6(f)(1), among the factors that may be considered when addressing the potential feasibility of alternatives include site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or other regulatory limitations, jurisdictional boundaries, and the project proponent's control over alternative sites. For the screening analysis, the potential feasibility of alternatives was assessed taking the following factors into consideration:

- **Legal Feasibility.** Does the alternative have the potential to avoid lands that have legal protection that may prohibit or substantially limit the feasibility of permitting a high-voltage transmission line? Lands that are afforded legal protections that would prohibit the construction of the project, or require an act of Congress for permitting, are considered less feasible locations for the project. These land use designations include wilderness areas, wilderness study areas, restricted military bases, airports, and Indian reservations. Information on potential legal constraints of each alternative has been compiled from laws, regulations, and local jurisdictions, as well as a review of federal, state, and local agency land management plans and policies.

- **Regulatory Feasibility.** Do regulatory restrictions substantially limit the likelihood of successful permitting of a high-voltage transmission line? Is the alternative consistent with regulatory standards for transmission system design, operation, and maintenance?
- **Technical Feasibility.** Is the alternative potentially feasible from a technological perspective, considering available technology? Are there any construction, operation, or maintenance constraints that cannot be overcome?
- **Regulatory Feasibility.** Is the alternative inconsistent with the adopted goals or policies of the CPUC or other applicable agency?
- **Economic Feasibility.** Is the alternative so costly that implementation would be prohibitive? The State CEQA Guidelines require consideration of alternatives capable of eliminating or reducing significant environmental effects even though they may "impede to some degree the attainment of the project objectives, or would be more costly" (CEQA Guidelines Section 15126.6(b)). The Court of Appeals determined in *Citizens of Goleta Valley v. Board of Supervisors* (2nd Dist. 1988) 197 Cal.App.3d 1167, p. 1181 (see also *Kings County Farm Bureau v. City of Hanford* (5th Dist. 1990) 221 Cal.App.3d 692, 736): "[t]he fact that an alternative may be more expensive or less profitable is not sufficient to show that the alternative is financially infeasible. What is required is evidence that the additional costs or lost profitability are sufficiently severe as to render it impractical to proceed with the project."
- **Environmental Feasibility.** Would implementation of the alternative cause substantially greater environmental damage than the Proposed Project, thereby making the alternative clearly inferior from an environmental standpoint?

4.2.3. Ability to Reduce or Avoid Significant Environmental Impacts

A key CEQA requirement for an alternative is that it must have the potential to "avoid or substantially lessen any of the significant effects of the project" (CEQA Guidelines Section 15126.6(a)).

At the screening stage, it is not possible to evaluate all of the impacts of the alternatives in comparison to the Proposed Project with absolute certainty, nor is it possible to quantify impacts. However, it is possible to identify elements of the Proposed Project that are likely to be the sources of impact and to relate them, to the extent possible, to general conditions in the subject area.

The following significant impacts were identified for the purposes of alternatives evaluation:

- **Aesthetics**: Significant effects due to presence of staging area and installation of larger and more visible multi-pole structures within the view of State designated Scenic Highway US 395.
- **Cultural Resources and Tribal Cultural Resources**: Construction of the Proposed Project would disturb or destroy a large number of cultural and Native American resources. Segment 1 of the existing subtransmission line passes directly through many highly sensitive cultural areas with a high density of resources important to Native American tribes consulting under AB 52.

4.2.4. Overview of Alternatives Considered

This section describes the alternatives identified by the Applicant, agencies, EIR preparers, and the public according to the determination made for analysis. Table 4-1 summarizes all alternatives considered and states whether each was retained for analysis or eliminated from detailed consideration. Section 4.3 describes alternatives evaluated in detail in this EIR, including the No Project Alternative, which is required to be analyzed pursuant to CEQA Guidelines Section 15126.6(e). Section 4.4 provides the justification for the alternatives considered but eliminated from detailed evaluation.

Table 4-1. Summary of Alternatives Considered

Alternative Name	Rationale
Alternatives Evaluated	
Crater Mountain Realignment Alternative	■ **CPUC Objectives:** Would meet all project objectives. ■ **Feasibility:** Technically feasible; would require land rights from LADWP. ■ **Impacts:** Avoids direct and indirect impacts to important cultural resources
Manzanar Realignment Alternative	■ **CPUC Objectives**: Would meet all project objectives. ■ **Feasibility**: Technically feasible; would require land rights from LADWP and rights to cross BLM lands. ■ **Impacts**: Avoids direct and indirect impacts to important cultural resources
Fossil Falls Realignment Alternative	■ **CPUC Objectives**: Would meet all project objectives. ■ **Feasibility**: Technically feasible; would require land rights from LADWP and rights to cross BLM lands. ■ **Impacts**: Avoids direct and indirect impacts to important cultural resources
No Project Alternative	■ **CPUC Objectives**: Required by CEQA Guidelines Section 15126.6(e); would not meet project objectives. ■ **Feasibility**: Feasible, although SCE would be in violation of the mitigation plan agreed to with WECC. ■ **Impacts**: Modifications of the existing electrical system defined for the Proposed Project and the associated impacts would not occur.
Alternatives Eliminated	
Randsburg Underground Alternative	■ **CPUC Objectives**: Would meet all project objectives. ■ **Feasibility:** Technically feasible. ■ **Impacts:** Would not reduce or avoid any significant impacts. No significant impacts occur in the area that would be avoided by the alternative.
Non-Wires Alternatives	■ **CPUC Objectives:** Would not meet project objectives. ■ **Feasibility:** Feasible, although SCE would be in violation of the mitigation plan agreed to with WECC. ■ **Impacts:** Modifications of the existing electrical system defined for the Proposed Project, and the associated impacts would not occur.
SCE Alternatives, (detailed in Section 4.4.3)	■ **CPUC Objectives:** Would not meet project objectives. ■ **Feasibility:** May be technically feasible. ■ **Impacts:** Limited or no potential to reduce or avoid environmental impacts.

4.3. Description of Alternatives Retained for Detailed Evaluation

Three route alternatives were retained for detailed analysis in this EIR and would replace segments for portions of the Proposed Project. The No Project Alternative is also analyzed, as required by CEQA, and is described in Section 4.3.4.

Each route alternative is described in this section, including discussion of the alternative's ability to meet project objectives, meet CEQA criteria for feasibility, and reduce or avoid significant effects. The impacts of each segment alternative are evaluated for each environmental issue area in Sections 4.8 through 4.10.

Route Alternatives. Figure 4-1 presents an overview map of the segment alternatives, and more detailed, individual maps of each alternative are included as defined below (all figures are at the end of this section). These three areas were chosen as alternatives due to their potential ability to avoid or minimize significant impacts to specific cultural and visual/aesthetic resources.

The three alternatives retained for EIR analysis are all located in Segment 1. They are:

- The Crater Mountain Realignment (14 miles long; see Section 4.3.1 and Figure 4-2)
- The Manzanar Realignment (29 miles long; see Section 4.3.2 and Figure 4-3)
- The Fossil Falls Realignment (16 miles long; see Section 4.3.3 and Figure 4-4)

LADWP transmission facilities are present throughout all three retained route alternatives; they include LADWP's 230 kV line (connecting the Barren Ridge and Inyo Substations) and the Pacific Direct Current Intertie (PDCI) line[1] to the Bonneville Power Authority (BPA). The 230 kV line is located on the east side of the LADWP transmission ROW, with the DC line on the west side. The LADWP 230kV line and DC line are separated by approximately 110 feet (center line to center line).

The approach to installation of I-C structures within LADWP's transmission ROWs in each of the alternative segments is assumed to be as follows:

- The I-C structures would be installed on the east side of the existing LADWP transmission lines, with a separation from the eastern LADWP structures of approximately 200 feet.
- The I-C structures are assumed to be the made up of the same styles as proposed for the I-C Segment 1. Individual lightweight steel (LWS) poles or tubular steel poles (TSPs) would make up about 85% of poles, with about 15% tubular steel poles in the multi-pole configuration.
- The I-C structures would be spaced approximately 700 feet apart along the alternative alignment, the average span length that is proposed for I-C Segment 1 currently.
- Pole height would vary based on topography and span length and would range from 65 to 140 feet.
- The existing LADWP access road would be used, with construction of spur roads from the LADWP access road to each I-C structure. Spur roads would be approximately 100-150 feet long at each tower structure.
- After installation and energization of the I-C structures in the LADWP ROW, SCE would remove approximately 58 miles of existing structures in the current SCE ROW, which is generally in close proximity to US 395. Impact analysis (Chapter 3 and 4) considers the effects of removal of these existing structures from the SCE ROW, as well as the construction of the new structures adjacent to the LADWP ROW.

In each case, the existing I-C line segment replaced by the realignment segment would be removed after the new line is constructed. No new structures would be constructed in the replaced segment of the existing ROW. In total, this would result in the elimination of 58.9 miles of existing ROW where the 115 kV structures are the only facilities. The alternative 115 kV line would be constructed adjacent to existing LADWP transmission facilities, using existing LADWP access roads with additional spur roads constructed to reach each new structure.

4.3.1. Crater Mountain Alignment Alternative

4.3.1.1. Alternative Description

The Crater Mountain Realignment Alternative would be approximately 14 miles long, replacing approximately 13.7 miles of the I-C ROW; see Figure 4-2. It would involve construction of the 115 kV I-C line in a location adjacent to the LADWP transmission structures, and removal of all existing structures in the current SCE ROW. This alternative would include installation of 13 TSPs, two multipole TSP structures, and 81 LWS poles. The northern terminus of the alternative is located at proposed Structure 171, approximately 3.3 miles south of Big Pine. The alternative would reconnect with the Proposed Project at proposed

[1] The PDCI carries hydropower generated on the Columbia River into California. It runs from Celilo, Oregon to Sylmar, California. In Nevada and California, the DC line is owned equally by Southern California Edison and the Los Angeles Department of Water and Power. Entities with transmission contracts include Pacific Gas & Electric, San Diego Gas and Electric and the California cities of Vernon, Pasadena, Burbank, Anaheim, Azusa, Banning, Colton, Riverside and Glendale (Northwest Power Planning Council 2001).

Structure 279C. The location of the Proposed Project as compared with the realignment segment is described as follows:

- This realignment segment does not pass through any developed communities, but there are isolated residences along the proposed and alternative corridors.
- The northern approximately 5 miles of the Proposed Project are located within one mile west of US 395. This segment of the Proposed Project passes through the Fish Springs area. In this segment, the Crater Lake Realignment Alternative would be 1 to 2 miles further west, resulting in a greater separation from US 395.
- The southern approximately 9 miles are located east of US 395 and are near Tinemaha Reservoir, then cross the Owens River in two locations. This 9-mile segment is very close to the Owens River, or within 0.25 miles of it. The proposed route is also in close proximity to the headgates of the LA Aqueduct.
- After the new line is constructed and energized on the alternative route, the entire existing subtransmission line would be removed. This would result in construction occurring in both the alternative and the existing ROWs, at different times.

4.3.1.2. Rationale for Retaining Crater Mountain Realignment Alternative

Ability to Meet Objectives. The alternative would meet all project objectives.

Potential Feasibility. SCE has indicated that the alternative is technically feasible. The alternative would require similar cost to construct as the Proposed Project. The alternative would require new easements, which would result in additional cost, but the cost would not prohibit implementation of the project. The alternative would require land rights from LADWP, which could result in delays in implementation, but are considered potentially feasible to obtain. The alternative meets all feasibility criteria for evaluation.

Impacts Reduced or Avoided. While requiring new construction adjacent to the LADWP transmission lines, this realignment segment would avoid new construction affecting cultural resources in the Fish Springs area. In this alternative, the existing 115 kV structures would be removed along an approximately 7-mile segment, where it closely follows the Owens River. Both the Proposed Project and the alternative segment would cross US 395 once in this segment. The increased distance of the alternative segment from US 395 and its consolidation with an existing transmission corridor containing two larger lines results in a potential beneficial visual impact.

4.3.2. Manzanar Realignment Alternative

4.3.2.1. Alternative Description

The Manzanar Realignment Alternative would be approximately 30 miles long and would replace approximately 29.4 miles of the Proposed Project. It would involve relocating the 115 kV I-C line from its current location in SCE ROW to a position immediately adjacent to the LADWP transmission lines (refer to Figure 4-3). This alternative would be located nearly entirely on land owned by LADWP, as is the portion of the Proposed Project that it would replace. The alternative crosses about 0.1 linear miles of BLM land. This alternative would require installation of 22 TSPs, 3 multipole TSP structures, 161 LWS poles for subtransmission, and 46 LWS poles for telecom.

The northern terminus of the alternative is located at proposed Structure 279C (adjoining the southern terminus of the Crater Mountain Realignment), approximately 9 miles north of the community of Independence. The alternative would cross Highway 136 southeast of the community of Lone Pine. The southern terminus of the alternative is proposed Structure 526. The alternative would be allocated as much as roughly 2.5 miles east of the Proposed Project alignment.

In scoping comments and meetings with the CPUC's cultural resources experts, the National Park Service at the Manzanar National Historic Site indicated concerns about the increased visibility of the slightly taller poles in the Manzanar National Historic Site. In this area, the LADWP corridor is nearly 2.5 miles east of the I-C line, so using the realignment alternative would substantially reduce visibility of the line in comparison with re-building the line at the current location. In this alternative, the Manzanar NHS may request that SCE retain (rather than remove) one or two existing transmission structures that are located within the viewshed of the NHS because these structures were within the viewshed at the time that Manzanar served as an internment facility (early 1940's) and are part of the historic viewshed.

The location of the Proposed Project as compared with the realignment segment is described as follows:

- Near the Manzanar National Historic Site, the existing I-C ROW is about 1 mile east of the Visitor Center (which is just west of US 395), and the alternative ROW is about 2.5 miles further east of the existing I-C ROW in this area. The alternative would also eliminate the existing ROW where it is located about 0.6 miles east of the historic Manzanar Airport and would move the ROW 2.5 miles further to the east.
- This realignment segment passes east of the communities of Independence and Lone Pine. The I-C ROW is about 1 mile east of downtown Lone Pine and US 395; the alternative ROW is about 1.3 miles further east of the existing I-C ROW in this area.
- The Manzanar Realignment Alternative would also require an extension of the Independence Telecommunications tap (see Section 2.2.1.2), which would connect to the Independence Amplifier Station. This would, extending it about 1.9 miles further east, following Mazourka Canyon Road to the east side of the LADWP corridor. This extension is assumed to be constructed in the same manner as the Proposed Project's telecommunications tap (see Section 2.2.3.1).

After the new line is constructed and energized on the alternative route, the entire existing subtransmission line would be removed. This would result in construction occurring in both the alternative and the existing ROWs, at different times.

4.3.2.2. Rationale for Retaining Manzanar Realignment Alternative

Ability to Meet Objectives. The alternative would meet all project objectives.

Potential Feasibility. Preliminary analysis of the route indicates that the alternative is technically feasible. The alternative would require similar cost to construct as the Proposed Project. The alternative would require new private easements, which would result in additional costs, but the cost would not prohibit implementation of the project. The alternative would require land rights from LADWP and rights to cross BLM lands, but these rights are potentially feasible to obtain. The alternative meets all feasibility criteria for evaluation.

Impacts Reduced or Avoided. The Manzanar Realignment Alternative would increase the distance between the transmission facilities and the Manzanar NHS, as well as from the towns of Independence and Lone Pine. This reduces the visibility of the project from those locations and reduces effects on the historic resources at Manzanar.

Both the Proposed Project and the alternative segment would be located east of US 395 throughout this segment. The increased distance of the alternative segment from US 395 and its consolidation with an existing transmission corridor containing two larger lines results in a beneficial visual impact, particularly on the Manzanar NHS.

4.3.3. Fossil Falls Realignment Alternative

4.3.3.1. Alternative Description

The Fossil Falls Realignment Alternative would be approximately 15.8 miles long and would replace approximately 15 miles of the Proposed Project; see Figure 4-4 (Fossil Falls Realignment Alternative). The northern end of the alternative would be located approximately 1.3 miles north of the Coso Substation, near Structure 815. The location of the alternative east of the Coso Substation (and no longer connected with the substation) would require construction of an approximately 0.5-mile long new 115 kV inter-connection with that substation from the alternative route. The alternative would be located east of and adjacent to two LADWP transmission lines and would reconnect with the Proposed Project route approximately 6 miles north of the community of Pearsonville at proposed Structure 936. At its greatest separation from the Proposed Project alignment, the alternative would be approximately 2 miles east of the Proposed Project alignment. This alternative would require installation of 28 TSPs, 19 multipole TSP structures, and 68 LWS poles.

The I-C ROW that would be replaced by this alternative closely follows the east side of US 395 and is highly visible from the highway in an area of dramatic scenic beauty and BLM conservation lands, including the Fossil Falls Campground, which is within the BLM Fossil Falls Area of Critical Environmental Concern (ACEC). The ACEC is designated for its volcanic rock formations, including cinder cone volcanoes and a lava flow that left a deep ravine of black lava that looks like an ancient waterfall (hence the name, Fossil Falls). The area also has a large number of cultural and historic sites.

The primary intent of this segment is to remove the I-C ROW from the forefront of the scenic views and move it out of areas with the most sensitive cultural and recreational sites. The line would be consolidated with the existing LADWP transmission line corridor, located nearly a mile east of the Fossil Falls Campground (whereas the existing ROW is between the campground and US 395).

The location of the Proposed Project as compared with the realignment segment is described as follows (from south to north):

- About 3.4 miles south of Little Lake, the alternative route would join the LADWP corridor where it moves to the top of the volcanic bluffs east of US 395. While this southern segment of the alternative would still be visible from US 395 and would be only about 0.5 miles east of the existing I-C ROW, the line would no longer be in the foreground of the views of the bluffs and Little Lake.
- Between Little Lake and the north end of this realignment segment, the LADWP corridor is located between 0.5 and nearly 2 miles east of the current I-C ROW, greatly reducing the visibility of the Fossil Falls Realignment Alternative from the highway.

At the Red Hill Cinder Cone, the existing I-C ROW is only about 500 feet east of US 395 and is highly visible in the foreground views of the cinder cone. The realignment would move the line about 1.75 miles east of the existing ROW at this point.

If this alternative is selected, constructed, and energized, the entire existing subtransmission line would be removed. This would result in construction occurring in both the alternative and the existing ROWs, at different times.

4.3.3.2. Rationale for Retaining Fossil Falls Realignment Alternative

Ability to Meet Objectives. The alternative would meet all project objectives.

Potential Feasibility. Preliminary analysis of the route indicates that the alternative is technically feasible. The alternative would require similar cost to construct as the Proposed Project. The alternative would require new private easements, but the cost of private easements is anticipated to be less than the cost of the Proposed Project. The alternative would require land rights from LADWP and rights to cross BLM

lands, but these rights are considered potentially feasible to obtain and are similar to the rights required for the Proposed Project. The alternative meets all feasibility criteria for evaluation.

Impacts Reduced or Avoided. This realignment segment would avoid the sensitive cultural resources in the Little Lake and Fossil Falls areas and would remove the existing 115 kV ROW from the foreground views from US 395 and Fossil Falls along the entire 15.4-mile length of this alternative segment.

4.3.4. No Project Alternative

Consideration of the No Project Alternative is required by Section 15126.6(e) of the CEQA Guidelines. The analysis of the No Project Alternative must discuss the existing conditions at the time the Notice of Preparation was published (August 2020), as well as: "what would be reasonably 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" [CEQA Guidelines Section 15126.6 (e)(2)]. CEQA also requires that: "If disapproval of the project under consideration would result in predictable actions by others, such as the proposal of some other project, this 'no project' consequence should be discussed" [CEQA Guidelines Section 15126.6 (e)(3)(B)].

4.3.4.1. SCE Discussion of the No Project Alternative

Under the No Project Alternative, the modifications of the existing electrical system included in the proposed I-C Project would not occur and the existing lines would continue to operate in their current condition. SCE's PEA did not identify any other actions that "would be reasonably expected to occur" in the absence of the Proposed Project. The description of the No Project Alternative provided by SCE the PEA is as follows:

> Under the No Project Alternative, no construction or modification of the existing electrical system would occur. Therefore, the No Project Alternative would not meet any of the Proposed Project's objectives. Further, under the No Project Alternative, SCE would be in violation of the mitigation plan agreed to with WECC. The No Project Alternative would also result in continuing discrepancies of CPUC GO 95 in Segments 3N and 3S. Thus, the No Project Alternative is not feasible as it could not be accomplished considering SCE's need to comply with CPUC GO 95.

As described by SCE, in the PEA and in Section 1, there is a well-defined need to implement the mitigation plan previously agreed to with the WECC and to improve the reliability of the I-C lines due to their age and deteriorated condition.

One 'no project' consequence could assume that SCE would take actions that are exempt from the CPUC's requirement to file an application for a PTC, as exemptions are identified in Section III.B.1 of CPUC General Order (GO) 131-E. Exempt actions may be regularly performed by SCE as part routine maintenance on the I-C lines to maintain reliability, but typically these activities do not remediate clearance discrepancies. Where feasible and exempt, SCE could use the following types of activities as typical clearance remediation techniques (SCE, 2021; Responses to ED-Data Request-010):

- Installing new structures between existing structures to reduce sag
- Pulling existing conductor tighter or increasing conductor tension to reduce sag
- Installing shorter suspension insulators to improve conductor ground clearance
- Derating conductor ampacity
- Replacing or raising selected existing structures
- Replacement of existing conductors
- Grading to improve ground clearance for conductors
- Lowering crossing wires to increase conductor spacing at line crossings

- Rebuilding line segments, where this would be an exempt action because of no likely significant effect on the environment
- Lowering existing underbuilds to increase conductor spacing along underbuilt corridors.

Exempt actions, as defined in GO 131-E, may not be implemented where any of the conditions specified in CEQA Guidelines Section 15300.2 are present. This exclusion ensures that, among other limitations, an exempt action cannot be undertaken if: "*there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances*." If any such conditions in CEQA Guidelines Section 15300.2 are present, SCE would have to obtain a PTC authorization from the CPUC to complete the remediations.

The range of predictable 'no project' consequences could also include targeted repairs to address problems on a case-by-case basis or in response to emergencies arising from the continuing discrepancies of the existing facilities. If the Proposed Project is not approved by the CPUC, it is reasonable to assume that SCE could be required to implement targeted upgrades in response to emergency situations. These upgrades would likely be narrower in scope than those anticipated with the Proposed Project; however, mitigation measures identified for the Proposed Project would not be adopted under the No Project Alternative.

4.3.4.2. No Project Alternative Scenario for this EIR

Based on the range of options described above, the analysis of the environmental effects of the No Project Alternative is based on the following description.

In the No Project Alternative, the modifications of the existing electrical system defined for the Proposed Project would not occur. In the absence of the physical modifications defined for the Proposed Project, SCE would be in violation of the mitigation plan agreed to with WECC. If the Proposed Project is not implemented, and an emergency arises as a result of the continuing discrepancies associated with the existing facilities or due to the age and condition of the existing infrastructure, SCE may have to replace individual structures or make other limited repairs in response to emergency conditions. Because SCE currently operates in this condition while pursuing the Proposed Project, the No Project Alternative represents no change from the routine maintenance activities performed by SCE in the existing conditions.

In the No Project Alternative, some of the isolated modifications of the existing electrical system included in the proposed I-C Project could be implemented as exempt actions. In these situations, SCE could implement these physical modifications to remediate discrepancies consistent with the exemptions identified in GO 131-E Section III.B.1. However, this type of modification would be challenging in areas with known sensitive resources (e.g., the cultural resources along portions of Segment 1). In these areas, modifications may not be possible without a formal application to the CPUC and CEQA documentation.

4.4. Alternatives Eliminated from Detailed Evaluation

A wide range of alternatives to the Proposed Project was considered in order to identify those that appear to be feasible and meet project objectives. These alternatives include those suggested by the public, alternatives developed by the CPUC as potential options, and alternatives defined in SCE's PEA (including the PEA alternatives retained and eliminated). Each potential alternative is described below and briefly evaluated for feasibility as an alternative, and the reasons each was not carried forward with a detailed evaluation are presented.

4.4.1. Randsburg Underground Alternative

The Randsburg Underground Alternative was suggested in public comments made to the BLM. The alternative would require the removal of approximately 8 existing 115 kV structures. The overhead line segment (about 0.75 mile long) would be replaced by an underground 115 kV segment, about 1.1 miles long, installed within paved roads through central Randsburg. Figure 4-5 shows the route of the

underground segment within paved roadways and the locations of the transition structures required at each end of the underground segment. Figure 4-6 illustrates the transition structure design.

The purpose of this alternative would be to minimize the views of the Proposed Project from the historic mining district. This alternative was eliminated from detailed evaluation because the CPUC's preliminary analysis of impacts indicates that the Proposed Project's replacement of 8 existing structures near the community of Randsburg would not result in any significant environmental impacts considered within the context of CEQA. The proposed replacement structures would be located in an area that is highly developed with transmission and electric distribution infrastructure and highly disturbed from historic and ongoing mining activities (SB Sun, 2022). The existing electricity infrastructure includes SCE's 220 kV transmission line, the existing I-C 115 kV line, numerous aboveground electric distribution lines, and the existing Randsburg Substation. Therefore, this alternative would not reduce any significant environmental impact, which is a requirement for CEQA consideration of alternatives. (See CEQA Guidelines Section 15126.6, subd. (b) ["…the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project"].)

In addition, there is an existing SCE 220 kV transmission line and associated structures running adjacent to the 115 kV I-C structures throughout the Randsburg area. The 220 kV structures are significantly taller and are visually dominant within the Randsburg viewshed. The 220 kV transmission line, the electric distribution lines, and the substation would not be modified by the Proposed Project or the alternative. Because the Proposed Project structures are smaller than the visually dominant 220 kV structures, the Proposed Project impact on the viewshed is not significant as viewed from Lexington Avenue in Randsburg. Figure 4-7a and Figure 4-7b shows the existing view of two I-C lattice steel structures (one at right just behind the white house, and one at upper left on the slope, below the 220 kV structure) and a simulation of that structure removed (in the underground scenario). Figures 3.2-24B and 3.2-24C (in Section 3.2, Aesthetics) present simulations of the tubular steel poles proposed by SCE for these locations.

As described in the following sections, the impacts associated with removing the existing structures and constructing the underground line including road closures, and installation of large transition structures would result in impacts that would be more severe than those of the Proposed Project.

4.4.1.1. Impacts of Undergrounding

The potential alternative would require removal of a segment of the existing overhead 115 kV subtransmission line, and installation of these conductors underground within Butte Avenue (the main street through Randsburg). The potential impacts of the underground alternative that would not occur with the Proposed Project include those defined below.

Cultural Resources. The Randsburg Mining District is registered as a State Historical Landmark (OHP, 2025). The Yellow Aster (or Rand) mine was discovered in April 1895, and the town of Randsburg quickly developed, followed by the supply town of Johannesburg in 1896. The Kelly Silver Mine and Johannesburg Area Mines were also developed after the initial discovery. A year later, the town of 1,500 had been renamed "Randsburg." Saloons sprouted, a U.S. Post Office was established, and the community's first newspaper, "The Randsburg Miner," appeared. In 1919, mining started at the California Rand Silver Mine at Red Mountain. At the turn of the century, when gold was worth only $12 to $16 an ounce, Randsburg's Yellow Aster Mine recovered $3 million in gold. In 1911, the take was $6 million. Most of the visible, or "free gold," in the Rand Mining District had already been found before WWII (HMdb.org, 2025).

As a result of the long history of mining activity, trenching may encounter historic material and human remains covered under the National Historic Preservation Act (NHPA). The haphazard nature of town development, and the fire that burned much of the town in 1889, makes it likely that subsurface historic features exist within this alignment. Each resource requires evaluation for its potential eligibility for the California Register of Historic Places.

Hazardous Materials. The BLM is conducting mining complex cleanup activities in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA). As defined in the "Community Involvement Plan, Rand Historic Mining Complex" (Applied Intellect, 2023), the mining activity that has been ongoing since 1895 has resulted in contaminated drinking water (high levels of arsenic and other chemicals[2]) and soil contamination due to disposal of mine spoils. The BLM identified evidence of contamination in 2006, including windblown tailings from the mines surrounding Randsburg that contained very concentrations of arsenic. According to the 2023 Community Involvement Plan, feasibility studies for remediation of contaminants were conducted in 2012 and 2013.

The trenching required for installation of an underground 115 kV conduit will first require completion of testing for potential mining related contamination. On-going studies of potential contamination in this area indicate a high likelihood that this contamination exists in soils that would be disturbed during trenching. As stated in the 2023 report prepared for the BLM:

> Descarga is situated north of the Yellow Aster Projects' Yellow Aster Pit on public lands. … A Preliminary Assessment conducted by the BLM from 2006 to 2007 found Descarga mine tailings to have elevated concentrations of arsenic. Some environmental samples collected from Descarga show arsenic concentrations of greater than 10,000 parts per million (or milligrams per kilogram [mg/kg]), several orders of magnitude higher than typical health-based screening levels. In addition, tailings with elevated arsenic concentrations become airborne during periods of high wind and are transported to adjacent areas, including the town of Randsburg.
>
> Contaminated tailings are transported to Randsburg through airborne migration pathways during periods of high wind and during recreational activities such as OHV use. The removal preliminary assessment also identified potential respiratory exposure risk through the airborne migration pathway.
>
> The removal preliminary assessment identified potentially significant human health exposure risks because of both local residents' and recreationists' heavy use of the site.
>
> However, it should be noted that in support of the HHRA, a biomonitoring study was completed in which urine samples were collected from volunteers residing in the vicinity of the RHMC. Results of this biomonitoring study failed to demonstrate over-exposure to arsenic in a representative sample of adults living in the RHMC.
>
> Overall, the HHRA indicated unacceptable risk at the RHMC under these exposure scenarios in all three [study areas] when compared against commonly used benchmarks for the acceptability of risk. (Applied Intellect, 2023)

In addition to concerns about public health of community members from disturbance of contaminated soils, construction workers would be at risk of inhaling or coming into contact with these sediments. Finally, construction timelines and methods may be affected by the testing required for and the presence of contaminated soils.

Transportation. Trenching and related activities may require road closure for an unknown period of time. Alternative routes are limited, and active trenching could prevent access to stores or homes during construction periods. Road closure could result in economic impacts, loss of visitor and resident experiences during construction and reclamation.

Emergency Services. Road closures in the Randsburg area could constrain emergency services during construction because access to the town is limited and the underground line would be installed in the

[2] Arsenic minerals associated with these ores can be present as the arsenic sulfides realgar and orpiment, elemental arsenic, or arsenic-enriched sulfide (pyragyrite) (Applied Intellect, 2023)

main road. Fire and ambulance service response times may be increased due to the need to use alternate routes. If evacuation were required during construction, the process could be hindered by the need to use alternate routes and smaller roads.

Air Quality and Greenhouse Gasses. Trenching requires loud equipment and will create both dust and additional vehicle emissions. These noise and air emissions would be substantially greater than those required for the replacement of individual towers.

Aesthetics. The simulation presented in Figure 4-7a and Figure 4-7b show the existing view and a simulation of that view of the existing ROW from Randsburg if the subtransmission line were installed underground. The only visible evidence of the Project would be the surface land scar of the cleared ROW for the buried transmission line. The land scar would be a noticeable feature in the landscape and would exhibit a low to moderate degree of form and line contrast resulting from the unnatural linear demarcation in the vegetation bordering the cleared ROW. Also, the exposed soils would result in low to moderate color contrast with the adjacent vegetation and undisturbed soils. The overall visual contrast would be low to moderate. The noticeable, linear form of the cleared ROW and exposed soils would appear subordinate relative to the adjacent landscape features. Although some vegetation would be removed during Project installation, the cleared ROW would not cause view blockage of any landscape features, and it can be anticipated that some vegetative recruitment would occur along the cleared ROW over time.

The simulations of the views of the Proposed Project are presented in Figures 3.2-24B and 3.2-24C (presented at the end of EIR Section 3.2, Aesthetics). As shown in the simulations, the Proposed Project's tubular steel pole structures would be more massive than the existing lattice structures, so the project would result in a modified visual character of the Randsburg area.

An underground option would reduce the visual contrast in the Randsburg area due to the retention of the subtransmission lines in an overhead configuration. However, as described in Section 3.2.3.4 (Aesthetics) under the heading **KOP 2-4** (Lexington Avenue in Randsburg), the analysis of the Proposed Project through Randsburg concludes that the Proposed Project's visual effect would be less than significant, as compared with the existing setting. This is because the overall level of visual change would be low to moderate and in the context of the existing landscape's moderate to high visual sensitivity.

4.4.1.2. Conclusion Regarding Randsburg Underground Alternative

Screening indicates that this alternative should be eliminated from detailed evaluation in the EIR, as follows:

- **Ability to Meet Objectives.** The alternative would only partially meet project objectives because it would introduce additional impacts.
- **Potential Feasibility.** The alternative is potentially feasible.
- **Impacts Reduced or Avoided.** The impacts would be more significant under this alternative when compared to the Proposed Project.

Because the Proposed Project would not result in significant environmental effects in Randsburg, this alternative is not evaluated. In addition, the potential impacts of the proposed Randsburg Underground Alternative appear to outweigh those of the Proposed Project.

4.4.2. Non-Wires Alternatives

When new transmission or subtransmission lines are proposed, the CPUC often evaluates an alternative that would avoid the construction of the new line by using other energy management techniques. This is called the "Non-Wires Alternative." This is defined as follows: "… an electricity grid investment or project that uses non-traditional transmission and distribution (T&D) solutions, such as distributed generation (DG), energy storage, energy efficiency (EE), demand response (DR), and grid software and controls, to

defer or replace the need for specific equipment upgrades, such as T&D lines or transformers, by reducing load at a substation or circuit level."[3]

The Proposed Project would modify existing subtransmission facilities, rather than establish a new line. This limits the range of non-wires solutions to those that can maintain service to the generation projects that inject power to SCE's system while also continuing to serve existing customer loads. For example, energy efficiency, demand response, and distributed energy resources would not remediate the existing discrepancies. These solutions could reduce line loading, however SCE notes that most of the existing discrepancies exist even under no load conditions (SCE, 2020b; Responses to ED-Deficiency Letter-002, Transmittal 4, Response Date: 10/30/2020).

Options for modifying the existing lines were developed by SCE, and these appear in the PEA as different types of corrective actions that could be implemented for the individual line segments. Removing existing lines and other options to remediate the discrepancies while continuing to serve generation and customer loads are detailed as SCE Alternatives, in Section 4.4.3. SCE also considered both installation of energy storage and line derating; see Sections 4.4.3 and 4.4.3.4 respectively, under SCE Alternatives.

Non-wires alternatives are eliminated from detailed evaluation in the EIR for the following reasons:

- **Ability to Meet Objectives.** The alternative would not meet project objectives for ensuring compliance with current standards and reliability requirements or providing safe and reliable service.
- **Potential Feasibility**. The alternative would be potentially feasible, but SCE would be in violation of the mitigation plan agreed to with WECC.
- **Impacts Reduced or Avoided.** Modifications of the existing electrical system defined for the Proposed Project, and the associated impacts would not occur.

Because the Proposed Project would result in reliability upgrades to existing lines that serve communities along its length, the implementation of non-wires alternatives would not meet project objectives. Therefore, non-wires alternatives would not meet CEQA requirements for evaluation in the EIR.

4.4.3. SCE Alternatives

A range of alternatives developed by SCE were presented in PEA Section 5.2.2. The PEA presents discussion of several alternatives involving the following 6 types of corrective actions for the individual line segments that comprise the I-C Project:

- Decommission and remove existing lines
- Increase operating voltage for Segment 2
- Install energy storage
- Derate lines only
- Reconductor and remediate remaining GO 95 discrepancies
- Derate and remediate remaining GO 95 discrepancies

Each of these corrective actions could form the basis for potential alternatives to some project components. This section discusses how each alternative could be implemented within each of the individual line segments of the I-C Project. While each option may be technically feasible, the SCE alternatives would either create more severe impacts than the Proposed Project or would not meet project objectives. Therefore, all SCE alternatives considered were eliminated from detailed evaluation. Additional details on each alternative considered and the basis for rejection of the alternative from consideration in the EIR are provided below.

[3] Navigant Research, "Non-wires Alternatives: Nontraditional transmission and distribution solutions", 2017

4.4.3.1. Decommissioning and Removal

SCE considered the potential for decommissioning the existing subtransmission lines included under the I-C Project as part of a range of possible corrective actions. Under the decommissioning and removal alternative, the existing subtransmission infrastructure would be deenergized and removed. No replacement infrastructure would be installed.

Decommissioning and removal of the existing subtransmission lines would not meet project objectives and would not meet criteria for regulatory feasibility because the existing 115 kV facilities provide the only electric service to local loads from several substations. Therefore, portions of the Owens Valley would be left without power. These lines also integrate generation from various hydroelectric, geothermal, solar and conventional power plants in the region; therefore, it would be inconsistent with state policy to remove lines from service that are supportive of delivering power flow from renewable energy zones. The alternative was rejected because it does not meet CEQA requirements for evaluation in the EIR.

4.4.3.2. Increase Operating Voltage for Segment 2

This alternative includes increasing the operating voltage of existing subtransmission in Segment 2 and relying upon a portion of the existing 220 kV transmission lines under CAISO control. The existing Kramer-Inyokern-Randsburg No. 3 115 kV subtransmission line is mostly constructed to a 220 kV design standard; converting this line to 220 kV could offset the reduced transmission capacity from removal of one I-C circuit in Segment 2. This potential alternative could allow for removal of the 48-mile-long Kramer-Inyokern-Randsburg No. 1 115 kV subtransmission line in Segment 2, thus avoiding the proposed full teardown and rebuild of this segment.

SCE found that this option would require construction of a new 220 kV switchyard, transformer banks, and other high-voltage components at or near the existing Randsburg Substation. This would cost approximately three times as much as rebuilding Segment 2 due to the additional substation facilities that would be needed to continue providing service to loads and generation. Adding a new 220 kV switchyard and other components would increase environmental impacts by requiring substantially more ground disturbance for the new switchyard and installing new highly visible switchyard components and access roads/gates in the historic Randsburg setting. Ground disturbance for a new switchyard would likely disturb historic era cultural resources and could also mobilize buried contaminants from historic mining activity. In addition, SCE stated that the additional costs would be impractical. Therefore, this alternative would not meet CEQA requirements for evaluation in the EIR.

4.4.3.3. Install Energy Storage

SCE considered an energy storage alternative that would involve installing additional energy storage to reduce the loading of the existing subtransmission lines. Adding storage, or other distributed energy resources solutions could reduce line loading during times of charging the storage, however SCE notes that most of the existing discrepancies exist even under no load conditions (SCE, 2020b; Responses to ED-Deficiency Letter-002, Transmittal 4, Response Date: 10/30/2020). This option would not meet project objectives because it would not eliminate the clearance discrepancies along the various subtransmission segments of the I-C Project. Because additional actions would be necessary to meet CPUC and NERC criteria for safe and reliable operation of the subtransmission lines, this alternative would therefore not meet CEQA requirements for evaluation in the EIR.

4.4.3.4. Derate Lines Only

SCE considered the potential for derating[4] the subtransmission lines (without any accompanying upgrades) to facilities included in the I-C Project as a means to remediate existing discrepancies. Operating a subtransmission line at a lower (derated) amperage reduces the maximum operating temperature at which the conductors that comprise these circuits operate. The reduction in the operating temperature would cause the conductors to 'sag' less; that is, the distance between the ground and the conductor would be increased. Therefore, some existing discrepancies along a subtransmission line can be remediated purely by operating the line at a lower amperage.

SCE concluded that derating alone, without additional upgrades to the system facilities in Segments 1, 2, 3N, and 3S, would not meet project objectives because clearance discrepancies would remain, and additional actions would still be necessary in order to meet CPUC and NERC criteria for safe and reliable operation of the subtransmission lines. The derating alternative would therefore not meet CEQA requirements for evaluation in the EIR.

4.4.3.5. Reconductor and Remediate Remaining GO 95 Discrepancies in Segments 1 and 2

During initial project design, SCE considered reconductoring existing subtransmission lines, without replacing the structures. This would result in installation of new conductor on existing pole and tower structures in a manner that eliminates the existing line clearance issues. SCE considered reconductoring the existing subtransmission lines with both standard conductors and with high-temperature low-sag conductors that are proposed to be installed on Segments 1, 2, 3N, and 3S.

For Segments 1 and 2, SCE found that the use of high-temperature low-sag conductor on existing structures would leave a substantial number of discrepancies un-remediated and would place greater stresses on the existing, aged structures. For Segments 3N and 3S, SCE found this approach feasible, and it is included in the Proposed Project for these segments.

The reconductor and remediate alternative in Segments 1 and 2 would not meet project objectives because it would not meet CPUC and NERC criteria for safe and reliable operation of the subtransmission lines. The reconductor and remediate alternative would therefore not meet CEQA requirements for evaluation in the EIR.

4.4.3.6. Derate and Remediate Remaining GO 95 Discrepancies

SCE considered the potential for derating the subtransmission lines included in the I-C Project while committing to implementing the additional upgrades to remediate the discrepancies after derating the lines.

For Segments 1 and 2, SCE found this option to be infeasible as it would effectively result in a rebuild of these corridors (as defined in the Proposed Project), resulting in no potential to reduce or avoid environmental impacts. Derating and remediating in Segments 1 and 2 would therefore not meet CEQA criteria for consideration in the EIR.

The existing 115 kV subtransmission line in Segment 3N or Segment 3S could be derated and partially remediated, with the rebuild of the other corridor in the form of a double-circuit line. For example, this corrective action in Segment 3N would require a new double-circuit line to be constructed next to the existing single-circuit line in Segment 3S to minimize outage requirements. Construction of a new double-circuit line in either corridor for Segment 3N or Segment 3S would effectively rebuild one of these corridors. Compared with the Proposed Project, which is limited to reconductoring Segments 3N and 3S, this option would entail much more intensive construction in one of the two corridors, while still requiring some remediation of the derated line. Accordingly, the options of derating and remediating either Seg-

[4] Derating means to operate a subtransmission line at a lower (derated) amperage, which would reduce the maximum operating temperature and result in reduced conductor sag.

ments 3N or 3S would be likely to result in greater impacts than the Proposed Project. Because derating the line in Segment 3 would not reduce or avoid a significant environmental impact, the alternative does not meet CEQA criteria for consideration in the EIR.

4.5. Comparison of Alternatives

Requirements for alternatives comparison are provided in CEQA Guidelines Section 15126.6(d):

> 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.

CEQA also requires an EIR to identify an "environmentally superior" alternative. If the environmentally superior alternative is the No Project Alternative, CEQA Guidelines Section 15126.6(e)(2) requires identification of an environmentally superior alternative among the other alternatives.

4.5.1. Comparison of the Proposed Project with the Realignment Alternatives

The impacts of the Proposed Project are described in Chapter 3. Alternatives fully analyzed in this EIR are defined in Section 4.3, and their impacts are analyzed in Sections 4.8 through 4.11. This comparison of alternatives focuses on the environmental disciplines for which the impacts would be substantially different between the alternative and the Proposed Project segment that the alternative would replace. In the case of the remaining discipline areas, the analysis of alternatives in Section 4.8 through Section 4.11 indicated no appreciable difference from the Proposed Project. These discipline areas are listed below and are not discussed in further detail.

- Agriculture and Forestry
- Air Quality
- Energy
- Greenhouse Gas Emission
- Land Use and Planning
- Noise
- Population and Housing
- Public Services
- Recreation (addressed only for Crater Mountain Alternative)
- Transportation
- Utilities and Service Systems
- Wildfire

Each of the realignment alternatives would replace only a specific, unique portion of the Proposed Project (i.e., no alternatives overlap with each other, and therefore, they are not mutually exclusive). As a result, the alternatives cannot be compared with each other. Each alternative is compared only with the portion of the Proposed Project that it would replace. Tables 4-3 through 4-4 define the severity of the impacts of the Proposed Project (within the segment that each alternative would replace) and for each alternative segment.

One important consideration in the comparison is consideration of the two locations of construction activity required to implement an alternative. If an alternative is selected, the process would be as follows:

- First, the new 115 kV subtransmission line would be constructed adjacent to the existing 230 kV alternating current (AC) and the 500 kV direct current (DC) LADWP transmission lines (all realignment alternatives would be installed on the east side of the existing LADWP transmission lines).
- Next, the existing 115 kV subtransmission lines would be removed from the existing ROW, requiring ground disturbance and restoration activity along that separate ROW.

Because ground disturbance would occur in two separate rights-of-way if the alternatives are implemented, the alternatives would result in more ground disturbance than would the Proposed Project, as illustrated in Table 4-2.

Table 4-2. Ground Disturbance for Alternatives as Compared with Proposed Project Segments

Alternative Name	Ground Disturbance: Proposed Project Segment	Ground Disturbance: Alternative Segment
Crater Mountain Realignment Alternative	113 acres	159 acres (40% more than proposed)
Manzanar Realignment Alternative	225 acres	390 acres (73% more than proposed)
Fossil Falls Realignment Alternative	117 acres	228 acres (95% more than proposed)
Total: All Alternatives	**455 acres**	**777 acres (71% more than proposed)**

Because multiple impacts are addressed within each discipline's analysis, this summary presents the most severe impact conclusion for each discipline (explained in the "Key Considerations" column). Table 4-3 compares the impacts of the Proposed Project to the Crater Mountain Realignment Alternative. Table 4-4 compares the impacts of the Proposed Project to the Manzanar Realignment Alternative. Table 4-5 compares the impacts of the Proposed Project to the Fossil Falls Realignment Alternative. Where the tables identify the impact severity conclusion for each alternative, they also state whether the impacts of each alternative would be *Greater*, *Similar to*, or *Less* than those of the Proposed Project.

Table 4-3. Summary Comparison of Impacts: Proposed Project and Crater Mountain Realignment Alternative

Environmental Discipline	Prop. Project: Segment 1	Crater Mountain Realignment Alt.	Key Considerations
Aesthetics	S/U	S/U (Less)	■ **Long-term effects ongoing throughout operation:** The alternative eliminates Significant and Unavoidable impact of the Proposed Project on scenic highway US 395 (Impact AE-2). ■ **Short-term effects primarily during construction:** The temporary yet Significant and Unavoidable impact of the use of Material Yard 1-7 would apply to both the alternative and the Proposed Project (Impact AE-2).
	LTS	Beneficial (Less)	■ **Long-term effects ongoing throughout operation:** The alternative would result in a long-term beneficial aesthetics impact due to removal of existing structures along about 8 miles, where the Proposed Project would be in closer proximity to scenic highway US 395 (Impact AE-3)
Biological Resources	LSM	LSM (Less)	■ **Long-term effects ongoing throughout operation:** The alternative would be located farther from the Owens River and Tinemaha Reservoir and would avoid two Owens River crossings required for the Proposed Project, reducing the risk of avian collision (Impact BIO-6)
	LSM	LSM (Greater)	■ **Short-term effects primarily during construction:** The alternative would result in more ground disturbance due to construction required in two ROWs (installation in alternative ROW; removal in existing ROW; Impact BIO-1)
Cultural Resources	S/U	S/U	■ **Short-term effects during construction of the alternative segment and removal of the structures on the existing alignment:** Construction of the alternative could affect 41 eligible resources, compared with 28 impacted by the Proposed Project segment. If none of the resources along the either route can be avoided during removal of existing structures, all 69 resources could be affected by alternative route selection (Impact CUL-1). ■ **Long-term benefit** resulting from the abandonment of nearly 14 miles of the existing ROW. After structure removal, no

Environmental Discipline	Prop. Project: Segment 1	Crater Mountain Realignment Alt.	Key Considerations
			operations and maintenance activities would occur along these access roads and structure, providing a long-term reduction in disturbance of a portion of the Owens Valley that has a high concentration of archaeological and historic-era resources.
Tribal Cultural Resources	S/U	S/U (Less)	▪ **Long-term effects ongoing throughout operation:** Consulting tribes stated a preference for the alternative due to avoidance of sensitive areas (Impact TCR-1). ▪ **Long-term benefit** resulting from the abandonment of nearly 14 miles of the existing ROW. After structure removal, no operations and maintenance activities would occur along these access roads and structure, providing a long-term reduction in disturbance within the Owens Valley Landscape.
Geology, Soils, Paleontology	LSM	LSM (Greater)	▪ **Short-term effects primarily during construction:** The alternative would result in greater potential for soil erosion due to access and construction in two separate ROWs (Impact GSP-2).
Hydrology, Water Quality	LSM	LSM (Greater)	▪ **Short-term effects primarily during construction:** The alternative would result in greater potential for erosion and siltation due to construction in two separate ROWs (Impact HW-1).
Recreation	LSM	LSM (Greater)	▪ **Short-term effects primarily during construction:** The alternative would result in direct effect on Taboose Creek Campground, potentially requiring facility relocation (Impact REC-1).

Notes:
S/U = Significant, Unavoidable. **NI** = No Impact.
LSM = Less than Significant with Mitigation. **B** = Beneficial
LTS = Less than Significant.

Table 4-4. Summary Comparison of Impacts: Proposed Project and Manzanar Realignment Alternative

Environmental Discipline	Prop. Project: Segment 1	Manzanar Realignment Alt.	Notes
Aesthetics	LTS	Beneficial (Less)	▪ **Long-term effects ongoing throughout operation:** While not eliminating any significant impacts of the Proposed Project, the alternative would result in beneficial impact due to permanent removal of existing structures in proximity to scenic highway US 395. The alternative also would move the structures 2.5 miles further east from the Proposed Project's location, which is about 1 mile east of the Manzanar National Historic Site (Impacts AE-2, AE-3).
Biological Resources	LSM	LSM (Greater)	▪ **Short-term effects primarily during construction:** Construction of towers in or near the Owens River increase impacts to jurisdictional wetlands and/or waters (Impact BIO-3).
	LSM	LSM (Greater)	▪ **Short-term effects primarily during construction:** The alternative would result in more ground disturbance due to construction required in two ROWs (installation in alternative ROW; removal in existing ROW; Impact BIO-1)
Cultural Resources	S/U	S/U	▪ **Short-term effects primarily during construction:** Construction of the alternative could affect 87 eligible resources, compared with 57 on the Proposed Project segment avoided. If none of the resources along the Proposed Project route can be avoided during structure removal, then all 144 resources could be affected by alternative route selection (Impact CUL-1). ▪ **Long-term benefit** resulting from the abandonment of over 29 miles of the existing ROW. After structure removal, no operations and maintenance activities would occur along these access roads, providing a long-term reduction in disturbance of

Environmental Discipline	Prop. Project: Segment 1	Manzanar Realignment Alt.	Notes
			a portion of the Owens Valley that has a concentration of archaeological and historic-era resources.
Tribal Cultural Resources	S/U	S/U (Less)	■ **Long-term effects ongoing throughout operation:** Consulting tribes stated a preference for the alternative due to avoidance of sensitive areas, including one large area of extreme sensitivity (Impact TCR-1). ■ **Long-term benefit** resulting from the abandonment of over 29 miles of the existing ROW. After structure removal, no operations and maintenance activities would occur along these access roads, providing a long-term reduction in disturbance within the Owens Valley Landscape and avoiding disturbance of an area of extreme sensitivity to Tribes (Impact TCR-1).
Geology, Soils, Paleontology	LSM	LSM (Similar)	■ **Short-term effects primarily during construction:** The alternative would result in greater potential for soil erosion due to access and construction in two separate ROWs (Impact GSP-2).
Hydrology, Water Quality	LSM	LSM (Similar)	■ **Short-term effects primarily during construction:** The alternative would result in greater potential for erosion and siltation due to construction in two separate ROWs (Impact HW-1).

Notes:
S/U = Significant, Unavoidable. **NI** = No Impact.
LSM = Less than Significant with Mitigation. **B** = Beneficial
LTS = Less than Significant.

Table 4-5. Summary Comparison of Impacts: Proposed Project and Fossil Falls Realignment Alternative

Environmental Discipline	Prop. Project: Segment 1	Fossil Falls Realignment Alt.	Notes
Aesthetics	LTSM	Less (Beneficial)	■ **Long-term effects ongoing throughout operation.** While the Proposed Project in this area would not result in a significant visual impact (with implementation of Mitigation Measure AE-3a), the alternative would result in a beneficial impact due to permanent removal of existing structures in proximity to scenic views of The Narrows, Little Lake, the Saltlake Cinder Cone, and the Fossil Falls Campground and trails (Impact AE-3).
Biological Resources	LSM	LSM (Less)	■ **Long-term effects ongoing throughout operation.** ■ Proposed Project structures within and adjacent to Little Lake and wetlands would be removed, resulting in reduced permanent impacts to jurisdictional wetlands and/or waters (Impact BIO-3). ■ The alternative would eliminate the crossing of Little Lake, a stopover for migratory birds along the Pacific Flyway. The alternative would result in the new structures being installed about 0.5 miles east, to the existing LADWP transmission corridor, reducing the risk of bird collision (Impact BIO-6).
	LSM	LSM (Greater)	■ **Short-term effects primarily during construction:** The alternative would result in more ground disturbance due to construction required in two ROWs (installation in alternative ROW; removal in existing ROW; Impact BIO-1)
Cultural Resources	S/U	S/U	■ **Short-term effects primarily during construction:** Construction of the alternative could affect 51 eligible resources, compared with 70 on the Proposed Project segment avoided. If none of the resources along the Proposed Project route can be avoided during structure removal, then all 121 resources could be affected (Impact CUL-1). ■ **Long-term benefit** resulting from the abandonment of nearly 16 miles of the existing ROW. After structure removal, no operations and maintenance activities would occur along these

Environmental Discipline	Prop. Project: Segment 1	Fossil Falls Realignment Alt.	Notes
			access roads, providing a long-term reduction in disturbance of a portion of the Owens Valley that has a concentration of archaeological and historic-era resources.
Tribal Cultural Resources	No preference	No preference	■ **No preference** between the proposed and alternative segments was stated by consulting tribes (Impact TCR-1). ■ **Long-term benefit** resulting from the abandonment of nearly 16 miles of the existing ROW. After structure removal, no operations and maintenance activities would occur along these access roads, providing a long-term reduction in disturbance within the Owens Valley Landscape (Impact TCR-1).
Geology, Soils, Paleontology	LSM	LSM (Similar)	■ **Short-term effects primarily during construction:** The alternative would result in greater potential for soil erosion due to access and construction in two separate ROWs (Impact GSP-2).
Hydrology, Water Quality	LSM	LSM (Similar)	■ **Short-term effects primarily during construction:** The alternative would result in greater potential for erosion and siltation due to construction in two separate ROWs (Impact HW-1).

Notes:
S/U = Significant, Unavoidable. **NI** = No Impact.
LSM = Less than Significant with Mitigation. **B** = Beneficial
LTS = Less than Significant.

4.5.1.1. Key Environmental Advantages of Alternatives

Following are the environmental advantages of the three realignment alternatives:

- One clear advantage for all three of the realignment alternatives is the long-term permanent benefit to the aesthetic environment. Each alternative would result in the ultimate removal of the existing I-C facilities, which closely follow US 395 through a total of nearly 60 miles in the scenic Owens River Valley (Impact AE-2 and AE-3).
- The elimination of subtransmission facilities along nearly 60 miles of the existing ROW and ceasing use of existing access roads for installation and maintenance within these segment would consolidate electric transmission facilities in a single corridor, reducing ongoing effects on cultural and tribal cultural resources in the highly sensitive Owens Valley (Impacts CUL-1, TCR-1).
- The Crater Mountain Realignment Alternative would be located farther from the Owens River and Tinemaha Reservoir and would avoid two Owens River crossings required for the Proposed Project, reducing the risk of avian collision (Impact BIO-6).
- The Fossil Falls Realignment Alternative would eliminate structures from within and adjacent to Little Lake and wetlands would result in reduced permanent impacts to jurisdictional wetlands and/or waters (Impact BIO-3). This alternative would also eliminate the existing crossing of Little Lake, a stopover for migratory birds along the Pacific Flyway, reducing the risk of bird collision (Impact BIO-6).
- Consulting Native American tribes stated strong preferences for the Manzanar and Crater Mountain Realignment Alternatives because they would avoid resources important to the tribes (Impact TCR-1).

These impacts are long-term and permanent.

4.5.1.2. Key Environmental Advantages of the Proposed Project

Following are the environmental advantages of the Proposed Project, when compared with the alternatives:

- Table 4-2 shows that the ground disturbance associated with the construction of the alternatives would be about 44% greater than that required for the Proposed Project. This is because the existing older

structures would have to be removed (from the existing ROW) after installation of the new structures. However, after structure removal, this nearly 60-mile ROW segment would no longer be used.

- There are about 15% more cultural resources eligible for the CRHR along the three alternative routes than on the Proposed Project route. Both the Proposed Project and the realignment alternatives would be constructed through the highly sensitive Owens River Valley, where cultural and tribal cultural resource impacts would remain significant even with implementation of all mitigation.

These impacts are primarily associated with construction and are considered short-term.

4.5.1.3. Conclusion of Comparison

The replacement of all three Proposed Project segments with all three realignment alternatives would be preferred from an environmental perspective, due to the greater importance of long-term impacts (in aesthetics, biological resources, and tribal cultural resources) over impacts associated with construction and demolition only. Therefore, the Crater Mountain, Manzanar, and Fossil Falls Realignment Alternatives are preferred to the Proposed Project segments that these alternatives would replace.

4.5.2. Comparison of the Proposed Project with the No Project Alternative

The No Project Alternative would result in avoidance of the concentrated short-term construction impacts of replacing all subtransmission facilities in Segments 1 and 2, and replacement of isolated facilities along Segments 3N and 3S on the schedule defined in Chapter 2. However, the No Project Alternative would result in the need to replace individual facilities on an as-needed basis, resulting in similar, but less efficient, replacement of facilities, which would be completed without implementation of the mitigation measures defined in this EIR.

The No Project Alternative would also leave the existing subtransmission facilities in their current locations, so all individual structures requiring safety or reliability improvements would be made in their current locations. This would not achieve the benefits of moving facilities out of the very sensitive cultural, tribal, and scenic areas that would be avoided by the three realignment alternatives.

In addition, the No Project Alternative would not meet any of the project objectives defined in Section 4.2.1. These important objectives include improved reliability of the electricity system, design upgrades, and improvements in safe operations. Therefore, the Proposed Project with inclusion of the three realignment alternatives would have fewer impacts than the No Project Alternative and meet all objectives.

4.6. Environmentally Superior Alternative

Section 15126.6 of the State CEQA Guidelines requires an EIR identify an “environmentally superior” alternative. If the No Project Alternative is defined as the environmentally superior alternative, then the EIR must identify which of the other alternatives is environmentally superior.

As described in Section 4.11, the No Project Alternative does not present environmental advantages over the Proposed Project. The Proposed Project with inclusion of the three realignment alternatives is preferred over the project as proposed. Therefore, the environmentally superior alternative is the Proposed Project, as modified by the three realignment alternatives. This alternative is illustrated in Figure 4-8.

Although this EIR identifies an environmentally superior alternative, it is possible that the CPUC decision-makers could balance the importance of each impact area differently and reach different conclusions. Further, the CPUC decision-makers must consider feasibility factors other than environmental impacts, e.g., costs associated with each alternative, in reaching their final decision on the project. CEQA provides that projects may be approved in spite of one or more significant impacts if “specific economic, social, or other considerations make infeasible” project alternatives or mitigation measures. (Pub. Resources Code, § 21002.)

4.7. Impact Assessment of Alternatives

Three alternatives have been retained for detailed analysis in this EIR. Each retained alternative is described in Section 4.3, and the impacts are presented in Section 4.8 through Section 4.11. Figure 4-1 presents an overview map of the retained alternatives, and more detailed, individual maps of each alternative are presented as defined below (all figures are at the end of this section).

The three alternatives retained for EIR analysis are all located in Segment 1. They are:

- The Crater Mountain Realignment (14 miles long; see Figure 4-2)
- The Manzanar Realignment (29 miles long; see Figure 4-3)
- The Fossil Falls Realignment (16 miles long; see Figure 4-4).

For each of these three alternatives, the existing I-C line segment replaced by the realignment segment would be removed after the new line is constructed in the different ROW. No new structures would be constructed in the replaced segment of the existing ROW. The alternative 115 kV subtransmission line would be constructed adjacent to existing LADWP transmission facilities, using existing LADWP access roads with additional spur roads constructed to reach each new structure.

4.8. Impacts of the Crater Mountain Realignment Alternative

The Crater Mountain Realignment Alternative is located within the upper Owens River Valley, as shown on Figure 4-2. Bordered by the Sierra Nevada Mountains on the west and Inyo Mountains on the east, this portion of the valley offers expansive views of a landscape consisting primarily of gently to moderately sloping alluvial fans and mostly level basin floors, terraces, and floodplains backdropped by the rugged, angular form of the Inyo Mountains. A variety of shrubs are found throughout this arid valley including big sagebrush, rabbitbrush, antelope bitterbrush, and saltbush to name a few. Riparian areas occur along the Owens River. Existing electric subtransmission and transmission facilities are also prominently visible and generally run north-south along the valley floor, often in close proximity to US 395, the primary road corridor through the valley and a Designated State Scenic Highway along that portion of the existing SCE ROW that would be replaced by the Crater Mountain Realignment Alternative.

4.8.1. Aesthetics

4.8.1.1. Environmental Setting of the Crater Mountain Realignment Alternative

Views of the Crater Mountain Realignment Alternative would be only from a few scattered, rural residences and campgrounds, Aberdeen Resort and, primarily, distant views from US 395 except for the crossing of the highway at the southern end of the alternative. Given the limited visibility of this alternative from public viewpoints and its proposed placement adjacent to a larger existing transmission corridor, there were no KOPs defined along the alternative's route. However, one KOP (1-22) was selected to illustrate the primary visual improvement that the alternative would have on views from US 395, which is discussed in the following paragraphs.

KOP 1-22 – US 395 Near East Elna Road

Figure 3.2-26A (KOP 1-22 Southbound US 395, Existing View) presents the existing view to the southeast from southbound US 395, just north of East Elna Road (below Tinemaha Reservoir). This segment of the Proposed Project illustrated in the simulation would be eliminated by the Crater Mountain Realignment Alternative.

Visual Quality. Moderate. The foreground to middleground flat valley floor and sloping alluvial fans, with tan- to russet-colored rounded shrubs and low trees provides dramatic contrast to the abruptly rising, steep, angular forms and undulating ridgelines of the Inyo and Sierra Nevada mountain ranges with their bluish hues at distance. The immediate foreground is dominated by the adjacent and visually prominent

subtransmission line that would be replaced by the Proposed Project. These structures cause noticeable view impairment of the background landscape. The visual quality is moderate and is substantially influenced by the presence of the existing subtransmission line with its strong structural form and line contrast.

Viewer Concern. High. Although energy transmission infrastructure is prominently visible in the foreground views from US 395, viewers would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky, valley plain, or mountain ranges) an adverse visual change. Additionally, this portion of US 395 is a Designated State Scenic Highway.

Viewer Exposure. High. The existing line is, and the Proposed Project would be, highly visible in the foreground views from the highway. The number of viewers would be high, and the duration of view would be extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of high for viewer exposure.

Overall Visual Sensitivity. For viewers in the vicinity of KOP 1-22, combining the equally weighted moderate visual quality, high viewer concern, and high viewer exposure results in an overall rating of moderate to high for visual sensitivity of the visual setting and viewing characteristics.

Impact AE-2: Substantially damage scenic resources within a state scenic highway.

Construction

General Construction Impacts. *LESS THAN SIGNIFICANT*. Construction of the Proposed Project would cause temporary visual effects due to the presence of equipment, vehicles, materials, and workforce. These effects would occur throughout the Proposed Project area. Construction would involve the use of cranes, heavy construction equipment, temporary storage and office facilities, and temporary laydown/staging areas. The alternative would also require construction activities in the existing I-C Project corridor because the existing structures would be removed after the alternative line is energized. Construction activities and ground disturbance would be limited to the area around each existing structure, the use of access roads, and the use of material yards.

Construction activities would include site clearing and grading, erection of the structures, conductor stringing and pulling, and site cleanup and restoration. Construction activities would be visible from scattered rural residences; rural residential enclaves, and communities (Wilkerson, Independence, Cartago, and Olancha); larger communities (Big Pine, Lone Pine, and Inyokern); Manzanar National Historic Site; US 395, SR 136, and SR 190; and numerous local roads and recreational sites. Throughout the construction period, the industrial character of the activities would cause substantial visual contrast and visual change and constitute adverse visual effects when viewed from the immediate Project vicinity, roads in the Project area, and all of the KOPs.

Since construction activities and equipment brought into the Proposed Project area and onto the Proposed Project sites would be temporary, they would result in less than significant aesthetics impacts.

Construction and Material Yards. *SIGNIFICANT AND UNMITIGABLE*. Section 2.4.9.1 describes the construction process for Segment 1 of the Proposed Project. This process would also apply to the Crater Mountain Realignment Alternative. As described in Chapter 2, the new line would be fully constructed and energized before SCE decommissions and removes the existing line. As described for the Proposed Project, SCE will require the use of Material Yard 1-7, an approximately 5-acre site located about 400 feet east of US 395 on the north side of Aberdeen Station Road. SCE further stated that there are no suitable replacement yards for this segment of the Proposed Project and for the Crater Mountain Realignment Alternative. Given the 39-month proposed use of Material Yard 1-7, the introduced visual contrast and industrial character would create a significant impact on views from the scenic highway.

Operations and Maintenance

The northern 8.5 miles of the Crater Mountain Realignment Alternative would move the Proposed Project (and thus, the existing subtransmission line) farther away from US 395, which is a designated scenic highway in this area. The southern approximately 5.5 miles would place the Proposed Project closer to US 395 than is the present subtransmission line the Project would replace. However, this alternative alignment would consolidate the Proposed Project into an existing transmission line corridor with multiple facilities, thus eliminating the separate subtransmission line segment along this portion of the scenic highway. Figure 3.2-26B (KOP 1-22 Southbound US 395, Proposed Project Sim.), from KOP 1-22, was established to document the aesthetics impact that would be eliminated with implementation of the Crater Mountain Realignment Alternative.

KOP 1-22 Southbound US 395 Near East Elna Road

BENEFICIAL. KOP 1-22 was established at a location that would capture the greatest aesthetics impact on the scenic highway and document the improvement that would result from implementation of the Crater Mountain Realignment Alternative. Specifically, the area of greatest impact would occur as the Project converges on (from the north) and spans the highway, then turns south closely parallel to the east side of the highway for an additional eight structures before turning from the highway to the east. The Project span of the scenic highway occurs approximately 0.4 mile north of the intersection with East Elna Road, just west of the Tinemaha Reservoir (see Figure 3.25-c; Designated Scenic Highway Segment of US 395).

Figure 3.2-26A (KOP 1-22 Southbound US 395, Existing View) presents the existing view to the southeast from KOP 1-22 from southbound US 395 just north of East Elna Road and south of the span. This view captures the existing southern half of the monopole line that would parallel the highway and then diverge to the east. As shown in the existing view, the existing line is prominently visible along the east side of US 395.

The existing line's (and ultimately the Project's) area of greatest visibility consists of 11 monopoles – 3 on the west side of the highway before the span and 8 on the east side of the highway after the span. However, under the Proposed Project, 1 of the 3 monopole structures on the west side of the highway would become a multi-pole (two poles), while 6 of the monopoles on the east side of the highway would become multi-poles. Specifically, after the span, the next 5 structures on the east side of the highway would change from monopoles to multi-pole structures (two poles each location). The sixth and seventh structures heading south of the span would remain monopoles, but the eighth structure at the angle point where the alignment would begin to diverge to the east away from the highway would again be a multi-pole. In total, the Proposed Project would replace 11 existing monopoles with 18 slightly larger and more visually prominent poles in a linear distance of approximately 1 mile.

Figure 3.2-26B (KOP 1-22 Southbound US 395, Proposed Project Sim.) presents a visual simulation of the Proposed Project that captures the southern 5 structure locations before the line would turn to diverge from the highway. The simulation shows that (from left to right) the first 2 structure locations would change from 2 monopoles to 2 multi-poles (4 poles total). The third and fourth structures would remain monopoles. But the fifth structure location, which is the point of divergence from the highway would change from a monopole to a multi-pole (two poles) structure.

Although the Proposed Project's TSPs would be consistent in design, appearance, and color with the existing structures that would be replaced within the established utility corridor, they would appear more visually prominent due to their substantially greater number and slightly greater height and width. While the existing line already adversely impacts the views from this scenic highway, this is within the existing setting for CEQA analysis. The Proposed Project would noticeably exacerbate that impact and would further impair the views of the valley landscape and Inyo Mountains from US 395, resulting in a significant and unmitigable impact as discussed under Segment 1 in Section 3.2.3.3 above.

However, under the Crater Mountain Realignment Alternative, the consolidation of the Proposed Project into the existing utility corridor approximately two miles away from US 395 would eliminate the Proposed Project's significant impact by avoiding the US 395 corridor entirely. Under the alternative, the addition of new poles adjacent to the much larger existing poles in the alternative corridor would result in an adverse but less than significant impact due to the only slightly increased visual contrast and industrial character it would contribute. The implementation of this alternative would also result in the beneficial impact to views from the Designated State Scenic Highway portion of US 395 due to the removal of a subtransmission line adjacent to the highway. The alternative's impact at this location is beneficial given the resulting elimination of the existing 115 kV subtransmission line that more closely follows US 395 in this area. No mitigation measures are required.

Impact AE-3: In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings.

Most project impacts associated with construction or long-term presence of project components fall into the category of degradation of visual character or quality. Substantial degradation results from higher levels of visual contrast, project dominance, and view blockage. Visual contrast relates to spatial characteristics, visual scale, texture, form, line, and color. Therefore, this criterion will be utilized for making impact conclusions regarding the Proposed Project's effects on existing landscapes and views.

Construction

LESS THAN SIGNIFICANT. Construction of the Proposed Project would cause temporary visual effects due to the presence of equipment, vehicles, materials, and workforce. These effects would occur throughout the Proposed Project area. Construction would involve the use of cranes, heavy construction equipment, temporary storage and office facilities, and temporary laydown/staging areas.

Construction activities would include site clearing and grading, erection of the structures, conductor stringing and pulling, and site cleanup and restoration. Construction activities would be visible from scattered rural residences, rural residential enclaves, and communities and local roads and recreational sites. Throughout the construction period, the industrial character of the activities would cause substantial visual contrast and visual change and constitute adverse visual effects when viewed from the immediate Project vicinity, roads in the Project area, and all of the KOPs.

Since construction activities and equipment brought into the Project area and onto the construction sites would be temporary, they would result in less than significant aesthetics impacts.

Operations and Maintenance

LESS THAN SIGNIFICANT AND BENEFICIAL. Impact AE-3 considers the permanent impacts (i.e., operational and maintenance effects) of the Proposed Project. As previously stated under Impact AE-2 above, under the Crater Mountain Realignment Alternative would result in the consolidation of the Proposed Project into the existing utility corridor. This consolidation would result in an adverse but less than significant impact when viewed from the few scattered rural residences and campgrounds, Aberdeen Resort, and US 395. The adverse impact would be due to the slightly increased visual contrast and industrial character associated with the additional structures contributed by the Project structures.

The Crater Mountain Realignment Alternative would also result in the removal of the existing subtransmission line adjacent to a portion of the US 395 Designated State Scenic Highway, which would be a beneficial impact. The resulting overall impact would be less than significant as to the installation of the alternative adjacent to the exiting larger transmission corridor. No mitigation measures are required.

Impact AE-5: Create a new source of substantial light or glare that would adversely affect day or nighttime views.

Construction

LESS THAN SIGNIFICANT. Most construction activities would take place during daylight hours. However, at limited times, some construction activities would require lighting for safety. According to SCE, any required lighting would be limited to an individual work area and would be temporary in nature. While material yards may be lit for staging and security, this lighting would be directed on site and away from potentially sensitive receptors. Further, as stipulated in APM AES-8, *"All night lighting used for construction…shall orient lights downward and be shielded to eliminate off-site light spill at times when the lighting is in use."* Therefore, the Project would not create a new source of substantial light during construction, and the resulting impact would be less than significant under this criterion, and no mitigation is required. However, failure to implement APM AES-8 would have the potential to cause significant night lighting impacts, which would necessitate additional mitigation in the form of a required Night Lighting Management Plan.

Operations and Maintenance

LESS THAN SIGNIFICANT. No new permanent lighting is proposed for the Project and this alternative is assumed to be the same. Operations and maintenance activities required for the rebuilt power lines would not change from those currently required for the existing system. Therefore, no operations- or maintenance-related night-lighting impacts would occur.

With respect to the potential for glare impacts to occur from the Proposed Project, SCE has committed to the use of non-specular conductors and galvanized steel poles with a dulled finish to replace the existing components, thus reducing the potential for glare. Additionally, the galvanized poles will weather over time, further reducing the potential for reflectance and glare. Therefore, the long-term glare impacts are expected to be less than significant under this criterion, and no mitigation is required.

4.8.2. Agriculture and Forestry Resources

4.8.2.1. Environmental Setting of the Crater Mountain Realignment Alternative

The Crater Mountain Realignment Alternative is not located on any FMMP-designated Farmland. The Crater Mountain Realignment Alternative would traverse portions of undeveloped lands designated as SFL (State and Federal Land) and zoned as OS-40 (Open Space with a 40-acre minimum). Inyo County permitted uses for OS-40 include farm and ranch operations such as livestock, orchards, vineyards, field and truck crops, nurseries, greenhouses, vegetables, flower gardening and other agricultural-related fields (Inyo County, 2001). The Crater Mountain Realignment Alternative would have no impact on lands under Williamson Act contract because no lands subject to Williamson Act contracts occur in the alternative area. The Crater Mountain Realignment Alternative is not located within areas with active agricultural operations. The nearest active agriculture operation is located approximately 0.75 miles north of the Crater Mountain Realignment Alternative.

The Crater Mountain Realignment Alternative does not traverse lands zoned as forest land, timberland or timberland productions. The Fremont Cottonwood Forest is the nearest area that may meet the definition of forestland; however, no commercial harvesting of forest materials occurs in this area. Approximately 2.4 acres of Fremont Cottonwood Forest is located along the Crater Mountain Realignment Alternative.

Three impacts related to agriculture and forestry would apply to the Crater Mountain Realignment Alternative. The Crater Mountain Realignment Alternative construction and operation would not occur in FMMP-designated Farmlands, lands under Williamson Act contract, active agricultural operations, or lands zoned as forest land, timberland or timberland productions. Therefore, Impact AF-1, Impact AF-3, and Impact AF-6 are not discussed further.

4.8.2.2. Environmental Impacts of the Crater Mountain Realignment Alternative

Impact AF-2: Conflict with existing zoning for agricultural use or a Williamson Act contract.

LESS THAN SIGNIFICANT. The Crater Mountain Realignment Alternative is within areas where agricultural land use and zoning designations are present. The northern and southern portions of the Crater Mountain Realignment Alternative alignment are located in undeveloped lands designated as SFL and zoned as OS-40 in Inyo County. The Crater Mountain Realignment Alternative would be constructed within 2 miles west of the existing subtransmission line and would be installed within the same types of land use and zoning designations for agricultural uses as the existing subtransmission line and Proposed Project. Removal of the existing subtransmission structures in the existing alignment would remove structures from areas designated for agricultural use. The Crater Mountain Realignment Alternative would not result in any changes to zoning designations, or conflict with zoning designations for agricultural uses because agricultural activities could occur on properties zoned OS-40 within the Crater Mountain Realignment Alternative alignment after implementation of the alternative, and there would be no significant net change in potential agricultural land impacted by the new subtransmission towers. Therefore, impacts would be less than significant.

The Crater Mountain Realignment Alternative would have no impact on lands under Williamson Act contract because no lands subject to Williamson Act contracts occur in the project area.

Impact AF-4: Result in the loss of forest land or conversion of forest land to non-forest use.

NO IMPACT. The Crater Mountain Realignment Alternative is located in proximity to Fremont Cottonwood Forest similar to the Proposed Project; however, the construction work areas and areas of permanent disturbance for operation of the Crater Mountain Realignment would not disturb any Fremont Cottonwood Forest or any other vegetation community that could meet the definition of forestland. No forest land would be impacted by removal of the existing subtransmission structures. The Crater Mountain Realignment Alternative would have no impact on forest land and would not convert forest land to non-forest use. No impact on forest land would occur.

Impact AF-5: Involve other changes in the existing environment that could result in conversion of Farmland to nonagricultural use. or forest land to non-forest use.

NO IMPACT. The Crater Mountain Realignment Alternative is not located in FMMP-designated Farmland or any active agricultural operations. Additionally, the Crater Mountain Realignment Alternative does not traverse lands zoned as forest land, timberland or timberland production and does not impact any forest land, as discussed in Impact AF-4. Thus, the Crater Mountain Realignment Alternative would not involve other changes in the existing environment that, due to its location or nature, could result in conversion of Farmland to non-agricultural use or forest land to non-forest use. No impact would occur.

4.8.3. Air Quality

4.8.3.1. Environmental Setting of the Crater Mountain Realignment Alternative

The Crater Mountain Realignment Alternative would maintain the same environmental setting as the Proposed Project, described in Section 3.4.1. The alternative would also require construction activities in the existing I-C Project corridor because the existing structures would be removed after the alternative line is energized. Construction activities and ground disturbance would be limited to the area around each existing structure, use of access roads, and use of material yards.

4.8.3.2. Environmental Impacts of the Crater Mountain Realignment Alternative

Impact AQ-1: Conflict with or obstruct implementation of an applicable air quality plan.

LESS THAN SIGNIFICANT. The potential impacts associated with the construction or operations and maintenance of this alternative would be similar to the Proposed Project as this alternative would involve similar construction and operations and maintenance activities. Impacts would be less than significant, and no mitigation is required.

Impact AQ-2: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard.

LESS THAN SIGNIFICANT WITH MITIGATION. The type and intensity of construction activity would be substantially the same as in the Proposed Project. While the construction of the new structures would occur in a different location (in the alternative ROW) than the removal of existing structures (in the existing ROW), the components of construction activity and vehicle emissions would be essentially the same as for the Proposed Project.

Due to the comparable type and intensity of activity, the annual and daily rates of emissions would be nearly the same as in the Proposed Project. The pollutant emissions of this alternative alone are not expected to exceed any additional air quality thresholds, but as a component of the Proposed Project as a whole, they contribute to a potentially significant impact, that would require implementation of Mitigation Measures AQ-2a (Control Off-Road Equipment Emissions with Tier 4 Engines, Supersedes APM AQ-1) and AQ-2b (Control Fugitive Dust Emissions).

Implementation of Mitigation Measure AQ-2a (Control Off-Road Equipment Emissions with Tier 4 Engines, Supersedes APM AQ-1) and Mitigation Measure AQ-2b (Control Fugitive Dust Emissions) would be required as in the Proposed Project to avoid causing any new violations or contributing substantially to existing violations of the ambient air quality standards, and to further reduce the adverse regional and localized effects of construction-phase emissions. Impacts would be less than significant with mitigation.

Mitigation Measures for Impact AQ-2

AQ-2a Control Off-Road Equipment Emissions with Tier 4 Engines (Supersedes APM AQ-1).

AQ-2b Control Fugitive Dust Emissions.

Impact AQ-3: Expose sensitive receptors to substantial pollutant concentrations.

LESS THAN SIGNIFICANT WITH MITIGATION. The potential impacts associated with the construction and operations and maintenance of this alternative would be similar to the Proposed Project as this alternative would involve similar construction and operations and maintenance activities. While the distances between the Project and some of the sensitive receptors would change, the closest sensitive receptor would be the same distance from the ROW for both the Crater Mountain Realignment Alternative and the Proposed Project. Additionally, the pollutant emissions would be distributed over the construction period and across the alignment and thus would not be concentrated in any one area. As a result, the actual emissions that would be created at a single site, and thus near a single sensitive receptor, would be a fraction of the overall Proposed Project emissions. The pollutant emissions of this alternative alone are not expected to exceed any additional air quality thresholds, but as a component of the Proposed Project as a whole, they contribute to a potentially significant impact, that would require implementation of Mitigation Measures AQ-2a (Control Off-Road Equipment Emissions with Tier 4 Engines, Supersedes APM AQ-1) and AQ-2b (Control Fugitive Dust Emissions). The impact of potentially exposing sensitive receptors to substantial pollutant concentrations would be less than significant with mitigation.

Mitigation Measures for Impact AQ-3

AQ-2a Control Off-Road Equipment Emissions with Tier 4 Engines (Supersedes APM AQ-1).

AQ-2b Control Fugitive Dust Emissions.

Impact AQ-4: Generate other emissions (such as those leading to odors) adversely affecting a substantial number of people.

LESS THAN SIGNIFICANT. The potential impacts of this alternative would be similar to the Proposed Project as this alternative would involve similar construction and operations and maintenance activities. Construction and operations and maintenance activities involving diesel-powered equipment and vehicles would not be a source of notable odors because of the mandatory use of ultra-low sulfur diesel fuel. Project-related activities would occur in compliance with local air district rules and regulations prohibiting nuisances and would not create objectionable odors affecting a substantial number of people. This impact would be less than significant, and no mitigation is required.

4.8.4. Biological Resources

4.8.4.1. Environmental Setting of the Crater Mountain Realignment Alternative

The Crater Mountain Realignment Alternative would replace approximately 13.7 miles of the Proposed I-C alignment in the northern portion of Segment 1, between approximately Big Pine and Aberdeen, avoiding cultural resources in the Fish Springs area. The Crater Mountain Realignment would be located within 2.5 miles west of the Proposed alignment, just east of the existing LADWP transmission line and access route. The alternative alignment crosses four Creeks that drain from west to east from the Sierra Nevada into the Owens River (Arcadis, 2023a).

Dominant vegetation communities in the Crater Mountain Realignment are big sagebrush, fourwing saltbush, Fremont's smokebush – Nevada smokebush scrub, and greasewood scrub, all of which are designated as a sensitive natural community.

The following special-status plant species were observed or have potential to occur along the Crater Mountain Realignment route in Segment 1. No federally or state-listed plant species were observed during surveys.

OBSERVED

- Coyote gilia (2B.2)
- Geyer's milk- vetch (2B.2)
- Torrey's blazingstar (2B.2)

POTENTIAL

- Owens Valley checkerbloom (CE, 1B.1)
- Inyo County star- tulip (1B.1)
- Parish's popcornflower (1B.1)
- Inyo phacelia (1B.2)
- Nevada oryctes (2B.1)
- Broad-keeled milk-vetch (2B.2)
- Shockley's milk-vetch (2B.2)
- Sagebrush loeflingia (2B.2)
- Foxtail thelypodium (2B.2)

Two special-status wildlife were incidentally observed: olive-sided flycatcher (CSC) and Tule elk (S3). USFWS designated critical habitat for Sierra Nevada bighorn sheep is located within 5 miles of the alternative alignment. No desert tortoise or sign was observed and there are no CNDDB records within 20 miles of the Crater Mountain Realignment Alternative. Critical habitat for desert tortoise is outside the alignment to the south.

Within the Crater Mountain Realignment Alternative, federal and state wetlands and non-wetland waters were identified (Arcadis, 2023b).

Vegetation communities, sensitive natural communities, and special-status species are described in detail in the Project Sensitive Species and Habitat Report (SSHR) Botanical Addendum (Arcadis, 2023a). Potential and locations of special-status species occurrence are described in Appendix 4, Table 4-1. Jurisdictional

waters are described in detail in the Project Wetlands and Other Waters Jurisdictional Delineation Report Addendum (Arcadis, 2023b).

4.8.4.2. Environmental Impacts of the Crater Mountain Realignment Alternative

Impact BIO-1: 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 Wildlife or U.S. Fish and Wildlife Service.

Construction

Vegetation and Habitat

Impact Description. *LESS THAN SIGNIFICANT WITH MITIGATION*. Impacts to fish and wildlife habitat would be similar to those described in Section 3.5.3.3, Environmental Impacts of the Proposed Project, Impact BIO-1. The only difference in impacts would occur over 14 miles in Segment 1. Like the Proposed Project, construction, post-construction restoration, and operations and maintenance activities for the Crater Mountain Realignment Alternative would result in temporary and permanent disturbance and removal of vegetation and habitat in discrete and disjointed locations. As a result of clearing and grubbing, grading, earth-moving, and vehicle and equipment traffic, potential direct impacts to habitat may include direct crushing, burial, or uprooting of vegetation; root damage; disturbance of seed banks, underground dormant plants, and plant nutrients; burial or scour of vegetation from runoff, sedimentation, and erosion; and disruption of photosynthesis from fugitive dust. Indirect impacts may occur from incidental introductions of invasive weeds that reduce habitat quality and increase fire risk.

Similar to the Proposed Project, which would be built in the existing SCE ROW, the Crater Mountain Realignment Alternative would be constructed adjacent to existing transmission facilities (two higher voltage transmission lines owned by LADWP) and the associated access routes that are already disturbed. While the habitat impacts overall would be as described under Impact BIO-1 for the Proposed Project (Section 3.5.3.3), the Crater Mountain Realignment Alternative would be located farther from the Owens River and the Tinemaha Reservoir and would avoid two river crossings required for the Proposed Project.

Application of APMs. Similar to the Proposed Project, the loss and modification of vegetation and habitat as a result of construction could significantly affect special-status species on the project site or in the vicinity. Implementation of the following APMs, which were developed as part of the project, would address vegetation and habitat loss, as described in detail in Section 3.5.3.3.

- APM BIO-RES-1 (Develop and Implement Habitat Restoration Plan)
- APM BIO-RES-2 (Develop Invasive Plant Management Plan)
- APM HAZ-1 (Prepare a Hazardous Materials Management Plan)

These APMs implement seeding and revegetation, soil decompaction, erosion control, and non-native control, which would stabilize soils, re-establish native vegetation, and improve habitat values in the project area. Procedures for containment and cleanup of spills and restrictions on refueling would minimize the exposure of vegetation and habitat to hazardous materials. However, even with application of APMs, impacts would be significant without mitigation.

Permit Conditions. SCE would also be required to comply with conditions included in permits from USACE, CDFW, and RWQCB. If the project were approved, SCE would be required to obtain permits to maintain air and water quality and to implement specific requirements to minimize impacts to habitat from fugitive dust, runoff, erosion, and sedimentation in and around work areas.

Mitigation. Even with implementation of APMs and permit conditions, impacts would be significant without mitigation. Certain APMs are superseded with recommended mitigation measures to ensure that

impacts to vegetation and habitat would be less than significant. Other mitigation measures are recommended below to further avoid significant impacts and compensate for habitat loss. The full description of these mitigation measures is presented in the discussion of Impact BIO-1 in Section 3.5.3.3.

- Mitigation Measure BIO-1a (Worker's Environmental Awareness Program) supersedes APM WEAP
- Mitigation Measure BIO-1b (Biological Monitoring) supersedes APM BIO-GEN-1
- Mitigation Measure BIO-1c (Minimization of Vegetation and Habitat Impacts)
- Mitigation Measure BIO-1d (Compensation for Habitat Loss)

As described in Impact BIO-1 for the Proposed Project (Section 3.5.3.3), these mitigation measures would ensure that disturbance of vegetation and habitat is minimized and restricted to designated and demarcated work areas. Compensation for permanent impacts would offset habitat loss due to project construction activities.

Mitigation measures recommended in other sections of this EIR would also reduce the severity of construction impacts to vegetation and habitat, including:

- Mitigation Measure AQ-2b (Control Fugitive Dust Emissions; see full text in Section 3.4.3.3, Air Quality)
- Mitigation Measure HW-1a (Drainage Erosion and Sedimentation Control Plan; see full text in Section 3.11.3.3, Hydrology and Water Quality)

These mitigation measures would ensure that dust generated from construction, which could accumulate on vegetation and impact growth, is suppressed and minimized. Erosion resulting from vegetation removal and disturbance of soils would be managed through erosion BMPs, which would prevent loss of soils and seed bank and protect surrounding habitat from degradation.

Special-Status Plants

Impact Description. *LESS THAN SIGNIFICANT WITH MITIGATION*. Impacts to special-status plants would be similar to those described for habitat and special-status plants (Impact BIO-1) in Section 3.5.3.3, Environmental Impacts of the Proposed Project. For the Crater Mountain Alignment Alternative, a portion of the Proposed Project in Segment 1 would be moved within 2.5 miles west of the existing SCE ROW. Generally, several additional special-status plant species had potential to occur in this alternative alignment, as compared to the species listed for Segment 1 in Section 3.5.1.6 (Arcadis, 2019, 2023a).

Application of APMs. Similar to the Proposed Project, construction could result in the loss or disturbance of special-status plants, resulting in a significant impact, as described in detail in Section 3.5.3.3. APMs previously outlined for vegetation and habitat, above, would address loss of vegetation and plants. Additionally, the following APMs address protection of special-status plants (full text in Section 2.8).

- APM BIO-BOT-1 (Special-Status Herbaceous Plants).
- APM BIO-BOT-2 (Special-status Perennial Plants and Other Species).
- APM BIO-CNDDB-1 (Data Entry).

Surveying and buffers would avoid direct disturbance and removal of individual special-status plants and minimize disturbance of the seed bank and disruption of supporting soils. Habitat restoration, revegetation, salvage (as feasible), and off-site compensation for impacted individuals would offset the loss of special-status plants in the project area. Reporting of special-status plants would support future management and conservation of individuals and populations in the project vicinity. However, even with application of APMs, impacts would be significant.

Permit Conditions. SCE would also be required to comply with conditions included in permits from CDFW and USFWS. If the Project were approved, SCE would be required to obtain permits for take or disturbance of listed species.

Mitigation. Even with implementation of APMs and permit conditions, impacts would be significant without mitigation. Mitigation measures previously outlined for vegetation and habitat, above, would reduce

impacts to special-status plants. Other mitigation measures are recommended below to further avoid significant impacts. The full description of this mitigation measure is presented in Impact BIO-1 in Section 3.5.3.3.

- Mitigation Measure BIO-1e (Pre-construction Biological Resources Surveys).

Work areas would be surveyed, and special-status plants would be identified and marked, buffered and avoided, relocated, or salvaged, which would avoid direct impacts.

Mitigation measures recommended in other sections of this EIR would also reduce the severity of construction impacts to special-status plants, including:

- Mitigation Measure AQ-2b (Control Fugitive Dust Emissions; full text in Section 3.4.3.3, Air Quality)
- Mitigation Measure HW-1a (Drainage Erosion and Sedimentation Control Plan; full text in Section 3.11.3.3, Hydrology and Water Quality)

These mitigation measures would ensure that dust generated from construction, which could accumulate on plants and impact growth, is suppressed and minimized. Erosion resulting from vegetation removal and disturbance of soils would be managed through erosion BMPs, which would prevent loss of soils and seed bank and protect surrounding habitat and plant species from degradation. Although several additional special-status plants have the potential to occur in this alternative alignment as compared to Segment 1, as described in Section 3.5.1.6, the mitigation measures would be equally effective at protecting these species.

Special-Status Wildlife

Impact Description. *LESS THAN SIGNIFICANT WITH MITIGATION*. Impacts to special-status wildlife would be similar to those described in Impact BIO-1 (Section 3.5.3.3), Environmental Impacts of the Proposed Project. Ground disturbance and clearing would impact vegetation and burrows used by wildlife for shelter, nesting and reproduction, and foraging habitat. Increased equipment and vehicle traffic may result in increased wildlife strikes. Presence of excavation areas, trenches, or pits may trap wildlife, causing injury, mortality, or susceptibility to predation. Increased noise, vibration, dust, and artificial light may disrupt nesting or foraging behaviors, restrict access to shelter and foraging areas, or alter site conditions and reduce the overall quality of habitat available. Increased human presence may increase presence of opportunistic predators. Introduction and spread of non-native species would degrade habitat for wildlife.

Impacts due to bird and bat collision with project facilities and transmission lines are detailed in Impact BIO-6.

For the Crater Mountain Alignment Alternative, a portion of the Proposed Project in Segment 1 would be moved within 2.5 miles west of the existing SCE ROW. While impacts would be similar, the Crater Mountain Realignment Alternative would be located farther from the Owens River and the Tinemaha Reservoir and would avoid two river crossings, resulting in relatively less impact to wildlife species that use the Owens River than the Proposed Project, including the state and federally listed western yellow-billed cuckoo (FT, CE, BLM S) which has been observed near the Tinemaha Reservoir (Arcadis, 2023a).

Application of APMs. Similar to the Proposed Project, construction could result in loss or modification of native habitat and direct disturbance, mortality, or injury of special-status wildlife on the project site or vicinity. APMs previously outlined for vegetation and habitat, above, and described in detail in Section 3.5.3.3, would improve habitat values and promote recovery of native vegetation for special-status wildlife. Additionally, the following APMs would reduce effects on special-status wildlife and their habitat.

- APM BIO-AVI-2 (Burrowing Owl)
- APM BIO-AVI-3 (Yellow-billed Cuckoo)
- APM BIO-HERP-9 (Northern Leopard Frog)
- APM BIO-MAM-1 (Mohave Ground Squirrel)

- APM BIO-MAM-5 (Bighorn Sheep – Nelson's and Desert Bighorn Sheep)
- APM BIO-CNDDB-1 (Data Entry)
- APM WET-1 (Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats)
- APM AES-8 (Night Lighting during Construction of Facilities)
- APM NOI-1 (Noise Control)

Species-specific APMs are expected to reduce, in part, the likelihood and severity of injury and the likelihood of mortality of special-status wildlife with potential to occur in the project areas, as discussed in detail in Section 3.5.3.3. APMs for night lighting and noise (AES-8 and NOI-1) would minimize disturbance of wildlife and disruption of foraging and breeding during nighttime hours. However, even with application of APMs, impacts would be significant.

Permit Conditions. SCE would also be required to comply with conditions included in ITPs from CDFW and/or USFWS. If the Project were approved, SCE would be required to obtain permits for take or disturbance of listed species.

Mitigation. Even though this Alternative would have reduced impacts to wildlife species that use the Owens River as compared to the Proposed Project, impacts would be significant without mitigation. Mitigation measures previously outlined for vegetation and habitat would reduce impacts to habitat for special-status wildlife. Certain APMs are superseded with recommended mitigation measures to ensure that impacts to special-status wildlife would be less than significant. Other mitigation measures are recommended below to avoid disturbance and loss of additional special-status wildlife species. The full description of these mitigation measures is presented in Impact BIO-1 in Section 3.5.3.3.

- Mitigation Measure BIO-1e (Pre-construction Biological Resources Surveys)
- Mitigation Measure BIO-1f (Wildlife impact avoidance and minimization)
- Mitigation Measure BIO-1g (Crotch bumble bee)
- Mitigation Measure BIO-1h (Special-status reptiles)
- Mitigation Measure BIO-1i (Desert Tortoise) supersedes APM HERP-1
- Mitigation Measure BIO-1j (Raven Monitoring, Management, and Control Plan)
- Mitigation Measure BIO-1k (Mohave ground squirrel avoidance and minimization)
- Mitigation Measure BIO-1l (American Badger and Desert Kit Fox)
- Mitigation Measure BIO-1m (Special-status Bats) supersedes APM BIO-MAM-6
- Mitigation Measure BIO-1n (Golden Eagle) supersedes APM BIO-AVI-4

Work areas would be surveyed, and special-status wildlife would be identified, monitored, buffered and avoided, or relocated, which would avoid direct injury or mortality of species. Management of work site hazards would further prevent injury and mortality of special-status wildlife. Species-specific mitigation measures would minimize and avoid impacts by surveying and buffering those species.

Mitigation measures recommended in other sections of this EIR would also reduce the severity of construction impacts to wildlife and their habitat:

- Mitigation Measure AQ-2b (Control Fugitive Dust Emissions; see full text in Section 3.4.3.3, Air Quality)
- Mitigation Measure HW-1a (Drainage Erosion and Sedimentation Control Plan; see full text in Section 3.11.3.3, Hydrology and Water Quality)

These mitigation measures would ensure that dust generated from construction, which could disturb wildlife, accumulate on vegetation, and impact growth of wildlife habitat, is suppressed and minimized. Erosion resulting from vegetation removal and disturbance of soils would be managed through erosion BMPs, which would prevent loss of soils and protect wildlife habitat from degradation.

Operation and Maintenance

LESS THAN SIGNIFICANT. The impacts from operations and maintenance would be similar to activities that are ongoing to maintain the existing subtransmission lines. For the Crater Mountain Realignment Alternative, these impacts would occur in the alternative ROW and not in the existing Segment 1 ROW. The Crater Mountain Realignment Alternative would be located immediately adjacent to two larger LADWP transmission lines, which currently undergo similar maintenance activities. Because the operations and maintenance activities would occur within the areas already disturbed by construction of the alternative itself, no new ground disturbance would be expected during maintenance. SCE would implement the APMs that apply to maintenance activities. Impacts from operations and maintenance would be less than significant.

Impact BIO-2: 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 Wildlife or U.S. Fish and Wildlife Service.

Construction

Impact Description. *LESS THAN SIGNIFICANT WITH MITIGATION*. Impacts to riparian vegetation and sensitive vegetation communities would be similar to those described for habitat (Impact BIO-1) and riparian and sensitive communities (Impact BIO-2) in Section 3.5.3.3. The only difference in impacts would occur over 14 miles in Segment 1.

As a result of clearing and grubbing, grading, earth-moving, and vehicle traffic, potential direct impacts to sensitive vegetation communities may include direct crushing, burial, or uprooting of vegetation; root damage; disturbance of seed banks, underground dormant plants, and plant nutrients; burial or scour of vegetation from runoff, sedimentation, and erosion; and disruption of photosynthesis from fugitive dust. Indirect impacts may occur from incidental introductions of invasive weeds that reduce habitat quality and increase fire risk.

While impacts would be similar to the Proposed Project segment that would be replaced, the Crater Mountain Realignment Alternative would be located farther from the Owens River and the Tinemaha Reservoir and would avoid two river crossings, resulting in relatively less impact to riparian habitats than the Proposed Project. Impacts to other sensitive vegetation communities that occur along the Crater Mountain Realignment Alternative (Arcadis, 2023a) would be the same as described for the Proposed Project.

Application of APMs. Similar to the Proposed Project, construction would significantly impact sensitive and/or riparian vegetation in the project area. Implementation of the following APMs, which were developed as part of the project, would address habitat loss, as described in detail in Section 3.5.3.3.

- APM BIO-RES-1 (Develop and Implement Habitat Restoration Plan).
- APM BIO-RES-2 (Develop Invasive Plant Management Plan).
- APM HAZ-1 (Prepare a Hazardous Materials Management Plan).

These APMs implement seeding and revegetation, soil decompaction, erosion control, and non-native control, which would stabilize soils, re-establish native vegetation, and improve habitat values in the project area. Procedures for containment and cleanup of spills and restrictions on refueling would minimize the exposure of vegetation and habitat to hazardous materials. However, even with application of APMs, impacts would be significant without mitigation.

Permit Conditions. SCE would also be required to comply with conditions included in permits from USACE, CDFW, and RWQCB. If the Project were approved, SCE would be required to obtain permits to maintain air and water quality and to implement specific requirements to minimize impacts to habitat from fugitive dust, runoff, erosion, and sedimentation in and around work areas.

Mitigation. Even though this Alternative would have reduced impacts to riparian habitats as compared to the Proposed Project, impacts would be significant without mitigation. Certain APMs are superseded with

recommended mitigation measures to ensure that impacts to riparian vegetation and sensitive vegetation communities would be less than significant. Other mitigation measures are recommended below to further avoid significant impacts and compensate for habitat loss. The full description of these mitigation measures is presented in Impact BIO-1 in Section 3.5.3.3.

- Mitigation Measure BIO-1a (Worker's Environmental Awareness Program) supersedes APM WEAP.
- Mitigation Measure BIO-1b (Biological Monitoring) supersedes APM BIO-GEN-1.
- Mitigation Measure BIO-1c (Minimization of Vegetation and Habitat Impacts).
- Mitigation Measure BIO-1d (Compensation for Habitat Loss).

These mitigation measures would ensure that habitat disturbance is minimized and restricted to designated and demarcated work areas and that habitat loss in sensitive communities would be offset.

Mitigation measures recommended in other sections of this EIR would also reduce the severity of construction impacts to riparian vegetation and sensitive vegetation communities, including:

- Mitigation Measure AQ-2b (Control Fugitive Dust Emissions; see full text in Section 3.4.3.3, Air Quality)
- Mitigation Measure HW-1a (Drainage Erosion and Sedimentation Control Plan; see full text in Section 3.11.3.3, Hydrology and Water Quality)

These mitigation measures would ensure that dust generated from construction, which could accumulate on vegetation and impact growth, is suppressed and minimized. Erosion resulting from vegetation removal and disturbance of soils would be managed through erosion BMPs, which would prevent loss of soils and seed bank and protect surrounding habitat from degradation.

Operation and Maintenance

LESS THAN SIGNIFICANT. As analyzed under Impact BIO-1, impacts from operations and maintenance would be less than significant.

Impact BIO-3: Substantially affect jurisdictional wetlands, waters of the U.S., or waters of the state.

Construction

Impact Description. *LESS THAN SIGNIFICANT WITH MITIGATION*. Impacts to jurisdictional wetlands and waters would be similar to those described for jurisdictional waters (Impact BIO-3) in Section 3.5.3.3, Environmental Impacts of the Proposed Project. The only difference in impacts would occur over 14 miles in Segment 1.

As a result of clearing and grubbing, grading, earth-moving, and vehicle traffic, potential direct impacts to wetlands and jurisdictional waters may include rutting, sedimentation, or erosion in and around surface waters; direct crushing, burial, or uprooting of wetland vegetation; and disturbance of seed banks, underground dormant plants, and plant nutrients. Indirect impacts may occur from incidental introductions of invasive weeds that reduce habitat quality; from spillage of hazardous materials used during construction; and from introduction of sediment into waters, which would reduce water quality in the project vicinity and downstream.

While impacts would be similar, the Crater Mountain Realignment Alternative would be located farther from the Owens River and the Tinemaha Reservoir and would avoid two river crossings, resulting in relatively less impact to jurisdictional waters than the Proposed Project. Impacts to other jurisdictional waters outside the Crater Mountain Realignment Alternative area would be the same as described for the Proposed Project.

Application of APMs. Similar to the Proposed Project, construction would significantly impact jurisdictional wetlands and waters. Implementation of the following APMs, which were developed as part of the project, would address jurisdictional waters, as described in detail in Section 3.5.3.3.

- APM BIO-RES-1 (Develop and Implement Habitat Restoration Plan).
- APM BIO-RES-2 (Develop Invasive Plant Management Plan).
- APM HAZ-1 (Prepare a Hazardous Materials Management Plan).
- APM BIO-WET-1. (Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats).

These APMs implement seeding and revegetation, soil decompaction, erosion control, and non-native control, which would stabilize soils, re-establish native vegetation, and improve habitat values in the project area. Procedures for containment and cleanup of spills and restrictions on refueling would minimize the exposure of vegetation and habitat to hazardous materials.

By implementing BIO-WET-1, wetlands and jurisdictional waters would be avoided unless otherwise authorized by resource agencies. Unavoidable permanent impacts would be offset, as approved. BMPs would minimize indirect impacts and protect jurisdictional waters from sedimentation or pollution. However, even with application of APMs, impacts would be significant.

Permit Conditions. SCE would also be required to comply with conditions included in permits from USACE, CDFW, and RWQCB. If the Project were approved, SCE would be required to obtain permits to maintain water quality and to implement specific requirements to minimize impacts to wetlands from runoff, erosion, and sedimentation in and around work areas. Permits would define compensation ratios for unavoidable impacts to jurisdictional waters.

Mitigation. Even though the Crater Mountain Realignment Alternative would have relatively reduced impacts to jurisdictional waters as compared to the Proposed Project, impacts would be significant without mitigation. Certain APMs are superseded with recommended mitigation measures to ensure that impacts would be less than significant. Other mitigation measures are recommended below to further avoid significant impacts and compensate for loss of jurisdictional waters. The full description of these mitigation measures is presented in Impact BIO-1 in Section 3.5.3.3.

- Mitigation Measure BIO-1a (Worker's Environmental Awareness Program) supersedes APM WEAP.
- Mitigation Measure BIO-1b (Biological Monitoring) supersedes APM BIO-GEN-1.
- Mitigation Measure BIO-1c (Minimization of Vegetation and Habitat Impacts).
- Mitigation Measure BIO-1d (Compensation for Habitat Loss).

These mitigation measures would ensure that habitat disturbance is minimized and restricted to designated and demarcated work areas and that habitat loss in sensitive communities would be offset.

Mitigation measures recommended in other sections of this EIR would also reduce the severity of construction impacts to wetlands and jurisdictional waters, including:

- Mitigation Measure AQ-2b (Control Fugitive Dust Emissions; see full text in Section 3.4.3.3, Air Quality)
- Mitigation Measure HW-1a (Drainage Erosion and Sedimentation Control Plan, see full text in Section 3.11.3.3, Hydrology and Water Quality)

These mitigation measures would ensure that dust generated from construction, which could settle and accumulate in wetlands and waters, is suppressed and minimized. Erosion resulting from vegetation removal and disturbance of soils would be managed through erosion BMPs, which would prevent loss of soils and sedimentation of jurisdictional waters.

Operation and Maintenance

LESS THAN SIGNIFICANT. As explained for Impact BIO-1, impacts from operations and maintenance would be less than significant.

Impact BIO-4: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

Construction

Impact Description. *LESS THAN SIGNIFICANT WITH MITIGATION*. Impacts to wildlife movement would be similar to those described in Section 3.5.3.3, Environmental Impacts of the Proposed Project. The only difference in impacts would occur over 14 miles in Segment 1.

Impacts may include temporary and localized disruption of resident or migratory wildlife or wildlife behavior due to increased noise, vibration, light, dust, equipment, human presence, and opportunistic predators. Increased equipment and vehicle traffic may result in increased wildlife strikes in the vicinity of habitat corridors. Habitat used for cover during movement would be impacted by ground disturbance and clearing and incidental introduction of invasives may decrease the quality of corridor habitat.

While impacts would be similar to those of the Proposed Project segment, the Crater Mountain Realignment Alternative would be located farther from the Owens River and the Tinemaha Reservoir and would avoid two river crossings, resulting in relatively less impact to wildlife movement along the river corridor than the Proposed Project. Impacts to other wildlife movement areas outside the Crater Mountain Realignment Alternative area would be the same as described for the Proposed Project.

Application of APMs. Impacts to wildlife movement from construction, due to degradation of habitat, disruption of natural movement behaviors, and direct injury or mortality, would be considered significant. Implementation of the following APMs, which were developed as part of the project, would address wildlife movement, as described in detail in Section 3.5.3.3.

- APM BIO-RES-1 (Habitat Restoration and Revegetation Plan).
- APM BIO-RES-2 (Develop Integrated Weed Management Plan).
- APM HAZ-1 (Prepare a Hazardous Materials Management Plan).
- APM WET-1 (Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats).
- APM BIO-AVI-2 (Burrowing Owl).
- APM BIO-AVI-3 (Yellow-billed Cuckoo).
- APM BIO-HERP-9 (Northern Leopard Frog).
- APM BIO-MAM-1 (Mohave Ground Squirrel).
- APM BIO-MAM-5 (Bighorn Sheep – Nelson's and Desert Bighorn Sheep).
- APM AES-8 (Night Lighting during Construction of Facilities).
- APM NOI-1 (Implement Best Management Practices for Construction Noise).

These APMs would improve habitat values, promote recovery of native vegetation, and protect habitat from pollution and contamination. Species-specific APMs are expected to reduce, in part, the likelihood and severity of injury and the likelihood of mortality of those special-status wildlife with potential to occur in the project areas, as discussed in detail in Section 3.5.3.3. APMs for night lighting and noise (AES-8 and NOI-1) would minimize disturbance of wildlife and disruption of foraging and breeding during nighttime hours. However, even with application of APMs, impacts would be significant.

Permit Conditions. SCE would also be required to comply with conditions included in ITPs from CDFW and USFWS for threatened and endangered species and candidates for listing. If the Project were approved, SCE would be required to obtain permits for take or disturbance of listed species.

Mitigation. Even though the Crater Mountain Alignment Alternative would have relatively reduced impacts to wildlife movement as compared to the Proposed Project, impacts would be significant without mitigation. Certain APMs are superseded with recommended mitigation measures to ensure that impacts would be less than significant. Other mitigation measures are recommended to avoid disturbance of

wildlife near the project area. The full description of these mitigation measures is presented in Impact BIO-1 in Section 3.5.3.3.

- Mitigation Measure BIO-1a (Worker's Environmental Awareness Program) supersedes APM WEAP.
- Mitigation Measure BIO-1b (Biological Monitoring) supersedes APM BIO-GEN-1.
- Mitigation Measure BIO-1c (Minimization of Vegetation and Habitat Impacts).
- Mitigation Measure BIO-1d (Compensation for Habitat Loss).
- Mitigation Measure BIO-1e (Pre-construction Biological Resources Surveys).
- Mitigation Measure BIO-1f (Wildlife impact avoidance and minimization).
- Mitigation Measure BIO-1g (Crotch bumble bee).
- Mitigation Measure BIO-1h (Special-status reptiles).
- Mitigation Measure BIO-1i (Desert Tortoise) supersedes APM HERP-1.
- Mitigation Measure BIO-1j (Raven Monitoring, Management, and Control Plan).
- Mitigation Measure BIO-1k (Mohave ground squirrel avoidance and minimization)
- Mitigation Measure BIO-1l (American Badger and Desert Kit Fox).
- Mitigation Measure BIO-1m (Special-status Bats) supersedes APM BIO-MAM-6.
- Mitigation Measure BIO-1n (Golden Eagle) supersedes APM BIO-AVI-4.

These mitigation measures would ensure that habitat disturbance is minimized and restricted to designated and demarcated work areas and that habitat loss would be offset. Work areas would be surveyed, and sensitive habitats and special-status wildlife would be identified, monitored, buffered and avoided, or relocated. These measures would effectively avoid significant impediments to wildlife movement in the project area. Management of work site hazards, such as speeding vehicles, holes and trenches, trash, and pets, would further prevent injury, mortality, and disturbance of wildlife moving in and through the project site. Species-specific mitigation measures would minimize and avoid impacts by surveying and buffering those species.

Mitigation measures recommended in other sections of this EIR would also reduce the severity of construction impacts to wildlife and their habitat:

- Mitigation Measure AQ-2b (Control Fugitive Dust Emissions; full text in Section 3.4.3.3, Air Quality)
- Mitigation Measure HW-1a (Drainage Erosion and Sedimentation Control Plan; full text in Section 3.11.3.3, Hydrology and Water Quality)

These mitigation measures would ensure that dust generated from construction, which could disturb wildlife, accumulate on vegetation, and impact growth of wildlife habitat, is suppressed and minimized. Erosion resulting from vegetation removal and disturbance of soils would be managed through erosion BMPs, which would prevent loss of soils and protect wildlife habitat from degradation.

Operation and Maintenance

LESS THAN SIGNIFICANT. As explained for Impact BIO-1, impacts from operations and maintenance would be less than significant.

Impact BIO-5: Cause take of protected nesting birds, including nestlings or eggs, through direct impacts to the nest or substantial nearby disturbance which could cause nest abandonment.

Construction

Impact Description. *LESS THAN SIGNIFICANT WITH MITIGATION.* Impacts to nesting birds would be similar to those described in Section 3.5.3.3, Environmental Impacts of the Proposed Project. Direct impacts to nesting birds could include loss of active nests, suitable shelter, foraging habitat, and food sources due to vegetation clearing and ground disturbance. Incidental spread of non-native weeds would decrease nesting habitat quality. Construction activities could cause disruption of nesting and foraging behavior due to a temporary increase in human presence, traffic, noise, vibration, dust, and opportunistic

predators. Construction may result in the loss of nesting habitat; however, impacts to vegetation would be in discrete, distributed locations, and would not disturb large contiguous areas of habitat. Impacts to birds due to collision with power lines and electrocution are discussed in Impact BIO-6.

While impacts to nesting birds would be similar to the Proposed Project, the Crater Mountain Realignment Alternative would be located farther from the Owens River and the Tinemaha Reservoir and would avoid two river crossings, resulting in relatively less impact to aquatic habitat and associated birds than the Proposed Project.

Application of APMs. Implementation of the following APMs would address nesting birds, as described in detail in Impact BIO-1, Section 3.5.3.3.

- APM BIO-RES-1 (Habitat Restoration and Revegetation Plan).
- APM BIO-RES-2 (Develop Integrated Weed Management Plan [IWMP]).
- APM HAZ-1 (Prepare a Hazardous Materials Management Plan).
- APM BIO-AVI-1 (Nesting Bird Management Plan).
- APM BIO-AVI-2 (Burrowing Owl).
- APM BIO-AVI-3 (Yellow-billed Cuckoo).
- APM AES-8 (Night Lighting during Construction of Facilities).
- APM NOI-1 (Implement Best Management Practices for Construction Noise).

These APMs would improve habitat values, promote recovery of native vegetation, and protect habitat from pollution and contamination. APM BIO-AVI-1 requires a Nesting Bird Management Plan (NBMP) in coordination with CPUC, BLM, CDFW, and USFWS, which would avoid potential for unauthorized take. Pre-construction nest surveys during the breeding season (January 1 through August 31), demarcation of nest buffers, monitoring of nests, and coordination with resource agencies on buffer modifications would avoid destruction and disturbance of nests and direct mortality or injury of birds, nestlings, or eggs. APM BIO-AVI-2 (Burrowing Owl) requires surveys, buffering of active burrows, and a relocation plan, which would minimize and avoid disturbance, injury, and mortality of nesting burrowing owls. APM BIO-AVI-3 (Yellow-billed Cuckoo) requires the avoidance of nesting season or pre-construction nest surveys, buffering of nests, and construction monitoring of occupied habitat, which would protect yellow-billed cuckoos from disturbance, injury, and mortality. APMs for night lighting and noise (AES-8 and NOI-1) would minimize disturbance of nesting birds during construction activities during nighttime hours. However, even with application of APMs, impacts would be significant without mitigation.

Permit Conditions. SCE would also be required to comply with conditions included in ITPs from CDFW and USFWS for threatened and endangered species and candidates for listing. If the Project were approved, SCE would be required to obtain permits for take or disturbance of listed species.

Mitigation. Even though this Alternative would have relatively reduced impacts to aquatic habitat and associated birds as compared to the Proposed Project, impacts would be significant without mitigation. Certain APMs are superseded with recommended mitigation measures to ensure that impacts would be less than significant. Other mitigation measures are recommended to avoid disturbance of nesting birds near the project area. The full description of these mitigation measures is presented in Impact BIO-1 in Section 3.5.3.3.

- Mitigation Measure BIO-1a (Worker's Environmental Awareness Program) supersedes APM WEAP.
- Mitigation Measure BIO-1b (Biological Monitoring) supersedes APM BIO-GEN-1.
- Mitigation Measure BIO-1c (Minimization of Vegetation and Habitat Impacts).
- Mitigation Measure BIO-1d (Compensation for Habitat Loss).
- Mitigation Measure BIO-1e (Pre-construction Biological Resources Surveys).
- Mitigation Measure BIO-1f (Wildlife impact avoidance and minimization).
- Mitigation Measure BIO-1n (Golden Eagle) supersedes APM BIO-AVI-4.

These mitigation measures would ensure that habitat disturbance is minimized and restricted to designated and demarcated work areas and that habitat loss would be offset. Work areas would be surveyed, and sensitive habitats and special-status wildlife would be identified, monitored, buffered and avoided, or relocated. Management of work site hazards, such as speeding vehicles, holes and trenches, trash, and pets, would further prevent injury, mortality, and disturbance of nesting birds. Mitigation Measure BIO-1n (Golden Eagle) recommends golden eagle nest surveys within a 2-mile radius of work areas. Occupied nests would be buffered to avoid disturbance of nesting eagles and abandonment of nests.

Mitigation measures recommended in other sections of this EIR would also reduce the severity of construction impacts to wildlife and their habitat:

- Mitigation Measure AQ-2b (Control Fugitive Dust Emissions; full text in Section 3.4.3.3, Air Quality)
- Mitigation Measure HW-1a (Drainage Erosion and Sedimentation Control Plan; full text in Section 3.11.3.3, Hydrology and Water Quality)

These mitigation measures would ensure that dust generated from construction, which could accumulate on vegetation and impact growth of nesting habitat, is suppressed and minimized. Erosion resulting from vegetation removal and disturbance of soils would be managed through erosion BMPs, which would prevent loss of soils and protect surrounding nesting habitat from degradation.

Operation and Maintenance

LESS THAN SIGNIFICANT. As analyzed under Impact BIO-1, impacts from operations and maintenance would be less than significant.

Impact BIO-6: Create a substantial collision and electrocution risk for birds or bats.

Construction

Impact Description. *LESS THAN SIGNIFICANT WITH MITIGATION.* Impacts from collision and electrocution would be similar to those described for Impact BIO-6 in Section 3.5.3.3, Environmental Impacts of the Proposed Project. The only difference in impacts would occur over 14 miles in Segment 1, where the Crater Mountain Realignment Alternative would be located farther from the Owens River and the Tinemaha Reservoir and would avoid two river crossings. While the alternative would not introduce new transmission facilities into locations where none existed previously; the heights of transmission lines would increase as described for the Proposed Project. Potential impacts to birds and bats may occur from collision with transmission lines that are upgraded as part of the Project.

The impact of transmission line height on collisions is highly dependent on a particular species' flight altitude and factors such as flight behavior, annual flight cycle, and habitats in the vicinity of the line (Bernardino et al., 2018). Collision mortality estimates in North America have not identified a noticeable effect on long-term population trends; however, it may increase risk for a subset of species with susceptible characteristics. Collision-related mortality is commonly attributed to a bird's morphological characteristics (vision and flight), and behavioral characteristics (migration strategy, feeding and roosting, flocking behaviors, or hunting style) (Bateman et al., 2023) and collision rates generally increase in low light conditions, during inclement weather, such as fog, rain or snow, during strong winds, and during panic flushes when birds are startled by a disturbance or are fleeing from danger (Brown, 1993; Luzenski et al., 2016). Collisions are more probable where the movements of susceptible species are the greatest, such as near wetlands, agricultural areas, valleys that are bisected by power lines, within narrow passes where power lines run perpendicular to flight paths. Several studies have shown that most observed collisions were with narrower, less visible overhead shield wires and lines that cross daily movement corridors (between roosting, nesting, and feeding areas) (Luzenski et al., 2016). However, results suggested that well-marked lines or lines with increased diameter, even in movement corridors, can lessen collision risk.

Collision and electrocution hazard conditions for the Project are expected to be similar to existing conditions. No new transmission facilities would be introduced into locations where none existed previously; however, the height of lines would increase and the change in line height may increase the risk of collision to a subset of vulnerable species.

Since riparian and wetland habitats attract birds and bats for daily movement such as to and from foraging, shelter, and water resources, siting the alignment farther from the Owens River and the Tinemaha Reservoir may result in relatively less impact from collision and electrocution compared to the Proposed Project. Co-locating the lines under this alternative with existing LADWP transmission lines would further reduce impacts by keeping lines grouped together in one location.

Mitigation. Collision risks to birds can be minimized after construction by marking the lines, which can be better detected by birds and avoided (Bateman et al., 2023; Bernardino et al., 2018). Birds may generally be expected to detect and avoid marked transmission lines (Bernardino et al., 2018; Luzenski et al., 2016); however; species with susceptible characteristics, as previously described, may still be at increased risk of collision.

Although this alternative would require installation of new transmission facilities immediately adjacent to the two larger existing LADWP transmission lines and, therefore, would not create taller obstructions to birds than already exists, unmarked lines would present a hazard to birds flying in the area, resulting in a significant collision impact.

The PEA (SCE, 2020a) states that all subtransmission facilities for the Project would be designed to be avian-safe, following the intent of Suggested Practices for Avian Protection on Power Lines: the State of the Art in 2006 (APLIC, 2006). All subtransmission facilities would be evaluated for potential collision risk and, where determined to be high risk, lines would be marked with collision reduction devices in accordance with Reducing Avian Collisions with Power Lines: The State of the Art in 2012 (APLIC, 2012; SCE, 2020a). However, these specifications are not incorporated into an APM.

Although the Crater Mountain Realignment Alternative would have relatively reduced impacts from collision and electrocution as compared to the Proposed Project, impacts would still be significant. As described for the Proposed Project, the following mitigation measure is recommended to ensure that risk of collision and electrocution are minimized to the greatest extent feasible. A detailed description is presented in Impact BIO-1 in Section 3.5.3.3. Full text of the measure is provided in Section 3.5.5.

- Mitigation Measure BIO-6a (Bird and Bat Collision)

By implementing recommended APLIC guidelines and design features that discourage perching by raptors, use markers to visually warn birds, and maintain enough distance between lines to prevent electrocution of large birds, injury and mortality from collision and electrocution would be minimized.

Operation and Maintenance

LESS THAN SIGNIFICANT. As analyzed under Impact BIO-1, impacts from operations and maintenance would be less than significant.

Impact BIO-7: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

NO IMPACT. As described in Section 3.5.3.3, Environmental Impacts of the Proposed Project, goals and policies for biological resources in the Inyo County General Plan are not applicable, pursuant to General Order 131-E. There are no conflicts with local ordinances, therefore no significant impacts would occur under Impact BIO-7. No mitigation measures are required.

Impact BIO-8: Conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.

NO IMPACT. The difference in impacts to biological resources between the Proposed Project segment and the Crater Mountain Realignment Alternative would occur over 14 miles in Segment 1, which overlaps with the BLM DRECP area. The DRECP identified detailed Conservation Management Actions (CMAs) that must be implemented on BLM-administered lands to avoid and minimize impacts to environmental resources, and that are incorporated into the CDCA and Bishop RMP (see Section 3.5.3.1). As part of SCE's Plan of Development (POD) submitted to the BLM, SCE included the APMs listed in Table 3.5-1 to comply with DRECP CMAs.

The Crater Mountain Realignment Alternative would not conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan, and no significant impacts would occur. No mitigation measures are required.

4.8.5. Cultural Resources

4.8.5.1. Environmental Setting of the Crater Mountain Realignment Alternative

The Crater Mountain Realignment Alternative is approximately 14 miles long and would be located west of Segment 1 of the Proposed Project and adjacent to existing LADWP transmission lines.

The Direct API for this alternative consists of 320 acres. There are 41 archaeological resources considered to be eligible for the California Register of Historic Resources (CRHR) in the Direct API (38 precontact resources and 3 historic resources) with potential for adverse effects. Prehistoric sites include lithic and ceramic scatters, habitation sites, bedrock milling features, rock features, and petroglyphs. Historic-era components of multicomponent sites include a survey marker, a water conveyance system, and refuse scatters. Cultural resources within the Crater Mountain Realignment Alternative are listed and described in EIR Appendix 5A, Table Ap.5-9.

Eight eligible built environment resources or portions of built resources (in the case of long linear resources) are within the CEQA Areas of Direct and Indirect Impacts. These resources include transmission lines, water conveyance systems, railroads, a campground, and paved or unpaved roads and highways.

4.8.5.2. Environmental Impacts of the Crater Mountain Realignment Alternative

Impact CUL-1: Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines §15064.5.

Direct Impacts

SIGNIFICANT AND UNAVOIDABLE. As described for the Proposed Project in Section 3.6.3.5, the cultural resources in the Owens Valley are non-renewable resources that provide an important window into California's past, including Native American traditional lifeways. As described in detail in Section 3.6.3.1 (Impact Analysis Approach), most resources are eligible to the CRHR under Criterion 4 for research potential and any direct impacts to these resources could jeopardize that research potential.

In addition to the potential impacts to the known historical resources, there is the potential for construction activities to result in exposure of unknown buried archaeological resources that could be considered historical resources under CEQA, especially in Segment 1 (the most archaeologically dense area of the Proposed Project). If construction resulted in damage to unknown buried historical resources that are eligible for the CRHR, as described in more detail below, a significant impact would occur.

Direct construction-related impacts to known and unknown buried archaeological resources would be reduced in severity with implementation of Mitigation Measures CUL-1a through CUL-1l (the full text of these mitigation measures is presented in Section 3.6):

- Mitigation Measure CUL-1a (Retain a Cultural Resources Specialist)
- Mitigation Measure CUL-1b (Develop Data Recovery Plans for Known Historical Archaeological Resources)
- Mitigation Measure CUL-1c (Implement Cultural Resources Environmental Awareness Training)
- Mitigation Measure CUL-1d (Prepare and implement a Cultural Resources Management Plan; *supersedes APM CUL-1*)
- Mitigation Measure CUL-1e (Cultural Resources Monitoring)
- Mitigation Measure CUL-1f (Tribal Monitoring)
- Mitigation Measure CUL-1g (Remove Structures by Helicopter in Culturally Sensitive Areas)
- Mitigation Measure CUL-1h (Leave All Foundations in Place for Structures Removed in Culturally Sensitive Areas)
- Mitigation Measure CUL-1i (Avoid Disturbance Within Environmentally Sensitive Areas)
- Mitigation Measure CUL-1j (Mitigate Loss from Dismantling of Historic-Era "Tower Line" Transmission Lines (P-36-010316)
- Mitigation Measure CUL-1k (Avoid and/or Mitigate Loss from Direct Impacts to Historic-Era Archaeological Resources Contributing to the Rand Mining District (P-15-007069)
- Mitigation Measure CUL-1l (Avoid Damage to Manzanar Airfield)

As summarized above, Mitigation Measures CUL-1a through CUL-1l are designed to avoid or reduce impacts to known and unknown buried historical resources to the extent feasible. These measures include avoiding resources where feasible by establishing protected Environmentally Sensitive Areas (ESAs) during construction and maintenance, providing archaeological and Native American monitoring, evaluation of discoveries, and data recovery excavations of historical resources that cannot be avoided. Implementation of these measures would substantially reduce the potential for unmitigated loss of information value. However, despite the inclusion of these feasible mitigation measures, the alternative would occur in an area of exceptionally high archaeological sensitivity and continuing cultural importance to descendant communities. Ground disturbance in this highly sensitive area with a high density of known resources has a high likelihood of impacting known archaeological resources and encountering significant buried deposits whose scientific and cultural values extend beyond the recoverable data alone. While data recovery, as defined in Mitigation Measure CUL-1b, can mitigate for the loss of information potential, it cannot fully offset the loss of the physical integrity, spatial relationships, and cultural associations that contribute to the significance of these resources.

Therefore, although the recommended mitigation measures would reduce adverse effects to the extent feasible, the construction of the alternative would result in the permanent loss of portions of resources within a culturally rich and sensitive archaeological area. As such, the impact on historical resources would remain significant and unavoidable, even after implementation of all mitigation.

Indirect Impacts

LESS THAN SIGNIFICANT. The visual changes resulting from the replacement of Proposed Project structures with other steel structures would be similar, in nature and scale, to the existing subtransmission structures. Therefore, the Proposed Project would not cause a substantial indirect adverse change in the significance of a historical resource, and no mitigation is necessary.

Impact CUL-2: Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines §15064.5.

Construction

LESS THAN SIGNIFICANT WITH MITIGATION. No unique archaeological resources have been identified in the Direct APE. As such, the alternative would not impact known unique archaeological resources. However, previously unknown buried unique archaeological resources could be discovered and damaged, or destroyed, during ground disturbing work. This would cause a substantial adverse change in the significance of the archaeological resources, should they be determined to be unique archaeological resources under CEQA. Damage or destruction of a buried archaeological resource would constitute a significant impact absent mitigation. Implementation of Mitigation Measures CUL-1a through CUL-1i would evaluate and protect unanticipated discoveries of unique archaeological resources, thereby ensuring that this impact would be less than significant.

Operations and Maintenance

LESS THAN SIGNIFICANT WITH MITIGATION. As described in Section 3.6.3.4*,* maintenance activities could include ground disturbing activities, such as access road grading and pole replacements, that could occur in previously disturbed or undisturbed locations. As such, maintenance activities could cause a significant impact to unknown buried unique archaeological resources in the Direct APE.

To ensure that potential maintenance impacts are less than significant, Mitigation Measures CUL-1c requires annual WEAP training for personnel responsible for maintenance activities during which the crew would be made aware of procedures to follow in the event of unanticipated discoveries and CUL-1d requires maintenance personnel have access to a non-confidential GIS database showing ESAs which will be avoided by maintenance activities. Therefore, with implementation of these two mitigation measures, impacts to unknown unique archaeological resources from maintenance activities would be less than significant.

Impact CUL-3: Disturb human remains, including those interred outside of formal cemeteries.

Construction

LESS THAN SIGNIFICANT WITH MITIGATION. In addition to the known resources that contain human remains, there is the possibility that previously unknown burials or human remains could be identified during ground disturbing construction activities. The discovery of human remains would constitute a significant impact.

The Proposed Project includes APM CUL-4 (Properly Treat Human Remains; see Table 3.6-10), which defines the process to be implemented should human remains be discovered. APM CUL-4 is considered adequate to ensure that impacts to unknown buried human remains would not be significant. However, additional mitigation is required to supplement APM CUL-4, because human remains discovered during construction may be a component of one or more larger archaeological sites. As discussed for Impact CUL-1, the APMs do not provide adequate protection for this more extensive potential impact. Therefore, Mitigation Measures CUL-1a through CUL-1h are also required to ensure that impacts associated with the discovery of human remains are less than significant. These measures would require worker environmental awareness training, and a CRMP that outlines avoidance feasible measures and procedures to follow in the event of the discovery of unanticipated human remains. Additionally, these mitigation measures would require archaeological and tribal monitoring and reduce the level of ground disturbance in culturally sensitive areas. With the implementation of Mitigation Measures CUL-1a through CUL-1h, impacts to known and unknown human remains would be less than significant.

Operations and Maintenance

LESS THAN SIGNIFICANT WITH MITIGATION. As described in Section 3.6.3.4*,* maintenance activities could include ground disturbing activities, such as access road grading and pole replacements, that could occur in previously disturbed or undisturbed locations. As such, maintenance activities could cause a significant impact to unknown buried resources including human remains in the Direct APE.

SCE has committed to implementing APM CUL-4, which defines processes that would address human remains discoveries. APM CUL-4 provides adequate process and protection for potential impacts to unknown buried human remains. However, additional mitigation will be needed to supplement APM CUL-4 to ensure proper treatment of known human remains, which may be components of larger archaeological sites. Mitigation Measure CUL-1c requires annual WEAP training for personnel responsible for maintenance activities during which the crew would be made aware of procedures to follow in the event of unanticipated discoveries to human remains. Mitigation Measure CUL-1d requires maintenance personnel have access to a non-confidential GIS database showing ESAs which will be avoided by maintenance activities. Therefore, impacts to known and unknown human remains from maintenance activities will be less than significant.

4.8.6. Tribal Cultural Resources

4.8.6.1. Environmental Setting of the Crater Mountain Realignment Alternative

Section 3.7.1 defines the ethnographic setting of the region, as well as Tribal Cultural Resources identified in the record search and the ethnographic literature review completed for this EIR. Table 3.7-2 (Summary of Tribal Cultural Resources Data Collection) and Table 3.7-3 (Overview of AB 52 Consultation Process Activities) summarize the Native American consultation that was completed by the CPUC; additional detail is presented in Appendix 5B. This information is all relevant to this alternative as well as the Proposed Project segment that it would replace.

4.8.6.2. Environmental Impacts of the Crater Mountain Realignment Alternative

Impact TCR-1: Cause a substantial adverse change in the significance of a tribal cultural resource that is listed or eligible for listing in the California Register of Historical Resources.

SIGNIFICANT AND UNAVOIDABLE. As described in Section 3.7.1.6 (Summary of AB 52 Native American Consultation)*,* one new Tribal Cultural Resource (TCR) was identified during formal consultation: the Owens Valley Landscape (OVL). The OVL is situated within both the Direct and Indirect APE and is at risk of experiencing significant direct and indirect impacts from the Proposed Project. As a non-renewable TCR, the OVL offers critical insight into California's historic landscape and the traditional lifeways of Native American communities. It holds ongoing cultural, spiritual, and educational value, as local Native American groups continue to engage with the OVL to sustain and revitalize their cultural practices.

Direct construction-related impacts to known and unknown buried TCRs would be reduced in severity with implementation of Mitigation Measures TCR-1a and TCR-1b (see full text in Section 3.7), and CUL-1a through CUL-1i (see full text Section 3.6). The mitigation measures are as follows:

- Mitigation Measure TCR-1a (Conceal Exposed Tribal Cultural Resources After Construction)
- Mitigation Measure TCR-1b (Provide Funding for Tribal Resource Mapping and Monitoring Training Programs)
- Mitigation Measure CUL-1a (Retain a Cultural Resources Specialist)
- Mitigation Measure CUL-1b (Develop Data Recovery Plans for Known Archaeological Resources)
- Mitigation Measure CUL-1c (Implement a Cultural Resources Environmental Awareness Training)
- Mitigation Measure CUL-1d (Prepare and implement a Cultural Resources Management Plan; *supersedes APM CUL-1*)

- Mitigation Measure CUL-1e (Cultural Resources Monitoring)
- Mitigation Measure CUL-1f (Tribal Monitoring)
- Mitigation Measure CUL-1g (Remove Structures by Helicopter in Culturally Sensitive Areas)
- Mitigation Measure CUL-1h (Leave All Foundations in Place for Structures Removed in Culturally Sensitive Areas)
- Mitigation Measure CUL-1i (Avoid Disturbance Within Environmentally Sensitive Areas)

Tribal consultation has indicated that while resources of value are located throughout the OVL, the more sensitive resources were along the Proposed Project route, and not along the tribal cultural resources along the Crater Mountain Realignment Alternative.

Impact TCR-2: Cause a substantial adverse change in the significance of a resource determined to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, considering the significance of the resource to a California Native American tribe.

NO IMPACT. Based on the information provided during formal AB 52 consultation, record searches, and ethnographic research, the Proposed Project would not impact a TCR as determined by the CPUC. No documented resources that the CPUC has determined, backed by substantial evidence, to be a TCR have been identified within the Direct or Indirect APE. Therefore, the Proposed Project would not impact any TCRs as determined by the CPUC through construction or maintenance and no mitigation is required.

4.8.7. Energy

4.8.7.1. Environmental Setting of the Crater Mountain Realignment Alternative

The Crater Mountain Realignment Alternative maintains the same environmental setting as the Proposed Project, described in Section 3.8.1. The alternative would also require construction activities in the existing I-C Project corridor because the existing structures would be removed after the alternative line is energized. Construction activities and ground disturbance would be limited to the area around each existing structure, use of access roads, and use of material yards.

4.8.7.2. Environmental Impacts of the Crater Mountain Realignment Alternative

Impact EN-1: Result in wasteful, inefficient, or unnecessary consumption of energy.

LESS THAN SIGNIFICANT. The potential impacts associated with the construction and operations and maintenance of this alternative would be similar to the Proposed Project as this alternative would involve similar construction and operations and maintenance activities. As in the Proposed Project, the Crater Mountain Realignment Alternative would not result in wasteful, inefficient, or unnecessary consumption of energy, and as such, impacts would be less than significant.

Impact EN-2: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

LESS THAN SIGNIFICANT. The potential impacts associated with the construction and operations and maintenance of this alternative would be similar to the Proposed Project as this alternative would involve similar construction and operations and maintenance activities. As in the Proposed Project, the Crater Mountain Realignment Alternative would not obstruct state or local plans for renewable energy or energy efficiency, and as such, impacts would be less than significant.

4.8.8. Geology, Soils, and Paleontology

4.8.8.1. Environmental Setting of the Crater Mountain Realignment Alternative

The setting for the Crater Mountain Realignment Alternative is very similar to Segment 1 of the Proposed Project. This alternative would require construction of new structures in the alternative alignment, as well

as removal of the existing I-C Project structures would be removed after the alternative line is energized. Construction activities and ground disturbance would be limited to the area around each existing structure, use of access roads, and use of material yards.

The Crater Mountain Realignment Alternative is underlain by the same and similar primarily granular soil series and associations as the as the Proposed Project, with potential for erosion ranging from low to high for both wind and water from low to moderate for expansion. Both the Crater Mountain Realignment Alternative and the Proposed Project cross relatively flat to gently sloping topography and would not be subject to slope failures.

Faults and Ground Shaking. The Crater Mountain Realignment Alternative and the corresponding portion of the Proposed Project are both in close proximity to and crossed by several strands of the Alquist-Priolo zoned Owens Valley fault zone and are each within and crossed by two associated Alquist-Priolo zones (as described in Sections 3.9.1.6 and 3.9.1.8 and shown in Figure 3.9-2a through Figure 3.9-2d (Alquist Priolo Fault Zone Map, presented at the end of this section). In locations along both routes, strands of the Owens Valley fault zone traverse parallel to and along the alignments with Alquist-Priolo zones. This alternative would be subject to strong to very strong seismically induced ground shaking from ground accelerations ranging from 0.55 to 1.05 g, the same as the corresponding Proposed Project section.

Liquefaction. Portions of this alternative, similar to the corresponding Proposed Project section, are underlain by young Quaternary sediment that are potentially liquefiable due to very shallow to shallow groundwater levels in the Owens Valley. Based on limited groundwater level data (DWR, 2023), groundwater levels range from approximately 5 to just under 60 feet bgs along the Crater Mountain Realignment and from approximately 5 to 35 feet bgs along the Proposed Project. Both routes would have liquefiable, however areas underlying with young sediments and groundwater levels of greater than 50 feet bgs along the Crater Mountain Realignment would have slightly less potential for liquefaction.

Subsidence. The Crater Mountain Realignment Alternative and the corresponding Proposed Project section are located within the same groundwater basin (Owens Valley basin) and would be subject to the same low-medium subsidence potential, however the 2015 to 2023 vertical subsidence data for this area indicates little to no subsidence (DWR, 2023).

Paleontology. According to a paleontological resources report prepared for the realignment segments (Bargas Environmental Consulting, 2024), the Crater Mountain Realignment Alternative is underlain by similar geologic units with a generally similar paleontological sensitivity as the corresponding Proposed Project section. Geologic units that would be affected by the Crater Mountain Realignment Alternative consist of young Quaternary sedimentary units, specifically basalt and andesite flows (Qpv^{b}) and Quaternary alluvium (Qal), which are respectively classified as low and low to moderate potential for significant paleontological resources (**PFYC 2** and **PFYC 2 to 3**, respectively**)**. The corresponding Proposed Project section also includes geologic units with these same levels of paleontological potential, but unlike the Crater Mountain Realignment Alternative, the Proposed Project section also includes geologic units with very low potential (**PFYC 1**). Therefore, the Crater Mountain Realignment Alternative would be considered to have a slightly higher potential for significant paleontological resources compared to the corresponding Proposed Project section, although this difference in sensitivity would not be considered substantial.

4.8.8.2. Environmental Impacts of the Crater Mountain Realignment Alternative

Impact GSP-1: Expose people or structures to adverse effects, including the risk of loss, injury, or death, due to rupture of a known earthquake fault, seismic ground shaking, or liquefaction.

Fault Rupture

LESS THAN SIGNIFICANT. The Crater Mountain Realignment Alternative and the corresponding section of the Proposed Project have the same potential for surface fault rupture; both are crossed by and along strands

of the Alquist-Priolo zoned Owens Valley fault zone and cross and are within their associated Alquist-Priolo zones. Therefore, the potential for adverse impacts related to surface fault rupture is the same for the Crater Mountain Realignment and the corresponding section of the Proposed Project. Implementation of geotechnical recommendations and industry standards, and compliance with applicable regulations, including CPUC GO95, would reduce potential impacts related to damage to Project structures due to fault rupture along the Crater Mountain Realignment Alternative.

However, completion of SCE's geotechnical investigation and compliance with CPUC GO 95 would result in identification of the locations of faults relative to project structures and would prevent placement of structures on faults traces. SCE would relocate the structures as necessary; impacts related to fault rupture would be less than significant along this alternative.

Project operations and maintenance activities would include routine inspections and emergency repair within substations and of Project structures, including inspection and repair of damaged structures after an earthquake event. Operations and maintenance activities would be no more intense than base, and the Project would therefore not have a significant impact from operations and maintenance activities.

Seismic Ground Shaking

LESS THAN SIGNIFICANT. The Crater Mountain Realignment Alternative would be subject to the same level of strong to very strong ground shaking as the corresponding section of the Proposed Project (with estimated ground accelerations of 0.55 to 1.05 g) in the event of a large earthquake. Thus, this alternative would have the same potential for adverse impacts related to seismically induced ground shaking as the corresponding section of the Proposed Project. The new structures for the Crater Mountain Realignment Alternative would be designed as required by California Public Utilities Commission General Orders 95. SCE would conduct geotechnical investigations to provide an evaluation of geotechnical conditions prior to final project design and construction. Above-ground poles would be designed to meet wind loading criteria, which generally exceed seismic loading criteria, thus reducing and/or eliminating the risk of these structures failing due to ground shaking. Design of new structures to the above referenced recommendations, guidelines and standards, and applicable regulations would ensure that any adverse impacts from ground shaking are less than significant.

Impacts of project operation of the Crater Mountain Realignment Alternative would generally be the same as for the Proposed Project and would include and inspection and emergency repair of damage to structures and project components after an earthquake event, resulting in a less than significant impact.

Liquefaction

LESS THAN SIGNIFICANT. The Crater Mountain Realignment and corresponding portion of the Proposed Project are both located in areas of relatively flat to gently sloping terrain and with no landslides mapped along or near either route, and therefore would be unlikely to experience seismically induced slope failures. The potential for the adverse effects from seismically induced slope failures would be the same for the Crater Mountain Realignment as for the corresponding section of the Proposed Project. The Manzanar Realignment is underlain by similar potentially liquefiable young sediments as the Proposed Project, however the Crater Mountain Realignment has slightly deeper groundwater levels of approximately 5 to greater than 50 feet bgs along portions of its route that reduce the liquefaction potential along its alignment as compared to the Proposed Project with groundwater levels of approximately 5 to 35 feet bgs. Thus, adverse effects due to liquefaction along the Crater Mountain Realignment are expected to be slightly less than along the corresponding section of the Proposed Project.

SCE will conduct geotechnical investigations prior to final design and engineering to evaluate the depth to the water table, liquefaction potential, physical properties of subsurface soils, and slope stability and may include recommendations for the final engineering design, as needed. Adverse impacts related to seismically induced slope failures and liquefaction along the Crater Mountain Realignment would be reduced

to less than significant with implementation of geotechnical design recommendations and standard engineering practices, and compliance applicable regulations, including CPUC General Order 95.

Project operation would generally be the same as for the Proposed Project, including operations and maintenance activities that would include inspection and emergency repair of damage to structures and project components after an earthquake event, with the exception that repairs to the LADWP access road would likely be conducted by LADWP, resulting in a less than significant impact. No mitigation is required.

Impact GSP-2: Result in substantial soil erosion or the loss of topsoil.

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* Similar ground disturbing construction activities would occur for the Crater Mountain Realignment as for the Proposed Project, including removal of poles, construction of poles and towers, and grading for spur roads and rehabilitation of access roads as needed. The same and similar soil series with erosion potentials ranging from low to high for both wind and water are located along both the Crater Mountain Realignment and the corresponding section of the Proposed Project. Thus, the Crater Mountain Realignment would have the same potential for erosion as the corresponding section of the Proposed Project. However, if the alternative is selected, construction would occur along both the existing ROW (to remove structures) and the alternative ROW (to install structures), so there would be more total ground disturbance and greater potential for soil erosion to occur.

The Crater Mountain Realignment Alterative would be required to obtain NPDES General Permit for Storm Water Discharges Associated with Construction Activity, prepare and submit a project specific Storm Water Pollution Prevention Plan (SWPPP), and implement SCE APMs (APM BIO-HERP-2, APM BIO-MAM-1, and BIO-RES-1) which would help to reduce soil erosion impacts. Implementation of Mitigation Measure HW-1a (Implement a Drainage, Erosion, and Sedimentation Control Plan) would ensure that soil erosion impacts are less than significant.

Operations and Maintenance. *LESS THAN SIGNIFICANT WITH MITIGATION.* Repairs done to existing facilities, such as repairing or replacing existing poles and towers could result in ground disturbance and soil erosion. Spur road maintenance could require limited grading. Compliance with Project SWPPP requirements and implementation of Mitigation Measure HW-1a (Implement a Drainage, Erosion, and Sedimentation Control Plan) would reduce the potential for adverse impacts related to erosion from operations and maintenance activities along the Manzanar Realignment to less than significant.

Mitigation Measure for Impact GSP-2

HW-1a **Implement a Drainage, Erosion, and Sedimentation Control Plan.** (See full text in Section 3.12)

Impact GSP-3: Be located on a geologic unit or soil that is unstable, or would become unstable as a result of the Project, and result in on- or off-site landslide, subsidence, liquefaction or collapse.

Construction and Operations and Maintenance. *LESS THAN SIGNIFICANT*. As discussed above under Impact GSP-3, the Crater Mountain Realignment is located on similar relatively flat to gently sloping terrain that is unlikely to experience slope failures as the corresponding portion of the Proposed Project. Therefore, the Crater Mountain Realignment Alternative would have the same potential for slope instability and failures as the Proposed Project. The Crater Mountain Realignment Alternative and the Proposed Project cross the same valley and groundwater basin (Owens Valley) and would be subject to the same potential to adverse effects due to subsidence. The Owens Valley is listed as having low to moderate potential for subsidence (DWR, 2014), however the Crater Mountain Realignment and corresponding Proposed Project area has exhibited little to no subsidence between 2015 and 2023 (DWR 2023). Therefore, there would be no impact related to triggered slope instability or to ground surface subsidence. No mitigation is required.

Impact GSP-4: Be located on expansive soil creating substantial risks to life or property.

Construction and Operations and Maintenance. *LESS THAN SIGNIFICANT.* The same primarily granular (sandy) and non-expansive soil series underlie both the Crater Mountain Realignment and the Proposed Project segment that it would replace; however, some soils with moderate expansion potential underlie both alignments. Adverse impacts related to expansive soils would be less than significant (Class III) with project design per geotechnical recommendations and standard engineering practices, and compliance with relevant regulations, including CPUC GO 95.

Project operation would generally be the same as for the Proposed Project, including operations and maintenance activities that would include and inspection and emergency repair of damage to structures and project components, with the exception that repairs to the LADWP access road would likely be conducted by LADWP, resulting in a less than significant impact. No mitigation is required.

Impact GSP-5: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* The Crater Mountain Realignment Alternative is located on similar geologic units with generally similar paleontological resource potential (**PFYC 2** and **PFYC 2 to 3**) as the corresponding Proposed Project section. Because the Proposed Project section also includes geologic units with very low potential (**PFYC 1**), the Crater Mountain Realignment Alternative would be considered to have a slightly higher potential for significant paleontological resources compared to the corresponding Proposed Project section, although this difference in sensitivity would not be considered substantial. The Crater Mountain Realignment Alternative would include the same types and amounts of ground disturbing activities as the corresponding Proposed Project section. Therefore, both routes would have similar potential to damage or destroy paleontological resources in units designated **PFYC 2 to 3**, which are units with the potential for significant paleontological resources. Similar to the Proposed Project, with incorporation of APMs PAL-1 to PAL-4 (see Table D.9-1), including implementation of the PRMMP that was prepared for the Proposed Project (Material Culture Consulting, 2022) consistent with APM PAL-1, as well as compliance with applicable regulations, potential damage to or destruction of scientifically important paleontological resources would be avoided, as any resources that are encountered during construction would be recovered and curated for future study. The process for monitoring, recovery, curation, and reporting of all resources must be approved by BLM and CPUC, thereby ensuring that most scientifically important paleontological resources will be permanently protected.

However, the Unanticipated Discover Protocol defined in APM PAL-1 does not specifically cite that carbonate-rich paleosols are indicators of the presence of microvertebrates. These paleosols require screening of a test sample of sediment following the guidelines SVP (2010). Mitigation Measure GSP-7a (Unanticipated Paleontological Resource Protocol) supersedes the protocol component of APM PAL-1 in order to avoid the destruction or disturbance of significant paleontological resources, specifically microvertebrate fossils. Implementation of the defined testing would ensure that potentially valuable resources are identified. Therefore, impacts would be less than significant with implementation of this mitigation measure.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* Only limited ground disturbance in existing disturbed areas would be required during Project operation, primarily related to maintenance of access and spur roads and repairs to structures. Ground disturbance in these previously disturbed areas is unlikely to encounter paleontological resources; therefore, similar to the Proposed Project, impacts from this alternative would be less than significant.

Mitigation Measures for Impact GSP-5

GSP-5a **Unanticipated Discovery Paleontological Resource Protocol Update** (Supersedes the protocol defined in APM PAL-1) (Full text in Section 3.9.3.3)

4.8.9. Greenhouse Gas Emissions

4.8.9.1. Environmental Setting of the Crater Mountain Realignment Alternative

The Crater Lake Realignment Alternative maintains the same environmental setting as the Proposed Project, described in Section 3.10.1. The alternative would also require construction activities in the existing I-C Project corridor because the existing structures would be removed after the alternative line is energized. Construction activities and ground disturbance would be limited to the area around each existing structure, use of access roads, and use of material yards.

4.8.9.2. Environmental Impacts of the Crater Mountain Realignment Alternative

Impact GHG-1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

LESS THAN SIGNIFICANT. The type and intensity of construction activity would be substantially the same as in the Proposed Project. Due to the comparable type and intensity of activity, the annual and daily rates of emissions would be nearly the same as in the Proposed Project. This alternative is not expected to generate GHG emissions that would have a significant impact on the environment; impacts would be less than significant, and no mitigation is required.

Impact GHG-2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing greenhouse gas emissions.

LESS THAN SIGNIFICANT. The potential impacts associated with the construction and operations and maintenance of this alternative would be similar to the Proposed Project as this alternative would involve similar construction and operations and maintenance activities. These would not conflict with any applicable GHG reduction plan, policy, or regulation, and as such, impacts would be less than significant, and no mitigation is required.

4.8.10. Hazards and Hazardous Materials

4.8.10.1. Environmental Setting of the Crater Mountain Realignment Alternative

The environmental setting for the Crater Mountain Alignment Alternative is very similar to the Proposed Project's Segment 1 as discussed in Section 3.11.1, in Inyo County. The Crater Mountain Alignment Alternative would be at a greater distance from US 395 and would be located adjacent to the existing larger LADWP transmission corridor.

The Crater Mountain Alignment Alternative would also require construction activities in the existing I-C Project corridor because the existing structures would be removed after the alternative line is energized. Construction activities and ground disturbance would be limited to the area around each existing structure, the use of material yards, and the use of access roads.

4.8.10.2. Environmental Impacts of the Crater Mountain Realignment Alternative

Impact HH-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

LESS THAN SIGNIFICANT. The potential impacts associated with the construction and operation of the Crater Mountain Alignment Alternative would be the same as those of the Proposed Project segment that this alternative would replace. The alternative would involve similar construction and operational activities and would require the same type of transport, use, and disposal of hazardous materials. The same applicant proposed measure (APM HAZ-1, Prepare a Hazardous Materials Management Plan) would be implemented for this alternative as for the Proposed Project. The implementation of APM HAZ-1 would ensure that impacts to the public or the environment through the transport, use, or disposal of hazardous materials are less than significant impacts for this alternative.

Impact HH-2: Create a significant risk to human health or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials.

LESS THAN SIGNIFICANT. The potential impacts associated with the construction and operation of the Crater Mountain Alignment Alternative would be the same as the Proposed Project. This alternative would involve similar construction and operational activities and would represent similar potential hazards to the public or environment with respect to reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Implementation of APM HAZ-1 (Prepare a Hazardous Materials Management Plan) for the alternative would ensure that impacts are less than significant impacts with respect to reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Impact HH-3: Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.

LESS THAN SIGNIFICANT. The potential impacts associated with the construction of the Crater Mountain Alignment Alternative would be similar to the Proposed Project. While this alternative would not pass through or run adjacent to any previously identified hazardous material sites, the alternative would involve construction in proximity to areas that may contain hazardous constituents. This implementation of APM HAZ-2, Soil Management Plan, would ensure the appropriate identification, sampling, management, and disposal of potentially contaminated soils if encountered during construction activities. With implementation of APM HAZ-2, impacts related to construction of the Crater Mountain Alignment Alternative would be less than significant.

Impact HH-4: Create a hazard to the public or the environment through mobilization of contaminants or hazards, including mining-related contaminated soils, pesticides, herbicides, and Valley Fever spores.

LESS THAN SIGNIFICANT WITH MITIGATION. As described in Section 3.3, Agriculture and Forestry, Inyo County permitted uses along this alternative include lands zoned as OS-40, and include farm and ranch operations such as livestock, orchards, vineyards, field and truck crops, nurseries, greenhouses, vegetables, flower gardening and other agricultural-related fields. Therefore, grading of access and spur roads and excavation of transmission structure foundations may encounter soil contaminated with pesticides and herbicides in the area of this proposed alternative alignment, which would be a significant impact. Mitigation Measure HH-4a (Identify Soil Contamination) is recommended to ensure that impacts are less than significant.

It is also possible that Valley Fever spores could be mobilized during construction, which would be a significant impact, so dust control is important. Mitigation Measure AQ-2b (Control Fugitive Dust Emissions) is recommended to reduce this impact to less than significant levels.

Mitigation Measures for Impact HH-4

HH-4a Identify Soil Contamination (Supplements APM HAZ-2

AQ-2b Control Fugitive Dust Emissions

Impact HH-6: Create a hazard to the public or workers due to discovery of military munitions and unexploded ordnance.

LESS THAN SIGNIFICANT WITH MITIGATION. While there are no active or former military installations or FUDS in the areas that would be impacted by construction activities for this alternative, it is possible that historic military activity left unexploded ordnance within the construction areas. As shown in Figure 4-4 (Fossil Falls Realignment Alternative), approximately 6 miles of this alternative are near, but outside of the western boundary of the China Lake NAWS. The grading of access and spur roads and excavation of transmission structure foundations could encounter these military munitions and unexploded ordnance, which would be a significant impact. In order to ensure that impacts are not significant, Mitigation Measure H-6a (UXO Identification, Training, and Reporting Plan) is recommended.

Mitigation Measures for Impact HH-6

HH-6a Unexploded Ordnance (UXO) Identification, Training, and Reporting Plan

Impact HH-7: Expose workers or the public to excessive shock hazards.

LESS THAN SIGNIFICANT WITH MITIGATION. The potential impacts associated with the construction and operation of this alternative would the same as the Proposed Project, i.e., a significant impact. Grounding measures would be required to be incorporated into the design and construction of the facility through Mitigation Measure HH-8a (Implement grounding measures to avoid shocks) to provide a conductive path to ground thereby avoiding a buildup of electrical potential that could discharge as an electrical shock. With implementation of this mitigation measure, this alternative would result in less than significant impacts related to induced currents.

Mitigation Measures for Impact HH-8

HH-8a Implement grounding measures to avoid shocks

4.8.11. Hydrology and Water Quality

4.8.11.1. Environmental Setting of the Crater Mountain Realignment Alternative

The Crater Mountain Alignment Alternative shares similar environmental settings as the Proposed Project's Segment 1 as discussed in Section 3.12.1. Due to its close proximity, this alternative would be located within the same groundwater basin region (Owens Valley Groundwater Basin) with similar surface water conditions as the Proposed Project.

This alternative would also require construction activities in the existing I-C Project corridor because the existing structures would be removed after the alternative line is energized. Construction activities and ground disturbance would be limited to the area around each existing structure, the use of material yards, and the use of access roads.

4.8.11.2. Environmental Impacts of the Crater Mountain Realignment Alternative

Impact HW-1: Violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.

Construction

LESS THAN SIGNIFICANT WITH MITIGATION. The impacts associated with the construction of this alternative would be similar to those resulting from the Proposed Project because this alternative would involve similar construction activities and would affect the same water resources. While the APMs and SWPPP requirements would reduce effects, they are not sufficiently detailed or prescriptive to ensure that impacts would be less than significant. Therefore, Mitigation Measure HW-1a (Drainage, Erosion, and Sedimentation Control Plan) is required to ensure development and implementation of a detailed DESCP. The implementation of this measure would result in less than significant impacts for construction.

Mitigation Measures for Impact HW-1

HW-1a Drainage, Erosion, and Sedimentation Control Plan (DESCP) (see Section 3.12.3.3 for full text)

Operations and Maintenance

LESS THAN SIGNIFICANT. The impacts from operations and maintenance would be similar to activities that are ongoing to maintain the existing subtransmission lines. For the Crater Mountain Realignment Alternative, these impacts would occur in the alternative ROW and not in the existing Segment 1 ROW. The Crater Mountain Realignment Alternative would be located immediately adjacent to two larger LADWP transmission lines, which currently undergo similar maintenance activities. Because the operations and maintenance activities would occur within the areas already disturbed by construction of the alternative itself, no new ground disturbance would be expected during maintenance. SCE would implement the APMs that apply to maintenance activities. Impacts from operations and maintenance would be less than significant.

Impact HW-2: Substantially decrease groundwater supplies or interfere with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

Construction

LESS THAN SIGNIFICANT. The potential impacts associated with the construction of the Crater Mountain Realignment Alternative would be the same as for the Proposed Project. This alternative would traverse the same groundwater basin (Owens Valley Groundwater Basin) as the Proposed Project and would be expected to use the same sources of water for construction dust control. As a result, this alternative would result in similar effects as the Proposed Project and would maintain the sustainable management of the Owens Valley Groundwater Basin.

No APMs would be required (same as for the Proposed Project). The implementation of this alternative would result in less than significant impacts and no mitigation is required.

Operations and Maintenance

LESS THAN SIGNIFICANT. The impacts from operations and maintenance activities would be less than significant; see discussion under Impact HW-1.

Impact HW-3: 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, increase surface runoff, exceed stormwater drainage capacity, or redirect flood flows.

Erosion and Siltation

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* The potential impacts associated with the construction of the Crater Mountain Realignment Alternative would be the same as for the Proposed Project. This alternative would involve similar construction activities. However, if the alternative is selected, construction would occur along both the existing ROW (to remove structures) and the alternative ROW (to install structures), so there would be more total ground disturbance and greater potential for erosion and siltation to occur.

Even with implementation of four APMs and the SWPPP, construction of the alternative may still result in significant impacts to water quality depending on the extent and scale of earth disturbance from construction grading and excavation work. Mitigation Measure HW-1a (Drainage, Erosion, and Sedimentation Control Plan) would require further detailed review and delineation of the construction process by a professional engineer or Qualified SWPPP Developer and require additional protective measures that are not defined in the APMs and exceed SWPPP requirements. This measure is recommended to ensure that potential impacts to water quality standards or degradation of surface water quality due to erosion impacts or disturbance of drainage patterns are less than significant. With implementation of this measure, construction impacts would be less than significant.

Mitigation Measure for Impact HW-3

HW-1a Drainage, Erosion, and Sedimentation Control Plan

Operations and Maintenance. *LESS THAN SIGNIFICANT.* The impacts from operations and maintenance activities would be less than significant; see discussion under Impact HW-1.

Surface Runoff

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* The potential impacts associated with the construction of the Crater Mountain Alternative would be the same as for the Proposed Project. This alternative would involve similar construction activities. APM WET-1 (Avoidance of jurisdictional waters, wetlands and riparian areas) would be implemented but would not be sufficient to ensure that the required control for potential localized flooding impacts activities for this alternative are less than significant. Therefore, Mitigation Measure HW-1a (Drainage, Erosion, and Sedimentation Control Plan) is recommended to ensure that potential flooding impacts during construction are less than significant.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* The impacts from operations and maintenance activities would be less than significant; see discussion under Impact HW-1.

Stormwater Drainage Systems

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* The potential impacts associated with the construction of this alternative would be the same as for the Proposed Project. Mitigation Measure HW-1a (Drainage, Erosion, and Sedimentation Control Plan) is recommended in addition to APM BIO-RES-1 (Habitat Restoration and Revegetation Plan) and APM HAZ-1 (Prepare a Hazardous Materials and Waste Management Plan) to ensure that these alternatives would not substantially alter the existing drainage patterns or create a substantial increase in surface runoff. Impacts would be less than significant with mitigation.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* The impacts from operations and maintenance activities would be less than significant; see discussion under Impact HW-1.

Flood Flows

Construction. *LESS THAN SIGNIFICANT.* The Crater Mountain Alignment Alternative would involve similar construction activities and create potential impacts similar to the Proposed Project. This alternative would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or increase surface runoff that would impede or redirect flood flows, and thus impacts would be less than significant and no mitigation is required.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* The impacts from operations and maintenance activities would be less than significant; see discussion under Impact HW-1.

Impact HW-4: Risk release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones.

Construction. *NO IMPACT.* There is no likelihood of a tsunami or seiche occurring in the Crater Mountain Realignment Alternative area. In the event of a flood inundation event during construction, the project work areas have the potential to release pollutants such as sediments from areas where the earth has been disturbed and hazardous materials commonly associated with construction activities and construction equipment and vehicle use, such as petroleum products, cleaning fluids, etc. However, this impact would be minimized with SCE's implementation of the SWPPP BMPs, APM WET-1 (Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats), APM HAZ-1 (Hazardous Materials Management Plan), and compliance with the Clean Water Act and California regulations. As a result, this impact would be less than significant, and no mitigation is required.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* The impacts from operations and maintenance activities would be less than significant; see discussion under Impact HW-1. This alternative would be located further from the Owens River than the Proposed Project; while there is minimal flood risk, pollutants would not be stored along the ROW and the release of pollutants associated with project operation is unlikely.

Impact HW-5: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Construction. *LESS THAN SIGNIFICANT.* Similar to the Proposed Project, this alternative is located within the South Lahontan Basin Area of the Lahontan Regional Water Quality Control Plan (Basin Plan). This alternative would involve the same types of construction activities and would be subjected to the same water quality control permitting (NPDES permit) and associated SWPPP requirements, which would help achieve the water quality objectives in the Basin Plan as the Proposed Project. As discussed under Impact HW-2, like the Proposed Project, this alternative would traverse the same areas managed by the same sustainable groundwater management plans (Owens Valley Basin Groundwater Sustainability Plan) and would not conflict with the groundwater sustainability programs in these plans. In summary, this alternative would not conflict with the applicable water quality and groundwater sustainability programs in these plans. This impact would be less than significant and no mitigation is required.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* The impacts from operations and maintenance activities would be less than significant; see discussion under Impact HW-1. This alternative would require minimal water supply during operations and maintenance, so there would be negligible reduction in recharge.

4.8.12. Land Use and Planning

4.8.12.1. Environmental Setting of the Crater Mountain Realignment Alternative

The Crater Mountain Realignment Alternative is located within Inyo County on land managed by federal and regional agencies subjected to various land use and management decisions, including lands managed

by the BLM Bishop Field Office, and private lands within Inyo County. Portions of the Crater Mountain Realignment Alternative are immediately adjacent to the Section 368 Energy Corridor. The Crater Mountain Realignment Alternative is approximately 60 feet east of the Crater Mountain ACEC/Wilderness Study Area, which is under the jurisdiction of the BLM's Bishop Field Office's RMP planning area and the CDCA Plan. The CDCA Plan, as amended by the DRECP LUPA, establishes CMAs to conserve, protect, and restore these landscapes.

The Crater Mountain Realignment Alternative traverses portions of undeveloped lands designated by Inyo County as SFL (State and Federal Land) and lands zoned as OS-40 (Open Space with a 40-acre minimum) that permit single-family dwelling, farm and ranches operations, animal hospitals or kennels, wildlife refuges, hunting and fishing preserves, and wilderness areas and wilderness uses (Inyo County, 2001).

4.8.12.2. Environmental Impacts of the Crater Mountain Realignment Alternative

Impact LU-1: 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. No impacts related to land use would result from the Crater Mountain Realignment Alternative. The Crater Mountain Realignment Alternative would not physically divide an existing community because it would be within an existing LADWP transmission corridor adjacent to existing transmission lines. A portion of the Crater Mountain Realignment Alternative is located within BLM-administered lands, similar to the Proposed Project. The Crater Mountain Realignment Alternative is located immediately east of the BLM Crater Mountain ACEC/Wilderness Study Area. While SCE would use existing access roads within portions within the protected lands, SCE has existing rights to use these roads. The alternative and the structure locations would not pass through the areas with special designations on BLM lands.

The same BLM land use policies under the CDCA Plan that apply to the Proposed Project would apply to the Crater Mountain Alignment Alternative. The Crater Mountain Realignment Alternative would comply with all federal conditions and measures and would therefore not conflict with any federal land use plans, policies, or regulations. Similar to the Proposed Project, the Crater Mountain Realignment Alternative is located on undeveloped lands zoned as OS-40 under the Inyo County General Plan and the Inyo County Zoning Ordinance. As with the Proposed Project, the Crater Mountain Realignment Alternative would be consistent with the LADWP use of the transmission corridor and would not conflict with any OVLMP policies. The Crater Mountain Realignment Alternative would not cause a significant environmental impact due to a conflict with plans, policies or regulations adopted by the Inyo County General Plan for the purpose of avoiding or mitigating an environmental effect not analyzed elsewhere in this EIR. There would be no impact.

4.8.13. Mineral Resources

4.8.13.1. Environmental Setting of the Crater Mountain Realignment Alternative

The mineral resources along this alternative segment are the same as those of the Proposed Project. There are no State-classified MRZs present within the Crater Mountain Realignment Alternative. There are four locatable mineral resources within 1 mile of the Crater Mountain Realignment Alternative including three non-metallic mineral resources and one metallic mineral resource. The only aggregate site that is located within 1 mile of the Crater Mountain Realignment Alternative is the Fish Springs #1 Pit, which is approximately 0.20 miles east of the Crater Mountain Realignment Alternative alignment (DOC, 2018).

4.8.13.2. Environmental Impacts of the Crater Mountain Realignment Alternative

Impact MR-1: 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.

Impact MR-2: Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

NO IMPACT FOR IMPACTS MR-1 AND MR-2. The aggregate site (Fish Springs #1 Pit) would not be affected by the alternative's activities. Further, there are no active mineral resource recovery sites within 1 mile of the Crater Mountain Realignment Alterative.

4.8.14. Noise

4.8.14.1. Environmental Setting of the Crater Mountain Realignment Alternative

The land use around the Crater Mountain Realignment Alternative is largely the same as the portion of Segment 1 that the alternative would be replacing and consists of open space. The Crater Mountain Realignment Alternative would be located in undeveloped open space areas and would not pass through any developed residential areas, though it would pass near two clusters of residential properties.

The only sensitive receptors within 1,000 feet from the Crater Mountain Realignment Alternative are a group of residential properties on Birch Creek Road, approximately 250 feet east of the Crater Mountain Realignment Alternative. See Figure 4-9, Noise-Sensitive Receptors: Crater Mountain Alternative.

The Crater Mountain Realignment Alternative would be further from US 395 than the Proposed Project alignment and would therefore experience less traffic noise than the Proposed Project area. Ambient noise levels in the Crater Mountain Realignment Alternative area would be similar to ambient noise levels for undeveloped areas in Segment 1 (between 35 and 45 dBA Ldn) and noise levels would increase in proximity to US 395 due to traffic noise.

No airports are located in proximity to the Crater Mountain Realignment Alternative and no airport land use plan is located within the alternative area.

Two impacts related to noise were identified for the Proposed Project. These impacts also would apply to the Crater Mountain Realignment Alternative. No construction for the Crater Mountain Realignment Alternative would be located in any airport land use plan area or within the noise impact zone of any nearby airport. Construction workers would not be exposed to excessive airport noise and therefore no impact from airport noise would occur. Impact N-3 will not be discussed further.

4.8.14.2. Environmental Impacts of the Crater Mountain Realignment Alternative

Impact N-1 Expose persons to or generate a substantial temporary or permanent increase in noise levels in excess of established standards.

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* The impacts associated with Impact N-1 resulting from this alternative would be similar to those discussed under Impact N-1 in Section 3.15.3.3 for the Proposed Project. Construction noise associated with the Crater Mountain Realignment Alternative would temporarily increase ambient noise levels in the vicinity of the alternative construction area, including the area of existing subtransmission structure removal, and the magnitude of the increase would vary depending on the activity. Noise levels produced for the Crater Mountain Realignment Alternative would be comparable to noise levels produced from construction of the Proposed Project as the same equipment and vehicles would be used to construct the alternative alignment. The noise standards for unincorporated Inyo County exempts construction noise from noise level limits as long as construction occur within the jurisdiction's allowable construction hours, which is 7:00 a.m. and 7:00 p.m. except Sundays and federal holidays.

The nearest sensitive receptors within 1,000 feet of the Crater Mountain Realignment Alternative are located approximately 250 feet away from the right-of-way. Noise levels at the sensitive receptor 250 feet from the Crater Mountain Realignment Alternative would be approximately 61 dB during structure

installation and up to 80 dB due to helicopter use. Similar to the Proposed Project, construction would generally be performed from 7:00 a.m. and 7:00 p.m., Monday through Saturday; however, at limited times some construction may be required or finished after these hours, and on Sundays. The need for night work is dependent on several factors which include outage restrictions, and permit conditions, which are unknown at this time. SCE assumes that cutovers at each substation and each major highway could require night work. The duration of this work is scope and location specific but would generally fall within a period of 8 to 12 hours. The temporary increase in noise levels would be very short in duration (a few days) and would generally occur during allowed construction hours of 7 a.m. to 7 p.m., which is consistent with the standards in the local general plan. Due to the very short and limited use of night work outside of the locally approved construction hours, the project construction noise would not exceed the standards in the local general plan.

Mitigation Measures N-1a (Implement Helicopter Noise Control Strategy) would be required for this alternative, as it would for the segment of the Proposed Project that this alternative would replace. Impacts would be less than significant with mitigation.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* The impacts from operations and maintenance would be similar to activities that are ongoing to maintain the existing subtransmission lines. For the Crater Mountain Realignment Alternative, these impacts would occur in the alternative ROW and not in the existing Segment 1 ROW. The Crater Mountain Realignment Alternative would be located immediately adjacent to two larger LADWP transmission lines, which currently undergo similar maintenance activities. Because the operations and maintenance activities would occur within the areas already disturbed by construction of the alternative itself, no new ground disturbance would be expected during maintenance. SCE would implement the APMs that apply to maintenance activities. Impacts from operations and maintenance would be less than significant.

Impact N-2: Generate or expose persons to excessive groundborne vibration.

Construction. *LESS THAN SIGNIFICANT.* Construction of the Crater Mountain Realignment Alternative would require use of the same construction equipment and vehicles as the Proposed Project and would therefore generate the same vibration levels as the Proposed Project. Vibration from construction equipment and activities would be perceptible at distances closer than 50 feet from construction activities but would not exceed the annoyance threshold (0.10 PPV) unless activities occur at distances closer than 22 feet. The closest receptor of vibrations from the Crater Mountain Realignment Alternative is approximately 360 feet away, and vibration would not be perceptible at a distance of 360 feet from the construction area. Thus, the impact would be less than significant. No mitigation is required.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* The impacts from operations and maintenance activities would be less than significant see discussion under Impact N-1.

4.8.15. Population and Housing

4.8.15.1. Environmental Setting of the Crater Mountain Realignment Alternative

The environmental setting presented in Section 3.16.1 also applies to the Crater Mountain Realignment Alternative.

4.8.15.2. Environmental Impacts of the Crater Mountain Realignment Alternative

Impact PH-1: Induce substantial population growth in an area, either directly or indirectly.

Construction. *NO IMPACT.* The alternative would also require construction activities in the existing I-C Project corridor because the existing structures would be removed after the alternative line is energized.

Construction activities and ground disturbance would be limited to the area around each existing structure, use of access roads, and use of material yards.

As described in Section 3.16.3.3, the Proposed Project would not result in the construction of any housing or commercial buildings or result in a substantial increased population. Similar to the Proposed Project, the Crater Mountain Realignment Alternative would not result in population or housing growth. No impact would occur.

Operations and Maintenance. *NO IMPACT.* There would be no change in SCE's permanent staffing levels required to maintain the upgraded transmission lines or upgraded substations for the Crater Mountain Realignment Alternative. Therefore, no population growth would occur as a result of operation of this alternative segment, and no impact would occur.

Impact PH-2: Displace a substantial number of existing people or housing.

Construction. *NO IMPACT.* The Crater Mountain Realignment Alternative would be in or immediately adjacent to an existing transmission ROW, designated for use by existing transmission lines and compatible uses such as parks or parking lots. This alternative would displace no housing or buildings. No need for new replacement housing would result from implementation of this alternative. There would be no impact.

The alternative would not displace a substantial number of people from housing, and there would be no impact related to displacement.

Operations and Maintenance. *NO IMPACT.* There would be no change in SCE's permanent staffing levels required to maintain the upgraded transmission lines or upgraded substations for the Crater Mountain Realignment Alternative. Therefore, no displacement of existing people or housing would occur as a result of operation of this alternative segment, and no impact would occur.

4.8.16. Public Services

4.8.16.1. Environmental Setting of the Crater Mountain Realignment Alternative

The environmental setting presented in Section 3.17.1 also applies to the Crater Mountain Realignment Alternative.

4.8.16.2. Environmental Impacts of the Crater Mountain Realignment Alternative

Impact PS-1: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives.

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* The Crater Mountain Realignment Alternative would include construction of the replacement subtransmission facilities and would require activities similar to the Proposed Project. The alternative would also require construction activities in the existing I-C Project corridor because the existing structures would be removed after the alternative line is energized. Construction activities and ground disturbance would be limited to the area around each existing structure, use of access roads, and use of material yards.

The impacts to public services would also be substantially similar to those described in Section 3.17.3.3 for the Proposed Project. Similar to the Proposed Project, the Crater Mountain Realignment Alternative would not substantially affect the provision of existing fire or emergency services or require the provision of service beyond existing capacities. The Crater Mountain Realignment Alternative construction activities would not require the expansion of existing fire stations or fire protection services with implementation of the Fire Management Plan.

However, construction activities may interfere with emergency response times, related to traffic issues, which would be a significant impact. SCE has proposed APM TRA-1, Traffic Control Measures, to ensure that traffic controls are used. However, with implementation of APM TRA-1, there would be a significant impact, because the APM does not require that the traffic control measures be reviewed and approved by the affected jurisdictions and does not adequately reduce impacts to emergency service vehicle access. Proposed Mitigation Measure T-1b (Prepare traffic control plans) requires traffic control plan(s) be prepared by SCE, to supplement SCE commitments provided in APM TRA-1 to further reduce potential impacts to emergency service vehicle operations through any roadway affected by the project. With implementation of Mitigation Measure T-1b (Prepare traffic control plans), the impact would be less than significant.

Impacts related to law enforcement, ambulatory services, schools, and medical facilities to support the construction of the Crater Mountain Realignment Alternative would not require changes to these existing services and would be identical to those described in Section 3.17.3.3, therefore resulting in a less than significant impacts.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* The impacts from operations and maintenance would be similar to activities that are ongoing to maintain the existing subtransmission lines. For the Crater Mountain Realignment Alternative, these impacts would occur in the alternative ROW and not in the existing Segment 1 ROW. The Crater Mountain Realignment Alternative would be located immediately adjacent to two larger LADWP transmission lines, which currently undergo similar maintenance activities. Because the operations and maintenance activities would occur within the areas already disturbed by construction of the alternative itself, no new ground disturbance would be expected during maintenance. SCE would implement the APMs that apply to maintenance activities. Impacts from operations and maintenance would be less than significant.

4.8.17. Recreation

4.8.17.1. Environmental Setting of the Crater Mountain Realignment Alternative

The Crater Mountain Realignment Alternative intersects with one recreational resource, the Crater Mountain ACEC. The Crater Mountain Realignment Alternative would intersect the Crater Mountain ACEC for approximately 2.2 miles, on the eastern border of the ACEC. The Proposed Project would not cross this ACEC; it is located parallel to the northeastern border of the ACEC, approximately 0.3 mile away from the Crater Mountain ACEC. This alternative is over 2 miles further away from the Tinemaha Reservoir Viewing Area, which is very near the Proposed Project.

There is one recreational resource near this alternative segment: the Taboose Creek Campground is a county facility, located 14 miles north of Independence. It provides 35 camp spaces with amenities including vault toilets, tables, grills, fire rings, stream fishing, and a water well (Inyo County, 2025a and 2025b). The campground is currently crossed by the LADWP transmission corridor and the two high-voltage transmission lines in that corridor. The Crater Mountain Realignment Alternative would be installed east of those existing lines, which would result in the 115 kV conductors passing over the existing vault toilets (located about 400 feet west of Tinemaha Road), as shown in Figure 4-9. The red circle in Figure 4-10 shows the vault toilets and the red line shows the transmission line ROW.

The alternative would also require construction activities in the existing I-C Project corridor because the existing structures would be removed after the alternative line is energized. Construction activities and ground disturbance would be limited to the area around each existing structure, use of access roads, and use of material yards.

4.8.17.2. Environmental Impacts of the Crater Mountain Realignment Alternative

Impact REC-1: Disrupt recreational activities, temporarily blocking or reducing access and visitation to recreational areas.

The construction and operations and maintenance activities that would take place along this alternative segment would be similar to the Proposed Project, as described in Section 3.18.3.3 (Segment 1).

Construction

LESS THAN SIGNIFICANT WITH MITIGATION. Compared to the Proposed Project, the alternative would be further away from the Tinemaha Reservoir Viewing Area, but within the Crater Mountain ACEC, which would not be affected by the Proposed Project. However, the construction of the new subtransmission line east of the LADWP corridor would likely affect the vault toilet facilities at the Taboose Creek Campground.

Taboose Creek Campground. As illustrated in Figure 4-9 (Taboose Creek Campground), the campground is currently crossed by the LADWP ROW. The construction of the Crater Mountain Realignment Alternative may require relocation of the vault toilet facilities. Therefore, Mitigation Measure REC-1a (Coordinate construction schedule and activities and identify alternative recreation areas) would be required so SCE would coordinate construction timing and potential facility replacement actions with Inyo County.

Crater Mountain ACEC. This alternative would cross approximately 2.2 miles of the Crater Mountain ACEC. The ACEC would experience direct effects from construction of the Crater Mountain Realignment Alternative. However, these effects would be limited to the areas in and around the ROW for this alternative. Since the alternative would be installed in a position adjacent to the existing LADWP transmission structures and would primarily use existing access roads, the construction of the alternative would be adjacent to previously disturbed areas. The temporary effects of construction would not block or reduce access or visitation, or disrupt recreational activities in the ACEC, due to the location of the alternative on the far eastern edge of the ACEC.

Tinemaha Reservoir Viewing Area. The Crater Mountain Realignment Alternative would be located approximately 2.5 miles west of the Tinemaha Reservoir Viewing Area. At this distance, the recreational resource would not be affected by construction, and impacts would be less than significant.

No other recreational resources would be affected by this alternative. Due to the limited range of construction effects, in both time and extent, construction impacts would be less than significant, and no mitigation is required.

Removal of Existing Structures. Construction of the Crater Mountain Realignment Alternative would require removal of the existing structures along the 13.7-mile stretch that would be replaced by the alternative, including direct effects on the Tinemaha Reservoir Viewing Area. As required for Segment 1 of the Proposed Project (see Section 3.18.3.4), Mitigation Measures AQ-2b (Control Fugitive Dust Emissions) and N-1a (Helicopter Noise Control Strategy) shall be implemented here in order to ensure than impacts are less than significant.

Operations and Maintenance

LESS THAN SIGNIFICANT. Operation and maintenance of the alternative would not result in a disruption of recreational activities, due to the location of the alternative near an existing transmission line, and use of existing access roads. Operations and maintenance work would occur in a different location from the existing ROW, and the existing facilities would be removed as part of construction. Operations and maintenance work for the alternative facilities is expected to be less intense because they would be newly constructed, compared to operations and maintenance for the existing facilities due to their age. Impacts would be adverse but less than significant.

Impact REC-2: Damage recreational trails or facilities.

Construction, Operations and Maintenance

NO IMPACT. The Crater Mountain Realignment Alternative would not cross any recreational trails or facilities that could be damaged. Although the alternative would be within the Crater Mountain ACEC, there are no trails or facilities that are a part of the recreational resource that would intersect with the ROW for the alternative. Therefore, there would be no impact.

4.8.18. Transportation

4.8.18.1. Environmental Setting of the Crater Mountain Realignment Alternative

The Crater Mountain Realignment Alternative crosses Birch Creek Road, Fuller Road, Tinemaha Creek, Taboose Creek Road, Tinemaha Road, and Old Highway 395 to the west of US 395 prior to crossing US 395. Following the crossing of US 395 (from west to east) the alternative crosses Colosseum Road and crosses the Los Angeles Aqueduct before reconnecting with the Proposed Project alignment. With exception of a Tinemaha Road crossing west of US 395, the additional alternative route crossings would not be crossed by the Proposed Project.

All other road crossings under this alternative would be the same as the Proposed Project (described in Section 3.19.1.2).

4.8.18.2. Environmental Impacts of the Crater Mountain Realignment Alternative

Impact T-1: Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* The impacts associated with Impact T-1 resulting from this alternative would be similar to those discussed under Impact T-1 in Section 3.19.3.3 for Proposed Project trips affecting traffic flow and congestion and temporary lane closures. The alternative would also require construction activities in the existing I-C Project corridor because the existing structures would be removed after the alternative line is energized. Construction activities and ground disturbance would be limited to the area around each existing structure, the use of material yards, and use of access roads.

There would be no impacts expected with respect to bus service, rail service, or pedestrian/bicyclist movement associated with this alternative segment. The alternative is not located near paved roadways, bus routes, or rail lines.

Mitigation Measures T-1a (Prepare Construction Transportation Plan), T-1b (Prepare Traffic Control Plan(s)), and T-1c (Obtain permits or approvals for crossing or working in railroad rights-of-way) would be required for this alternative, as they would for the segment of the Proposed Project that this alternative would replace. Impacts would be less than significant with mitigation.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* Once constructed, operations and maintenance of this alternative would have negligible impacts on the roadway system so would not conflict with existing plans or ordinances. The inspection and maintenance activities would generate a very small volume of vehicular traffic. If a major repair were required at a particular location, the temporary transportation impacts would be short-term, limited in scale, and require trip volumes significantly less than the construction impacts addressed above. Impacts would be less than significant.

Impact T-2: Conflict or be inconsistent with State CEQA Guidelines Section 15064.3(b) regarding vehicle miles traveled.

Construction. *LESS THAN SIGNIFICANT.* The impacts associated with Impact T-2 with respect to vehicle trips, vehicle movement, and vehicle miles traveled would be similar for this alternative as for the Proposed Project (see Section 3.19.3.3). The two segments are located very near each other and would use the same roads and equipment. The northern and southern endpoints are at the Proposed Project locations. There would be no mitigation required for this alternative and impacts would be less than significant.

Operations and Maintenance. *NO IMPACT.* Upon completion of construction, all truck trips and worker commute trips related to construction activities would cease. The inspection and maintenance activities would generate a very small volume of vehicular traffic. If a major repair were required at a particular location, the temporary transportation impacts would be short-term, limited in scale, and require trip volumes significantly less than the construction impacts addressed above. Therefore, operation of the Project would have no impacts related to substantial or sustained increase in VMT.

Impact T-3: Result in inadequate emergency access.

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* The Crater Mountain Realignment Alternative would have similar potential impacts with respect to temporary lane or road closures and emergency vehicles as discussed for Impact T-3 in Section 3.19.3.3 for the Proposed Project. Thus, this alternative would be required to implement Mitigation Measure T-1b (Prepare Traffic Control Plan(s)). Impacts would be less than significant with mitigation.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* Maintenance activities for the alternative would occur primarily within the subtransmission ROW and would use existing unpaved access roads for the LADWP transmission facilities. Movement of emergency vehicles would not be affected.

Impact T-4 Require the temporary closure of lanes or roadways resulting in a substantial increase in roadway hazards.

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* The Crater Mountain Realignment Alternative would have similar potential impacts with respect to temporary lane or road closures and roadway hazards as discussed for Impact T-4 in Section 3.19.3.3 for the Proposed Project. Thus, this alternative would be required to implement Mitigation Measure T-1b (Prepare Traffic Control Plan(s)). Impacts would be less than significant with mitigation.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* Maintenance activities for the alternative would occur primarily within the subtransmission ROW and would use existing unpaved access roads for the LADWP transmission facilities. Road or lane closure are not anticipated. The impacts from operations and maintenance activities would be less than significant.

Impact T-5: Increase roadway hazards through damage to road surfaces.

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* The Crater Mountain Realignment Alternative would have similar potential impacts with respect to roadway hazards and damage as discussed for Impact T-5 in Section 3.19.3.3 for the Proposed Project. Thus, this alternative would be required to implement Mitigation Measure T-5a (Repair roadways damaged by construction activities). Impacts would be less than significant with mitigation.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* Maintenance activities for the alternative would occur primarily within the subtransmission ROW and would use existing unpaved access roads for the LADWP transmission facilities. Roadway damage is not anticipated. The impacts from operations and maintenance would be less than significant; see discussion under Impact T-1.

Impact T-6: Conflict with FAA recommendations to reduce hazards to navigable airspace, an airport land use plan, or restrictions to airspace related to active military flights.

Construction*. NO IMPACT.* There is no impact applicable to construction because this impact applies to operating structures with conductors in place.

Operations and Maintenance. *NO IMPACT.* The Crater Mountain Realignment Alternative segment would not result in a significant impact navigable airspace or airport land use plans. This alternative is not near DOD facilities, but like the Proposed Project, it would be located within broad areas of low flying military aircraft. However, this alternative would be constructed immediately adjacent to existing larger and taller transmission infrastructure owned by LADWP. As a result, the height of the alternative structures would create no impact with respect to airspace conflicts.

Impact T-7: Create a hazard to the public or the environment through the transport of heavy loads with helicopters.

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* The Crater Mountain Realignment Alternative would have similar potential impacts with respective helicopter use hazards as discussed for Impact T-7 in Section 3.19.3.3 for the Proposed Project. Thus, Mitigation Measure T-7a (Prepare and implement a final helicopter use plan) would be required. Impacts would be less than significant with mitigation.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* Operations and maintenance activities are unlikely to require helicopter use. The infrequent use of a helicopter for would not result in a significant impact given the location of this alternative; see discussion under Impact T-1.

4.8.19. Utilities and Service Systems

4.8.19.1. Environmental Setting of the Crater Mountain Realignment Alternative

The environmental setting presented in Section 3.20.1 also applies to the Crater Mountain Realignment Alternative, except for the Alternative's proximity to other transmission lines. In the Crater Mountain Realignment, the 115 kV I-C subtransmission line would be removed from its existing location in SCE's ROW, and installed adjacent to an existing LADWP transmission corridor that contains two larger transmission lines. This alternative would be in closer proximity to the LA Aqueduct headgates and the Owens River than the Proposed Project. Both the Proposed Project and the alternative segment would cross US 395 once in this segment, but the Crater Mountain Realignment would be located at a greater distance from US 395.

4.8.19.2. Environmental Impacts of the Crater Mountain Realignment Alternative

Impact US-1: Require new water supply entitlements or place demands on local water providers.

Construction. *LESS THAN SIGNIFICANT.* The Crater Mountain Realignment Alternative would include construction of the replacement subtransmission facilities and would require activities similar to the Proposed Project.

The alternative would also require construction activities in the existing I-C Project corridor because the existing structures would be removed after the alternative line is energized. Construction activities and ground disturbance would be limited to the area around each existing structure and use of access roads.

Due to the similar segment lengths (14.0 miles for the alternative compared with 13.7 miles for the Proposed Project segment), water requirements would be similar. No new water supply entitlements or significant demands on local water providers would result. As discussed in Section 3.12.3.3, the Proposed Project's conservative estimate of approximately 1,000 acre-feet of annual water consumption represents approximately 12 percent of the 2025 estimated MWA supply surplus, and approximately 0.17 percent of

the water used for agriculture and exports in Inyo County and thus would not require a new water supply or place demands on local water providers. Therefore, because of the volume of groundwater that would be used during construction when compared to the existing groundwater supplies in the area, the impact would be less than significant.

Operations and Maintenance. *NO IMPACT.* Operations and maintenance activities along the Crater Mountain Realignment Alternative would be similar to those occurring for the Proposed Project and for the two larger LADWP transmission lines, immediately adjacent to this alternative, which currently undergo similar maintenance activities. Given the very small potential use of water during maintenance activities, there would be no impact on water supplies.

Impact US-2: Generate solid waste in excess of state or local regulations or in excess of the capacity of local infrastructure.

Construction. *LESS THAN SIGNIFICANT.* The Crater Mountain Realignment Alternative would include construction of the replacement subtransmission facilities and would require activities similar to the Proposed Project. The Crater Mountain Realignment Alternative would produce a similar amount of solid waste as the Proposed Project, which is within the capacity of landfill facilities. The impact would be less than significant.

Operations and Maintenance. *NO IMPACT.* Similar to the Proposed Project, operations and maintenance activities for the Crater Mountain Realignment Alternative may require replacement of project components as is done with the existing subtransmission line. These activities would not generate significant quantities of solid waste. Therefore, there would be no impact.

Impact US-3 Disrupt existing pipelines and utility systems or cause a collocation accident.

Construction. *LESS THAN SIGNIFICANT.* The Crater Mountain Realignment Alternative would include construction of the replacement subtransmission facilities and would require activities similar to the Proposed Project. As with the Proposed Project, SCE would contact Underground Service Alert to identify any existing underground utilities in the construction zone. Therefore, the impact would be less than significant.

Operations and Maintenance. *NO IMPACT.* During operations and maintenance of this alternative, there would be ongoing periodic needs to repair or replace project components. As is done currently, SCE would coordinate with other utilities prior to construction that may affect other utility facilities. There would be no impact compared with current operation.

4.8.20. Wildfire

4.8.20.1. Environmental Setting of the Crater Mountain Realignment Alternative

The land use around the Crater Mountain Realignment Alternative is largely the same as Segment 1 of the Proposed Project. The majority of the vegetation along the alternative alignment consists of shrublands. Steeper slopes occur in Segment 1 of the Proposed Project, south of Fish Springs, compared to the alternative alignment.

The Crater Mountain Realignment Alternative would be located in undeveloped open space areas and does not pass through any developed residential areas and is further away from US 395 than the project alignment. The majority of the Crater Mountain Realignment Alternative alignment is located within high FHSZs in SRAs and FRAs, as shown on Figures 3.21-1a (Fire Hazard Severity Zones Segment 1 North) and 3.21-2 (CPUC High Fire Threat District).

4.8.20.2. Environmental Impacts of the Crater Mountain Realignment Alternative

Impact WF-1: Substantially impair emergency response or emergency evacuation.

Construction. *LESS THAN SIGNIFICANT.* No emergency evacuation routes are located in the Crater Mountain Realignment Alternative area or crossed by the alternative. Similar to the Proposed Project, the Crater Mountain Realignment Alternative is not expected to significantly impact traffic circulation or increase demands on existing emergency response services during temporary construction activities within the Crater Mountain Realignment or at the location of the existing structures that would be removed. The Crater Mountain Realignment Alternative would also implement APM TRA-1 that requires the coordination with local authorities, including emergency responders, regarding construction schedules and temporary road closures. With implementation of APM TRA-1, construction of the Crater Mountain Realignment Alternative would not interfere with emergency response or evacuation plans. Impacts during construction would be equivalent to the Proposed Project and would be less than significant.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* Operations and maintenance activities for the Crater Mountain Realignment Alternative would be similar to existing operations and maintenance performed at the existing subtransmission line and substations. The alternative would be located in a different area, adjacent to LADWP transmission lines. The alternative alignment, similar to the Proposed Project would involve a crossing of US 395 and crossings of a few small local roads. Operations and maintenance of the Crater Mountain Realignment Alternative would not increase impacts on emergency access or emergency evacuation. Impacts would be equivalent to the Proposed Project and would be less than significant.

Impact WF-2: Exacerbate wildfire risks, due to slope, prevailing winds, and other factors, that would thereby expose people to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire.

Construction. *LESS THAN SIGNIFICANT.* Construction of the Crater Mountain Realignment Alternative would occur along the alignment within areas that are designated as high FHSZs in SRAs and FRAs. The Crater Mountain Realignment Alternative construction areas and alignment include areas that contain vegetation within and adjacent to wildlands similar to the existing subtransmission line, which would be removed. Construction-related activities within areas located in or near wildlands have the potential to ignite a wildland fire, similar to construction activities for the Proposed Project. Similar to the Proposed Project, a Fire Prevention and Emergency Response Plan would be developed as part of APM HAZ-3 to address the risks of wildfire during construction of the Crater Mountain Realignment Alternative. With implementation of APM HAZ-3, the impact from construction of the Crater Mountain Realignment Alternative would be less than significant.

Implementation of the Crater Mountain Realignment Alternative would not expose new areas to risk of wildfire because the Crater Mountain Realignment Alternative would be adjacent to the existing LADWP transmission lines. The Crater Mountain Realignment Alternative would involve removal of the existing SCE subtransmission line from the existing ROW and would install stronger and taller steel poles that would increase the clearance with the ground and vegetation and thereby reduce the potential for fire ignition compared to existing conditions in SCE ROW.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* Maintenance activities necessary for the Crater Mountain Realignment Alternative would be similar to the Proposed Project and existing subtransmission lines. SCE would comply with all current federal and State laws related to vegetation clearance and fire prevention. SCE would also implement its Wildfire Mitigation Plan as required under SB 901 during operations and maintenance activities along the Crater Mountain Realignment Alternative. Therefore, operations and maintenance of the Crater Mountain Realignment Alternative would not exacerbate wildfire risks. Impacts of the Crater Mountain Realignment Alternative related to wildfire risk would be equivalent to the Proposed Project and would be less than significant.

Impact WF-3: Require the installation or maintenance of 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.

LESS THAN SIGNIFICANT. Construction activities would involve construction of a new subtransmission line and removal of an existing subtransmission line. As discussed above in Impact WF-2, with the implementation of SCE protocols defined in its example Transmission Line Project Fire Plan (EIR Appendix 8) and the requirements defined in APM HAZ-3, construction of the Crater Mountain Realignment Alternative would not exacerbate wildfire risks. Impacts would be equivalent to the Proposed Project and less than significant.

LESS THAN SIGNIFICANT. Maintenance activities for the Crater Mountain Realignment Alternative would be similar to the existing subtransmission lines but would be located in a new alignment. SCE would continue to implement its standard fire prevention protocols during maintenance activities, comply with applicable laws and regulations, and participate in the Red Flag Fire Prevention Program. SCE would implement its Wildfire Mitigation Plan to address the Crater Mountain Realignment Alternative. The Wildfire Mitigation Plan describes strategies, programs and activities that are in place, being implemented or are under development by SCE to proactively address and mitigate the threat of electrical infrastructure-associated ignitions that could lead to wildfires. Therefore, operations and maintenance of the Crater Mountain Realignment Alternative would require the installation of new infrastructure, such as utility lines, which would increase the risk of wildfires. Impacts would be equivalent to the Proposed Project and would be less than significant.

Impact WF-4: 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.

LESS THAN SIGNIFICANT. The Crater Mountain Realignment Alternative is generally located within a valley flanked by the Sierra Nevada mountain range to the west and Inyo mountains to the east. While the Crater Mountain Realignment Alternative is in the valley and not adjacent to the mountains, if a wildfire ignited in the valley spread to the mountains, it would be expected to spread upslope and could cause loss of significant vegetation along the slope thereby increasing the risk of flooding or landslides. As with the Proposed Project, APM HAZ-3 would be implemented which includes procedures for reporting and responding to a fire during construction to help contain any fire ignited by construction. Therefore, although construction activities could ignite a wildfire that could burn the surrounding hill slopes, implementation of APM HAZ-3 would contain fires started by construction would be contained so that they do not extend beyond the valley and create subsequent landslide or flooding conditions in the surrounding mountain areas. Impacts would be equivalent to the Proposed Project and would be less than significant.

LESS THAN SIGNIFICANT. During operations, the Crater Mountain Realignment Alternative structures would be maintained by SCE and would comply with all current federal and State laws related to vegetation clearance and fire prevention. The Crater Mountain Realignment Alternative structures would consist of modern steel poles that increase the clearance between the conductor and the ground/vegetation compared to the existing subtransmission conductor in SCE ROW. The new structures would not be more likely to exposing people or structures to any significant risks above baseline. Maintenance activities for the Crater Mountain Realignment Alternative would be similar to the existing maintenance activities and would include implementation of SCE's Wildfire Mitigation Plan. The operations and maintenance impact on wildfire-induced flooding and landslides would be equivalent to the Proposed Project and less than significant.

4.9. Impacts of the Manzanar Realignment Alternative

The Manzanar Realignment Alternative is approximately 29 miles long and is illustrated in Figure 4-3. This alternative is located within the lower Owens River Valley. Bordered by the Sierra Nevada Mountains on the west and Inyo Mountains on the east, this portion of the valley offers expansive views of a landscape consisting primarily of a level valley floor, transitioning to gently to moderately sloping alluvial fans that emanate from the abruptly rising and visually dominant Inyo Mountain Range. A variety of grasses and shrubs are found throughout this arid valley, and riparian areas occur along the Owens River.

4.9.1. Aesthetics

4.9.1.1. Environmental Setting of the Manzanar Realignment Alternative

The Manzanar Realignment Alternative is located within the lower Owens River Valley. Bordered by the Sierra Nevada Mountains on the west and Inyo Mountains on the east, this portion of the valley offers expansive views of a landscape consisting primarily of a level valley floor, transitioning to gently to moderately sloping alluvial fans that emanate from the abruptly rising and visually dominant Inyo Mountain Range. A variety of grasses and shrubs are found throughout this arid valley, and riparian areas occur along the Owens River. Existing electric subtransmission and transmission facilities are also prominently visible and generally run north-south along the valley floor, often in close proximity to US 395, the primary road corridor through the valley.

Key Observation Points

Given this alternative's relatively remote location on the east side of Owens Valley, views of the alternative from public viewpoints would be somewhat limited. Distant views would be available from Manzanar National Historic Site and US 395. Closer views would be available from SR 136 and local access roads including Mazourka Canyon Road, Manzanar Reward Road, Owenyo Lone Pine Road, and Lone Pine Narrow Gauge Road. One KOP (KOP 1-7) was selected to characterize the landscape setting of the Manzanar Realignment Alternative.

The area illustrated in KOP 1-10 is also within the segment of the Proposed Project that would be eliminated by this alternative (see analysis under Impact AE-3, Segment 1, Section 3.2.3.3).

KOP 1-7 – Manzanar Historic Entry

Figure 3.2-27A (KOP 1-7 Existing View, Manzanar Alternative) presents the existing view to the east from the Historic Entry to the Manzanar National Historic Site. The view encompasses the point of entry in the foreground, backdropped by the imposing Inyo Mountains, which help to define the eastern boundary of the Owens River Valley. The existing lattice structure ROW where the Proposed Project would be located is discernible along the valley floor (as indicated by the label), just slightly less than 1 mile to the east of the Historic Entry to Manzanar.

Visual Quality. Moderate to High. The foreground to middleground flat valley floor with its tan- to russet-colored rounded shrubs and low trees provides dramatic contrast to the abruptly rising, steep, angular forms and undulating ridgelines of the Inyo Mountains, whose visual prominence is highly influential in the moderate to high visual quality rating. Beyond the entry signs and road, structural features consisting of a fence line and distant utility structures are visible but not visually prominent.

Viewer Concern. High. Although the existing energy transmission infrastructure in the distant utility corridor is visible from the Historic Entry and other locations within Manzanar and establishes a structural context for any new or additional facilities in the utility corridor, viewers in Manzanar would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background alluvial fans or mountain range) an adverse visual change.

Viewer Exposure. Low to Moderate. At an approximately 3.5-mile viewing distance from Manzanar, the Manzanar Realignment Alternative would be minimally visible and difficult to discern in the middleground views from the Historic Entry and within other areas of Manzanar. The number of viewers would be moderate, but the duration of view would be extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of low to moderate for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 1-7, combining the equally weighted moderate to high visual quality, high viewer concern, and low to moderate viewer exposure results in an overall rating of moderate to high for visual sensitivity of the visual setting and viewing characteristics.

Impact AE-2: Substantially damage scenic resources within a state scenic highway.

Construction. *LESS THAN SIGNIFICANT.* Construction of this alternative subtransmission line would cause temporary visual effects due to the presence of equipment, vehicles, materials, and workforce. These effects would occur throughout the Proposed Project area. Construction would involve the use of cranes, heavy construction equipment, temporary storage and office facilities, and temporary laydown/staging areas. Construction activities would include site clearing and grading, erection of the structures, conductor stringing and pulling, and site cleanup and restoration. Construction activities would be visible from scattered rural residences, rural residential enclaves, and communities and local roads and recreational sites. Throughout the construction period, the industrial character of the activities would cause substantial visual contrast and visual change and constitute adverse visual effects when viewed from the immediate vicinity, roads in the Project area, and all of the KOPs. The alternative would also require construction activities in the existing I-C Project corridor because the existing structures would be removed after the alternative line is energized. Since construction activities and equipment brought into the Project area and onto the Proposed Project sites would be temporary, they would result in less than significant aesthetics impacts.

Operations and Maintenance. *BENEFICIAL IMPACT.* Under the Manzanar Realignment Alternative, approximately 5.7 miles of the proposed transmission line would be shifted to the east, farther away from the southern-most portion of the Designated State Scenic Highway portion of US 395. In combination with the elimination of the existing subtransmission line that is being replaced, the Manzanar Realignment Alternative would, therefore, result in a beneficial aesthetics impact on the Designated State Scenic Highway segment, and no mitigation is required.

Impact AE-3: In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings.

Most project impacts associated with construction or long-term presence of project components fall into the category of degradation of visual character or quality. Substantial degradation results from higher levels of visual contrast, project dominance, and view blockage. Visual contrast relates to spatial characteristics, visual scale, texture, form, line, and color. Therefore, this criterion will be utilized for making impact conclusions regarding the Manzanar Realignment Alternative's effects on existing landscapes and views.

Construction

LESS THAN SIGNIFICANT. Construction of the Manzanar Realignment Alternative would cause temporary visual effects due to the presence of equipment, vehicles, materials, and workforce. These effects would occur all along the alternative. Construction would involve the use of cranes, heavy construction equipment, temporary storage and office facilities, and temporary laydown/staging areas. Construction activities would include site clearing and grading, erection of the structures, conductor stringing and pulling, and site cleanup and restoration.

Distant views of construction activities would be available to Manzanar National Historic Site and US 395. Closer views would be available from SR 136 and local access roads including Mazourka Canyon Road, Manzanar Reward Road, Owenyo Lone Pine Road, and Lone Pine Narrow Gauge Road.

Throughout the construction period, the industrial character of the activities would cause substantial visual contrast and visual change and constitute adverse visual effects when viewed from close viewing locations. However, construction activities and equipment brought into the alternative area and onto the alternative sites would be temporary. Furthermore, although a contractor material yard is proposed to be located approximately 0.27 mile east of the north end of the Manzanar National Historic Site, most construction activities along the route would only be visible from Manzanar at a distance of approximately 3.5 miles. The resulting aesthetics impact would be less than significant, and no mitigation is required.

Operations and Maintenance

BENEFICIAL AND LESS THAN SIGNIFICANT. Impact AE-3 considers the permanent impacts (i.e., operational and maintenance effects) of the Manzanar Realignment Alternative. The analysis of operational effects was conducted with respect to the visual change perceived from one representative KOP. The following paragraphs present the aesthetics analysis for KOP 1-7.

KOP 1-7 – Manzanar Historic Entry

Figure 3.2-27A (KOP 1-7 Existing View, Manzanar Alternative) presents the existing view to the east from the Manzanar Historic Entry. The view encompasses the point of entry in the foreground, backdropped by the imposing Inyo Mountains, which help to define the eastern boundary of the Owens River Valley. The existing utility corridor (with its vertical lattice structures) where the Proposed Project would be located (shown by the label) is faintly discernible along the valley floor, just slightly less than 1 mile to the east of the Historic Entry.

Figure 3.2-27B (KOP 1-7 Proposed Project, Manzanar Alternative) presents a visual simulation of the Proposed Project that illustrates the replacement of the existing lattice subtransmission line structures with new TSPs (indicated by labels). This is the same image as previously presented in Figure 3.2-6B (KOP 1-7 Manzanar, Galvanized Simulation). Although the replacement monopoles would be visibly taller than the existing lattice structures, the height of the new poles would not substantially change the overall visibility of the Project in relation to the landscape backdrop. Additionally, as a result of the increased height of the proposed structures, increased spacing between the replacement poles would also occur, resulting in fewer structures.

Although the replacement poles of the Proposed Project would appear lighter in color and would be somewhat more reflective when compared with the lattice structures (depending on time of day and season), over time the new galvanized finish would weather, resulting in less contrast with the backdrop and a closer match to the existing transmission structures in the landscape. Due to the distance from the Historic Entry (approximately 0.9 mile), and when viewed against the mottled landscape backdrop, the introduction of new Project structures would result in a low (color and texture) to moderate (form and line) increase in the level of visual contrast within the landscape and would not substantially alter the existing landscape character at this location.

The Proposed Project structures would appear co-dominant relative to the scale of the existing landscape features and structures. Also, the new structures would not attract the attention of the casual observer given the established structural context, and there would be minimal (low) change in the extent of view blockage of higher value landscape features (alluvial fans or mountains).

The overall level of visual change caused by the Proposed Project would be low to moderate, and in the context of the existing landscape's moderate to high visual sensitivity, the resulting visual effect would be less than significant, and no mitigation is required.

In comparison to the Proposed Project discussed above, Figure 3.2-27C (KOP 1-7 Manzanar Alternative, Manzanar Alternative) presents a visual simulation of the Manzanar Realignment Alternative from the same location. As shown in the simulation, at a viewing distance of approximately 3.5 miles (the Manzanar Realignment Alternative would be located an additional approximately 2.5 miles farther to the east of the Proposed Project alignment), the monopoles of the Manzanar Realignment Alternative would be barely discernible in the distance to the east. These structures would not be noticeable to the casual observer or visitor to the Manzanar National Historic Site. The addition of the structures required for this alternative would result in a less than significant impact. No mitigation measures would be required.

Because this alternative would also avoid the impact of the Proposed Project as illustrated in Figure 3.2-27B (KOP 1-7 Proposed Project, Manzanar Alternative) and would cause the removal of the visible existing subtransmission line shown in the existing view presented in Figure 3.2-27A (KOP 1-7 Existing View, Manzanar Alternative), the overall impact would be beneficial.

Impact AE-5: Create a new source of substantial light or glare that would adversely affect day or nighttime views.

LESS THAN SIGNIFICANT. Night lighting and glare impacts within the Manzanar Realignment Alternative would be the same as for Segment 1 of the Proposed Project. The impact would be less than significant and no mitigation is required.

4.9.2. Agriculture and Forestry Resources

4.9.2.1. Environmental Setting of the Manzanar Realignment Alternative

The Manzanar Realignment Alternative is not located on FMMP-designated Farmland. The Manzanar Realignment Alternative would traverse portions of undeveloped lands designated as SFL and zoned as OS-40. Inyo County permitted uses for OS-40 include farm and ranch operations such as livestock, orchards, vineyards, field and truck crops, nurseries, greenhouses, vegetables, flower gardening and other agricultural-related fields (Inyo County, 2001). No lands subject to Williamson Act contracts occur in the Manzanar Realignment Alternative area. No active agricultural operations occur in the Manzanar Realignment Alternative area.

The Manzanar Realignment Alternative would not traverse lands zoned as forest land, timberland or timberland productions. No forest occurs within the Manzanar Realignment Alternative area. The Manzanar Realignment Alternative would be south of the nearest Fremont Cottonwood Forest and would not traverse any areas containing Fremont Cottonwood Forest or other forest vegetation communities.

One impact related to agriculture and forestry would apply to the Manzanar Realignment Alternative. Construction and operation of the Manzanar Realignment Alternative would not occur in FMMP-designated Farmland, lands under Williamson Act contract, active agricultural operations, lands zoned as forest land, timberland or timberland production zone, or lands meeting the definition of forest land. Therefore, Impact AF-1, Impact AF-3, Impact AF-4, Impact AF-5, and Impact AF-6 are not discussed further.

4.9.2.2. Environmental Impacts of the Manzanar Realignment Alternative

Impact AF-2: Conflict with existing zoning for agricultural use or a Williamson Act contract.

LESS THAN SIGNIFICANT. The Manzanar Realignment Alternative is within areas where agricultural land use and zoning designations are present. The northern and southern portions of the Manzanar Realignment Alternative alignment are located in undeveloped lands designated as SFL and zoned as OS-40 in Inyo County. The Manzanar Realignment Alternative would be constructed within approximately 2.5 miles east of the existing subtransmission line and would be installed within the same types of land use and zoning designations for agricultural uses as the existing subtransmission line and Proposed Project. Removal of

the existing subtransmission structures in the existing alignment would remove structures from areas designated for agricultural use. The Manzanar Realignment Alternative alignment would not result in any changes to land use or zoning designations, or create any new conflicts with land use or zoning designations for agricultural uses because agricultural activities could occur on properties zoned OS-40 within the Manzanar Realignment Alternative alignment after implementation of the alternative, and there would be no significant net change in potential agricultural land impacted by the new subtransmission towers. Therefore, impacts would be less than significant.

The Manzanar Realignment Alternative would have no impact on lands under Williamson Act contract because no lands subject to Williamson Act contracts occur in the project area.

4.9.3. Air Quality

4.9.3.1. Environmental Setting of the Manzanar Realignment Alternative

The Manzanar Realignment Alternative would replace approximately 29.4 miles of the I-C alignment and increase the distance between the transmission facilities and the towns of Independence and Lone Pine. As such, the Manzanar Realignment Alternative maintains the same environmental setting as the Proposed Project, described in Section 3.4.1.

The alternative would also require construction activities in the existing I-C Project corridor because the existing structures would be removed after the alternative line is energized. Construction activities and ground disturbance would be limited to the area around each existing structure, use of access roads, and use of material yards.

4.9.3.2. Environmental Impacts of the Manzanar Realignment Alternative

Impact AQ-1: Conflict with or obstruct implementation of an applicable air quality plan.

LESS THAN SIGNIFICANT. The potential impacts associated with the construction and operations and maintenance of this alternative would be similar to the Proposed Project as this alternative would involve similar construction and operations and maintenance activities. Impacts would be less than significant.

Impact AQ-2: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard.

LESS THAN SIGNIFICANT WITH MITIGATION. Due to the comparable type and intensity of activity, the annual and daily rates of emissions would be nearly the same as in the Proposed Project. While the construction of the new structures would occur in a different location (in the alternative ROW) than the removal of existing structures (in the existing ROW), the components of construction activity and vehicle emissions would be essentially the same as for the Proposed Project. This alternative is not expected to exceed any additional air quality thresholds compared to the Proposed Project.

The pollutant emissions of this alternative alone are not expected to exceed any additional air quality thresholds, but as a component of the Proposed Project as a whole, they contribute to a potentially significant impact, that would require implementation of Mitigation Measures AQ-2a (Control Off-Road Equipment Emissions with Tier 4 Engines, Supersedes APM AQ-1) and AQ-2b (Control Fugitive Dust Emissions).

Implementation of Mitigation Measure AQ-2a (Control Off-Road Equipment Emissions with Tier 4 Engines, Supersedes APM AQ-1) and Mitigation Measure AQ-2b (Control Fugitive Dust Emissions) would be required as in the Proposed Project to avoid causing any new violations or contributing substantially to existing violations of the ambient air quality standards, and to further reduce the adverse regional and localized effects of construction-phase emissions. Impacts would be less than significant with mitigation.

Mitigation Measures for Impact AQ-2

AQ-2a Control Off-Road Equipment Emissions with Tier 4 Engines (Supersedes APM AQ-1).

AQ-2b Control Fugitive Dust Emissions.

Impact AQ-3: Expose sensitive receptors to substantial pollutant concentrations.

LESS THAN SIGNIFICANT WITH MITIGATION. The potential impacts associated with the construction and operations and maintenance of this alternative would be similar to the Proposed Project as this alternative would involve similar construction and operations and maintenance activities. While the distances between the Project and some of the sensitive receptors would change, the closest sensitive receptor would be the same distance from the ROW for both the Manzanar Realignment Alternative and the Proposed Project. Additionally, the pollutant emissions would be distributed over the construction period and across the alignment and thus would not be concentrated in any one area. As a result, the actual emissions that would be created at a single site, and thus near a single sensitive receptor, would be a fraction of the overall Proposed Project emissions. The pollutant emissions of this alternative alone are not expected to expose sensitive receptors to substantial pollutant concentrations, but as a component of the Proposed Project as a whole, they contribute to a potentially significant impact, requiring implementation of Mitigation Measures AQ-2a (Control Off-Road Equipment Emissions with Tier 4 Engines, Supersedes APM AQ-1) and AQ-2b (Control Fugitive Dust Emissions). The impact of potentially exposing sensitive receptors to substantial pollutant concentrations would be less than significant with mitigation.

Mitigation Measures for Impact AQ-3

AQ-2a Control Off-Road Equipment Emissions with Tier 4 Engines (Supersedes APM AQ-1).

AQ-2b Control Fugitive Dust Emissions.

Impact AQ-4: Generate other emissions (such as those leading to odors) adversely affecting a substantial number of people.

LESS THAN SIGNIFICANT. The potential impacts of this alternative would be similar to the Proposed Project as this alternative would involve similar construction and operations and maintenance activities. Construction and operations and maintenance activities involving diesel-powered equipment and vehicles would not be a source of notable odors because of the mandatory use of ultra-low sulfur diesel fuel. Project-related activities would occur in compliance with local air district rules and regulations prohibiting nuisances and would not create objectionable odors affecting a substantial number of people. This impact would be less than significant.

4.9.4. Biological Resources

4.9.4.1. Environmental Setting of the Manzanar Realignment Alternative

The Manzanar Realignment Alternative would replace approximately 29.4 miles of the Proposed I-C alignment and increase the distance between the transmission facilities and the Manzanar National Historic Site (NHS), the towns of Independence and Lone Pine, and the Owens River. The Manzanar Realignment Alternative would be located within 3 miles east of the Proposed I-C alignment, immediately adjacent to the LADWP transmission lines and access route. Several lakes, marshes, and playas dot the alignment, with associated freshwater and riparian vegetation bordered by moist substrates (Arcadis, 2023a). The Manzanar Realignment Alternative would cross the Owens River in two places, approximately 4 miles northeast of Independence and within approximately 3 miles southeast of Lone Pine.

Dominant vegetation communities in the Manzanar Realignment are greasewood scrub, white bursage scrub, and shadescale scrub. Non-native tamarisk thickets are also dominant along the alignment. Greasewood scrub and white bursage scrub are designated as a sensitive natural community.

The following special-status plant species were observed or have potential to occur along the Manzanar Realignment route in Segment 1. No federally or state-listed plant species were observed during surveys.

OBSERVED

- Coyote gilia (2B.2)
- Nevada oryctes (2B.1)

POTENTIAL

- Owens Valley checkerbloom (CE, 1B.1)
- Inyo County star- tulip (1B.1)
- Parish's popcornflower (1B.1)
- Inyo phacelia (1B.2)
- DeDecker's clover (1B.3)
- Shockley's milk-vetch (2B.2)
- Geyer's milk- vetch (2B.2)
- Torrey's blazingstar (2B.2)
- Foxtail thelypodium (2B.2)
- Lincoln's rockcress (2B.3)
- Scribner's wheatgrass (2B.3)
- Desert shredding primrose (2B.3)

Five special-status wildlife species were incidentally observed: loggerhead shrike (CSC), osprey (WL), American white pelican (CSC), yellow warbler (CSC), and Le Conte's thrasher (CSC). USFWS designated critical habitat for Sierra Nevada bighorn sheep is located within 5 miles of the alternative alignment, near the southern end. No desert tortoise or sign was observed and there are no CNDDB records within 5 miles of the Manzanar Realignment Alternative. Critical habitat for desert tortoise is outside the alignment to the south.

Within the Manzanar Realignment Alternative, federal and state wetlands and non-wetland waters were identified (Arcadis, 2023b).

Vegetation communities, sensitive natural communities, and special-status species are described in detail in the Project Sensitive Species and Habitat Report (SSHR) Botanical Addendum (Arcadis, 2023a). Potential and locations of special-status species occurrence are described in Appendix 4, Table 4-1. Jurisdictional waters are described in detail in the Project Wetlands and Other Waters Jurisdictional Delineation Report Addendum (Arcadis, 2023b).

4.9.4.2. Environmental Impacts of the Manzanar Realignment Alternative

Impact BIO-1: 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 Wildlife or U.S. Fish and Wildlife Service.

Construction

Vegetation and Habitat

LESS THAN SIGNIFICANT WITH MITIGATION. Impacts to fish and wildlife habitat would be similar to those described in Section 3.5.3.3, Environmental Impacts of the Proposed Project, Impact BIO-1. The only difference in impacts would occur over 30 miles in Segment 1. Like the Proposed Project, construction, post-construction restoration, and operations and maintenance activities for the Manzanar Realignment Alternative would result in temporary and permanent disturbance and removal of vegetation and habitat in discrete and disjointed locations. As a result of clearing and grubbing, grading, earth-moving, and vehicle and equipment traffic, potential direct impacts to habitat may include direct crushing, burial, or uprooting of vegetation; root damage; disturbance of seed banks, underground dormant plants, and plant nutrients; burial or scour of vegetation from runoff, sedimentation, and erosion; and disruption of photosynthesis from fugitive dust. Indirect impacts may occur from incidental introductions of invasive weeds that reduce habitat quality and increase fire risk.

Similar to the Proposed Project, which would be built in the existing SCE ROW, the Manzanar Realignment Alternative would be constructed adjacent to existing transmission facilities (LADWP) and the associated access routes that are already disturbed. The habitat impacts overall would be as described under Impact BIO-1 for the Proposed Project (Section 3.5.3.3). It is noted that while the Manzanar Realignment Alternative would be located generally farther from the Owens River than the Proposed Project, it would require two additional river crossings, not required by the Proposed Project.

Application of APMs. Similar to the Proposed Project, the loss and modification of vegetation and habitat as a result of construction could significantly affect special-status species on the project site or in the vicinity. Implementation of the following APMs, which were developed as part of the project, would address vegetation and habitat loss, as described in detail in Section 3.5.3.3.

- APM BIO-RES-1 (Develop and Implement Habitat Restoration Plan)
- APM BIO-RES-2 (Develop Invasive Plant Management Plan)
- APM HAZ-1 (Prepare a Hazardous Materials Management Plan)

These APMs implement seeding and revegetation, soil decompaction, erosion control, and non-native control, which would stabilize soils, re-establish native vegetation, and improve habitat values in the project area. Procedures for containment and cleanup of spills and restrictions on refueling would minimize the exposure of vegetation and habitat to hazardous materials. However, even with application of APMs, impacts would be significant without mitigation.

Permit Conditions. SCE would be required to comply with conditions included in permits from USACE, CDFW, and RWQCB. If the project were approved, SCE would be required to obtain permits to maintain air and water quality and to implement specific requirements to minimize impacts to habitat from fugitive dust, runoff, erosion, and sedimentation in and around work areas.

Mitigation. Even with implementation of APMs and permit conditions, impacts would be significant without mitigation. Certain APMs are superseded with recommended mitigation measures to ensure that impacts to vegetation and habitat would be less than significant. Other mitigation measures are recommended below to further avoid significant impacts and compensate for habitat loss. A detailed description is presented in Impact BIO-1 in Section 3.5.3.3. The full text of these mitigation measures is presented in Section 3.5.5.

- Mitigation Measure BIO-1a (Worker's Environmental Awareness Program) supersedes APM WEAP
- Mitigation Measure BIO-1b (Biological Monitoring) supersedes APM BIO-GEN-1
- Mitigation Measure BIO-1c (Minimization of Vegetation and Habitat Impacts)
- Mitigation Measure BIO-1d (Compensation for Habitat Loss)

These mitigation measures would ensure that disturbance of vegetation and habitat is minimized and restricted to designated and demarcated work areas. Compensation for permanent impacts would offset habitat loss due to project construction activities.

Mitigation measures recommended in other sections of this EIR would also reduce the severity of construction impacts to vegetation and habitat, including:

- Mitigation Measure AQ-2b (Control Fugitive Dust Emissions)
- Mitigation Measure HW-1a (Drainage Erosion and Sedimentation Control Plan)

These mitigation measures would ensure that dust generated from construction, which could accumulate on vegetation and impact growth, is suppressed and minimized. Erosion resulting from vegetation removal and disturbance of soils would be managed through erosion BMPs, which would prevent loss of soils, use of seed banking, and protecting surrounding habitat from degradation.

Although the Manzanar Realignment Alternative would require two additional river crossings not required by the Proposed Project, mitigation measures would be equally effective at minimizing and avoiding impacts to these habitats.

Special-Status Plants

LESS THAN SIGNIFICANT WITH MITIGATION. Impacts to special-status plants would be similar to those described for habitat and special-status plants (Impact BIO-1) in Section 3.5.3.3, Environmental Impacts of the Proposed Project. For the Manzanar Realignment Alternative, a portion of the Proposed Project in Segment 1 would be moved within 3 miles east of the existing SCE ROW, farther from the Owens River, skirting the base of the Inyo Mountains, and crossing the Owens River in two places. As described in the environmental setting for this alternative above, several additional special-status plants have potential to occur in this alternative alignment, as compared to the species listed for Segment 1 of the Proposed Project (see Section 3.5.1.6; Arcadis, 2019, 2023a).

Application of APMs. Similar to the Proposed Project, construction could result in the loss or disturbance of special-status plants, resulting in a significant impact, as described in detail in Section 3.5.3.3. APMs previously outlined for vegetation and habitat, above, would address loss of vegetation and plants. Additionally, the following APMs would address special-status plants specifically, (full text in Section 2.8).

- APM BIO-BOT-1 (Special-Status Herbaceous Plants).
- APM BIO-BOT-2 (Special-status Perennial Plants and Other Species).
- APM BIO-CNDDB-1 (Data Entry).

Surveying and buffers would avoid direct disturbance and removal of individual special-status plants and minimize disturbance of the seed bank and disruption of supporting soils. Habitat restoration, revegetation, salvage (as feasible), and off-site compensation for impacted individuals would offset the loss of special-status plants in the project area. Reporting of special-status plants would support future management and conservation of individuals and populations in the project vicinity. However, even with application of APMs, impacts would be significant.

Permit Conditions. SCE would also be required to comply with conditions included in permits from CDFW and USFWS. If the Project were approved, SCE would be required to obtain permits for take or disturbance of listed species.

Mitigation. Even with implementation of APMs and permit conditions, impacts would be significant without mitigation. Mitigation measures previously outlined for vegetation and habitat, above, would reduce impacts to special-status plants, including any and all additional plants potentially occurring in this alternative's right-of-way. Other mitigation measures are recommended below to further avoid significant impacts. A detailed description of this mitigation measure is presented in Impact BIO-1 in Section 3.5.3.3. Full text of each mitigation measure is provided in Section 3.5.5.

- Mitigation Measure BIO-1e (Pre-construction Biological Resources Surveys).

In compliance with Mitigation Measure BIO-1e (Pre-construction Biological Resources Surveys), work areas would be surveyed, and special-status plants would be identified and marked, buffered and avoided, relocated, or salvaged, which would avoid direct impacts.

Mitigation measures recommended in other sections of this EIR would also reduce the severity of construction impacts to special-status plants, including:

- Mitigation Measure AQ-2b (Control Fugitive Dust Emissions; full text in Section 3.4.3.3, Air Quality)
- Mitigation Measure HW-1a (Drainage Erosion and Sedimentation Control Plan; full text in Section 3.11.3.3, Hydrology and Water Quality)

These mitigation measures would ensure that dust generated from construction, which could accumulate on plants and impact growth, is suppressed and minimized. Erosion resulting from vegetation removal and disturbance of soils would be managed through erosion BMPs, which would prevent loss of soils and seed bank and protect surrounding habitat and plant species from degradation.

Although several additional special-status plants have the potential to occur in this alternative alignment as compared to Segment 1, as described in Section 3.5.1.6, the mitigation measures would be equally effective at protecting these species.

Special-Status Wildlife

LESS THAN SIGNIFICANT WITH MITIGATION. Impacts to special-status wildlife would be similar to those described in Impact BIO-1 (Section 3.5.3.3), Environmental Impacts of the Proposed Project, because the potentially affected species would be the same. Ground disturbance and clearing would impact vegetation and burrows used by wildlife for shelter, nesting and reproduction, and foraging habitat, including designated critical habitat. Increased equipment and vehicle traffic may result in increased wildlife strikes. Presence of excavation areas, trenches, and pits may trap wildlife, causing injury, mortality, or susceptibility to predation. Increased noise, vibration, dust, and artificial light may disrupt nesting or foraging behaviors, restrict access to shelter and foraging areas, or alter site conditions and reduce the overall quality of habitat available. Increased human presence may increase presence of opportunistic predators. Introduction and spread of non-native species would degrade habitat for wildlife.

For the Manzanar Alignment Alternative, a portion of the Proposed Project in Segment 1 would be moved up to 3 miles east of the existing SCE ROW, generally further from the Owens River, skirting the base of the Inyo Mountains. It would cross the Owens River in two places, which creates potential for collision risk to birds that use the river corridor for movement and migration. Impacts due to bird and bat collision with project facilities and transmission lines are detailed in Impact BIO-6.

Application of APMs. Similar to the Proposed Project, construction could result in loss or modification of native habitat and direct disturbance, mortality, or injury of special-status wildlife on the project site or vicinity. APMs previously outlined for vegetation and habitat, above, and described in detail in Section 3.5.3.3, would improve habitat values and promote recovery of native vegetation for special-status wildlife. Additionally, the following APMs would address special-status wildlife and their habitat.

- APM BIO-AVI-2 (Burrowing Owl)
- APM BIO-AVI-3 (Yellow-billed Cuckoo)
- APM BIO-HERP-9 (Northern Leopard Frog)
- APM BIO-MAM-1 (Mohave Ground Squirrel)
- APM BIO-MAM-5 (Bighorn Sheep – Nelson's and Desert Bighorn Sheep)
- APM BIO-CNDDB-1 (Data Entry)
- APM WET-1 (Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats)
- APM AES-8 (Night Lighting during Construction of Facilities)
- APM NOI-1 (Noise Control)

Species-specific APMs are expected to reduce, in part, the likelihood and severity of injury and the likelihood of mortality of those special-status wildlife with potential to occur in the project areas, as discussed in detail in Section 3.5.3.3. APMs for night lighting and noise (AES-8 and NOI-1) would minimize disturbance of wildlife and disruption of foraging and breeding during nighttime hours. However, even with application of APMs, impacts would be significant.

Permit Conditions. SCE would also be required to comply with conditions included in ITPs from CDFW and/or USFWS. If the Project were approved, SCE would be required to obtain permits for take or disturbance of listed species.

Mitigation. Even with implementation of APMs and permit conditions, impacts would be significant without mitigation. Mitigation measures previously outlined for vegetation and habitat, above, would reduce impacts to habitat for special-status wildlife. Certain APMs are superseded with recommended mitigation measures to ensure that impacts to special-status wildlife would be less than significant. Other mitigation measures are recommended below to avoid disturbance and loss of additional special-status wildlife species. A detailed description of these mitigation measures is presented in Impact BIO-1 in Section 3.5.3.3. The full text of all mitigation measures is presented in Section 3.5.5.

- Mitigation Measure BIO-1e (Pre-construction Biological Resources Surveys)
- Mitigation Measure BIO-1f (Wildlife impact avoidance and minimization)
- Mitigation Measure BIO-1g (Crotch bumble bee)
- Mitigation Measure BIO-1h (Special-status reptiles)
- Mitigation Measure BIO-1i (Desert Tortoise) supersedes APM HERP-1
- Mitigation Measure BIO-1j (Raven Monitoring, Management, and Control Plan)
- Mitigation Measure BIO-1k (Mohave ground squirrel avoidance and minimization)
- Mitigation Measure BIO-1l (American Badger and Desert Kit Fox)
- Mitigation Measure BIO-1m (Special-status Bats) supersedes APM BIO-MAM-6
- Mitigation Measure BIO-1n (Golden Eagle) supersedes APM BIO-AVI-4

These mitigation measures ensure that work areas would be surveyed, and special-status wildlife would be identified, monitored, buffered and avoided, or relocated, which would avoid direct injury or mortality. Management of work site hazards would further prevent injury and mortality of special-status wildlife. Species-specific mitigation measures would minimize and avoid impacts by surveying and buffering those species.

Mitigation measures recommended in other sections of this EIR would also reduce the severity of construction impacts to wildlife and their habitat:

- Mitigation Measure AQ-2b (Control Fugitive Dust Emissions; full text in Section 3.4.3.3, Air Quality)
- Mitigation Measure HW-1a (Drainage Erosion and Sedimentation Control Plan; full text in Section 3.11.3.3, Hydrology and Water Quality)

These mitigation measures would ensure that dust generated from construction, which could disturb wildlife, accumulate on vegetation, and impact growth of wildlife habitat, is suppressed and minimized. Erosion resulting from vegetation removal and disturbance of soils would be managed through erosion BMPs, which would prevent loss of soils and protect wildlife habitat from degradation.

Operation and Maintenance

LESS THAN SIGNIFICANT. The impacts from operations and maintenance would be similar to activities that are ongoing to maintain the existing subtransmission lines. For the Manzanar Realignment Alternative, these impacts would occur in the alternative ROW and not in the existing Segment 1 ROW. The Manzanar Realignment Alternative would be located immediately adjacent to two larger LADWP transmission lines, which undergo similar operations and maintenance impacts themselves. Because the operations and maintenance activities would occur within the areas already disturbed by construction of the alternative itself, no new ground disturbance would be expected. SCE would implement its APMs, if relevant to the specific maintenance activities. Impacts from operations and maintenance would be less than significant.

Impact BIO-2: 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 Wildlife or U.S. Fish and Wildlife Service.

Construction

LESS THAN SIGNIFICANT WITH MITIGATION. Impacts to riparian vegetation and sensitive vegetation communities would be similar to those described for habitat (Impact BIO-1) and riparian and sensitive communities (Impact BIO-2) in Section 3.5.3.3 and described in Impact BIO-1 for the Manzanar Realignment Alternative.

As a result of clearing and grubbing, grading, earth-moving, and vehicle traffic, potential direct impacts to sensitive vegetation communities may include direct crushing, burial, or uprooting of vegetation; root damage; disturbance of seed banks, underground dormant plants, and plant nutrients; burial or scour of vegetation from runoff, sedimentation, and erosion; and disruption of photosynthesis from fugitive dust. Indirect impacts may occur from incidental introductions of invasive weeds that reduce habitat quality and increase fire risk.

The Manzanar Realignment Alternative would be located generally further from the Owens River but would cross the river in two places. Impacts to other sensitive vegetation communities that occur along the Manzanar Realignment Alternative (Arcadis, 2023a) would be the same as described for the Proposed Project in Section 3.5.3.3.

Application of APMs. Similar to the Proposed Project, construction would significantly impact sensitive and/or riparian vegetation in the project area. Implementation of the following APMs, which were developed as part of the project, would address habitat loss, as described in detail in Section 3.5.3.3.

- APM BIO-RES-1 (Develop and Implement Habitat Restoration Plan)
- APM BIO-RES-2 (Develop Invasive Plant Management Plan)
- APM HAZ-1 (Prepare a Hazardous Materials Management Plan)

These APMs implement seeding and revegetation, soil decompaction, erosion control, and non-native control, which would stabilize soils, re-establish native vegetation, and improve habitat values in the project area. Procedures for containment and cleanup of spills and restrictions on refueling would minimize the exposure of vegetation and habitat to hazardous materials. However, even with application of APMs, impacts would be significant without mitigation.

Permit Conditions. SCE would also be required to comply with conditions included in permits from USACE, CDFW, and RWQCB. If the Project is approved, SCE would be required to obtain permits to maintain air and water quality and to implement specific requirements to minimize impacts to habitat from fugitive dust, runoff, erosion, and sedimentation in and around work areas.

Mitigation. Even with implementation of APMs and permit conditions, impacts would be significant without mitigation. Certain APMs are superseded with recommended mitigation measures to ensure that impacts to riparian vegetation and sensitive vegetation communities would be less than significant. Other mitigation measures are recommended below to further avoid significant impacts and compensate for habitat loss. A detailed description of these mitigation measures is presented in Impact BIO-1 in Section 3.5.3.3. The full text of these mitigation measures is presented in Section 3.5.5.

- Mitigation Measure BIO-1a (Worker's Environmental Awareness Program) supersedes APM WEAP
- Mitigation Measure BIO-1b (Biological Monitoring) supersedes APM BIO-GEN-1
- Mitigation Measure BIO-1c (Minimization of Vegetation and Habitat Impacts)
- Mitigation Measure BIO-1d (Compensation for Habitat Loss)

These mitigation measures would ensure that habitat disturbance is minimized and restricted to designated and demarcated work areas and that habitat loss in sensitive communities would be offset.

Mitigation measures recommended in other sections of this EIR would also reduce the severity of construction impacts to riparian vegetation and sensitive vegetation communities, including:

- Mitigation Measure AQ-2b (Control Fugitive Dust Emissions; full text in Section 3.4.3.3, Air Quality)
- Mitigation Measure HW-1a (Drainage Erosion and Sedimentation Control Plan; full text in Section 3.11.3.3, Hydrology and Water Quality)

These mitigation measures would ensure that dust generated from construction, which could accumulate on vegetation and impact growth, is suppressed and minimized. Erosion resulting from vegetation removal and disturbance of soils would be managed through erosion BMPs, which would prevent loss of soils and seed bank and protect surrounding habitat from degradation.

Operation and Maintenance

LESS THAN SIGNIFICANT. As analyzed under Impact BIO-1, impacts from operations and maintenance would be less than significant.

Impact BIO-3: Substantially affect jurisdictional wetlands, waters of the U.S., or waters of the state.

Construction

LESS THAN SIGNIFICANT WITH MITIGATION. Impacts to jurisdictional wetlands and waters would be similar to those described for jurisdictional waters (Impact BIO-3) in Section 3.5.3.3, Environmental Impacts of the Proposed Project. The only difference in impacts would occur over 30 miles in Segment 1.

As a result of clearing and grubbing, grading, earth-moving, and vehicle traffic, potential direct impacts to wetlands and jurisdictional waters may include rutting, sedimentation, or erosion in and around surface waters; direct crushing, burial, or uprooting of wetland vegetation; and disturbance of seed banks, underground dormant plants, and plant nutrients. Indirect impacts may occur from incidental introductions of invasive weeds that reduce habitat quality; from spillage of hazardous materials used during construction; and from introduction of sediment into waters, which would reduce water quality in the project vicinity and downstream.

The Manzanar Realignment Alternative would be located farther from the Owens River but would cross the river in two places. Impacts to other jurisdictional waters for the Manzanar Realignment Alternative area would be the same as described for the Proposed Project (Section 3.5.3.3).

Application of APMs. Similar to the Proposed Project, construction would significantly impact jurisdictional wetlands and waters. Implementation of the following APMs, which were developed as part of the project, would address jurisdictional waters, as described in detail in Section 3.5.3.3.

- APM BIO-RES-1 (Develop and Implement Habitat Restoration Plan)
- APM BIO-RES-2 (Develop Invasive Plant Management Plan)
- APM HAZ-1 (Prepare a Hazardous Materials Management Plan)
- APM BIO-WET-1. (Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats)

These APMs implement seeding and revegetation, soil decompaction, erosion control, and non-native control, which would stabilize soils, re-establish native vegetation, and improve habitat values in the project area. Procedures for containment and cleanup of spills and restrictions on refueling would minimize the exposure of vegetation and habitat to hazardous materials.

By implementing BIO-WET-1, wetlands and jurisdictional waters would be avoided unless otherwise authorized by resource agencies. Unavoidable permanent impacts would be offset, as approved. BMPs would minimize indirect impacts and protect jurisdictional waters from sedimentation or pollution. However, even with application of APMs, impacts would be significant.

Permit Conditions. SCE would also be required to comply with conditions included in permits from USACE, CDFW, and RWQCB. If the Project were approved, SCE would be required to obtain permits to maintain water quality and to implement specific requirements to minimize impacts to wetlands from runoff, erosion, and sedimentation in and around work areas. Permits would define compensation ratios for unavoidable impacts to jurisdictional waters.

Mitigation. Even with implementation of APMs and permit conditions, impacts would be significant without mitigation. Certain APMs are superseded with recommended mitigation measures to ensure that impacts would be less than significant. Other mitigation measures are recommended below to further avoid significant impacts and compensate for loss of jurisdictional waters. The full text of these mitigation measures is presented in Section 3.5.5.

- Mitigation Measure BIO-1a (Worker's Environmental Awareness Program) supersedes APM WEAP
- Mitigation Measure BIO-1b (Biological Monitoring) supersedes APM BIO-GEN-1
- Mitigation Measure BIO-1c (Minimization of Vegetation and Habitat Impacts)
- Mitigation Measure BIO-1d (Compensation for Habitat Loss)

These mitigation measures would ensure that habitat disturbance is minimized and restricted to designated and demarcated work areas and that habitat loss in sensitive communities would be offset.

Mitigation measures recommended in other sections of this EIR would also reduce the severity of construction impacts to jurisdictional wetlands and waters, including:

- Mitigation Measure AQ-2b (Control Fugitive Dust Emissions; full text in Section 3.4.3.3, Air Quality)
- Mitigation Measure HW-1a (Drainage Erosion and Sedimentation Control Plan; full text in Section 3.11.3.3, Hydrology and Water Quality)

These mitigation measures would ensure that dust generated from construction, which could settle and accumulate in wetlands and waters, is suppressed and minimized. Erosion resulting from vegetation removal and disturbance of soils would be managed through erosion BMPs, which would prevent loss of soils and sedimentation of jurisdictional waters.

Operation and Maintenance

LESS THAN SIGNIFICANT. As analyzed under Impact BIO-1, impacts from operations and maintenance would be less than significant.

Impact BIO-4: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

Construction

LESS THAN SIGNIFICANT WITH MITIGATION. Impacts to wildlife movement would be similar to those described in Section 3.5.3.3, Environmental Impacts of the Proposed Project, Impact BIO-4. The only difference in impacts would occur over 30 miles in Segment 1.

Impacts may include temporary and localized disruption of resident or migratory wildlife or wildlife behavior due to increased noise, vibration, light, dust, equipment, human presence, and opportunistic predators. Increased equipment and vehicle traffic may result in increased wildlife strikes in the vicinity of habitat corridors. Habitat used for cover during movement would be impacted by ground disturbance and clearing and incidental introduction of invasives may decrease the quality of corridor habitat.

The Manzanar Realignment Alternative would cross the Owens River in two places, but the rest of the alternative would be generally further from the river. The river crossings may pose an increased collision and electrocution risk to migratory birds that use the river corridor as a flight pathway, as detailed in

Impact BIO-6. Impacts to other wildlife movement areas outside the Manzanar Realignment Alternative area would be the same as described for the Proposed Project (Section 3.5.3.3).

Application of APMs. Impacts to wildlife movement from construction, due to degradation of habitat, disruption of natural movement behaviors, and direct injury or mortality, would be considered significant. Implementation of the following APMs, which were developed as part of the project, would address wildlife movement, as described in detail in Section 3.5.3.3.

- APM BIO-RES-1 (Habitat Restoration and Revegetation Plan)
- APM BIO-RES-2 (Develop Integrated Weed Management Plan [IWMP])
- APM HAZ-1 (Prepare a Hazardous Materials Management Plan)
- APM WET-1 (Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats)
- APM BIO-AVI-2 (Burrowing Owl)
- APM BIO-AVI-3 (Yellow-billed Cuckoo)
- APM BIO-HERP-9 (Northern Leopard Frog)
- APM BIO-MAM-1 (Mohave Ground Squirrel)
- APM BIO-MAM-5 (Bighorn Sheep – Nelson's and Desert Bighorn Sheep)
- APM AES-8 (Night Lighting during Construction of Facilities)
- APM NOI-1 (Implement Best Management Practices for Construction Noise)

These APMs would improve habitat values, promote recovery of native vegetation, and protect habitat from pollution and contamination. Species-specific APMs are expected to reduce, in part, the likelihood and severity of injury and the likelihood of mortality of those special-status wildlife with potential to occur in the project areas, as discussed in detail in Section 3.5.3.3. APMs for night lighting and noise (AES-8 and NOI-1) would minimize disturbance of wildlife and disruption of foraging and breeding during nighttime hours. However, even with application of APMs, impacts would be significant.

Permit Conditions. SCE would also be required to comply with conditions included in ITPs from CDFW and USFWS for threatened and endangered species and candidates for listing. If the Project were approved, SCE would be required to obtain permits for take or disturbance of listed species.

Mitigation. Even with implementation of APMs and permit conditions, impacts would be significant without mitigation. Certain APMs are superseded with recommended mitigation measures to ensure that impacts would be less than significant. Other mitigation measures are recommended to avoid disturbance of wildlife near the project area. The full text of these mitigation measures is presented in Section 3.5.5.

- Mitigation Measure BIO-1a (Worker's Environmental Awareness Program) supersedes APM WEAP
- Mitigation Measure BIO-1b (Biological Monitoring) supersedes APM BIO-GEN-1
- Mitigation Measure BIO-1c (Minimization of Vegetation and Habitat Impacts)
- Mitigation Measure BIO-1d (Compensation for Habitat Loss)
- Mitigation Measure BIO-1e (Pre-construction Biological Resources Surveys)
- Mitigation Measure BIO-1f (Wildlife impact avoidance and minimization)
- Mitigation Measure BIO-1g (Crotch bumble bee)
- Mitigation Measure BIO-1h (Special-status reptiles)
- Mitigation Measure BIO-1i (Desert Tortoise) supersedes APM HERP-1
- Mitigation Measure BIO-1j (Raven Monitoring, Management, and Control Plan)
- Mitigation Measure BIO-1k (Mohave ground squirrel avoidance and minimization)
- Mitigation Measure BIO-1l (American Badger and Desert Kit Fox)
- Mitigation Measure BIO-1m (Special-status Bats) supersedes APM BIO-MAM-6
- Mitigation Measure BIO-1n (Golden Eagle) supersedes APM BIO-AVI-4

These mitigation measures would ensure that habitat disturbance is minimized and restricted to designated and demarcated work areas and that habitat loss would be offset. Work areas would be surveyed, and sensitive habitats and special-status wildlife would be identified, monitored, buffered and avoided,

or relocated. These measures would effectively avoid significant impediments to wildlife movement in the project area. Management of work site hazards, such as speeding vehicles, holes and trenches, trash, and pets, would further prevent injury, mortality, and disturbance of wildlife moving in and through the project site. Species-specific mitigation measures would minimize and avoid impacts by surveying and buffering those species.

Mitigation measures recommended in other sections of this EIR would also reduce the severity of construction impacts to wildlife and their habitat:

- Mitigation Measure AQ-2b (Control Fugitive Dust Emissions; full text in Section 3.4.3.3, Air Quality)
- Mitigation Measure HW-1a (Drainage Erosion and Sedimentation Control Plan; full text in Section 3.11.3.3, Hydrology and Water Quality)

These mitigation measures would ensure that dust generated from construction, which could disturb wildlife, accumulate on vegetation, and impact growth of wildlife habitat, is suppressed and minimized. Erosion resulting from vegetation removal and disturbance of soils would be managed through erosion BMPs, which would prevent loss of soils and protect wildlife habitat from degradation.

Operation and Maintenance

LESS THAN SIGNIFICANT. As analyzed under Impact BIO-1, impacts from operations and maintenance would be less than significant.

Impact BIO-5: Cause take of protected nesting birds, including nestlings or eggs, through direct impacts to the nest or substantial nearby disturbance which could cause nest abandonment.

Construction

LESS THAN SIGNIFICANT WITH MITIGATION. Impacts to nesting birds would be similar to those described in Section 3.5.3.3, Environmental Impacts of the Proposed Project, Impact BIO-5. Direct impacts to nesting birds could include loss of active nests, suitable shelter, foraging habitat, and food sources due to vegetation clearing and ground disturbance. Incidental spread of non-native weeds would decrease nesting habitat quality. Construction activities could cause disruption of nesting and foraging behavior due to a temporary increase in human presence, traffic, noise, vibration, dust, and opportunistic predators. Impacts to birds due to collision with power lines and electrocution are discussed in Impact BIO-6.

Application of APMs. Implementation of the following APMs would address nesting birds, as described in detail in Impact BIO-1, Section 3.5.3.3.

- APM BIO-RES-1 (Habitat Restoration and Revegetation Plan)
- APM BIO-RES-2 (Develop Integrated Weed Management Plan [IWMP])
- APM HAZ-1 (Prepare a Hazardous Materials Management Plan)
- APM BIO-AVI-1 (Nesting Bird Management Plan)
- APM BIO-AVI-2 (Burrowing Owl)
- APM BIO-AVI-3 (Yellow-billed Cuckoo)
- APM AES-8 (Night Lighting during Construction of Facilities)
- APM NOI-1 (Implement Best Management Practices for Construction Noise)

These APMs would improve habitat values, promote recovery of native vegetation, and protect habitat from pollution and contamination. APM BIO-AVI-1 requires a Nesting Bird Management Plan (NBMP) in coordination with CPUC, BLM, CDFW, and USFWS, which would avoid potential for unauthorized take. Pre-construction nest surveys during the breeding season (January 1 through August 31), demarcation of nest buffers, monitoring of nests, and coordination with resource agencies on buffer modifications would avoid destruction and disturbance of nests and direct mortality or injury of birds, nestlings, or eggs. APM BIO-AVI-2 (Burrowing Owl) requires surveys, buffering of active burrows, and a relocation plan, which

would minimize and avoid disturbance, injury, and mortality of nesting burrowing owls. APM BIO-AVI-3 (Yellow-billed Cuckoo) requires the avoidance of nesting season or pre-construction nest surveys, buffering of nests, and construction monitoring of occupied habitat, which would protect yellow-billed cuckoos from disturbance, injury, and mortality. APMs for night lighting and noise (AES-8 and NOI-1) would minimize disturbance of nesting birds during construction activities during nighttime hours. However, even with application of APMs, impacts would be significant without mitigation.

Permit Conditions. SCE would also be required to comply with conditions included in ITPs from CDFW and USFWS for threatened and endangered species and candidates for listing. If the Project were approved, SCE would be required to obtain permits for take or disturbance of listed species.

Mitigation. Even with implementation of APMs and permit conditions, impacts would be significant without mitigation. Certain APMs are superseded with recommended mitigation measures to ensure that impacts would be less than significant. Other mitigation measures are recommended to avoid disturbance of nesting birds near the project area. The full text of these mitigation measures is presented Section 3.5.5.

- Mitigation Measure BIO-1a (Worker's Environmental Awareness Program) supersedes APM WEAP
- Mitigation Measure BIO-1b (Biological Monitoring) supersedes APM BIO-GEN-1
- Mitigation Measure BIO-1c (Minimization of Vegetation and Habitat Impacts)
- Mitigation Measure BIO-1d (Compensation for Habitat Loss)
- Mitigation Measure BIO-1e (Pre-construction Biological Resources Surveys)
- Mitigation Measure BIO-1f (Wildlife impact avoidance and minimization)
- Mitigation Measure BIO-1n (Golden Eagle) supersedes APM BIO-AVI-4

These mitigation measures would ensure that habitat disturbance is minimized and restricted to designated and demarcated work areas and that habitat loss would be offset. Work areas would be surveyed, and sensitive habitats and special-status wildlife would be identified, monitored, buffered and avoided, or relocated. Management of work site hazards, such as speeding vehicles, holes and trenches, trash, and pets, would further prevent injury, mortality, and disturbance of nesting birds. Mitigation Measure BIO-1n (Golden Eagle) recommends golden eagle nest surveys within a 2-mile radius of work areas. Occupied nests would be buffered to avoid disturbance of nesting eagles and abandonment of nests.

Mitigation measures recommended in other sections of this EIR would also reduce the severity of construction impacts to wildlife and their habitat:

- Mitigation Measure AQ-2b (Control Fugitive Dust Emissions)
- Mitigation Measure HW-1a (Drainage Erosion and Sedimentation Control Plan)

These mitigation measures would ensure that dust generated from construction, which could accumulate on vegetation and impact growth of nesting habitat, is suppressed and minimized. Erosion resulting from vegetation removal and disturbance of soils would be managed through erosion BMPs, which would prevent loss of soils and protect surrounding nesting habitat from degradation.

Operation and Maintenance

LESS THAN SIGNIFICANT. As analyzed under Impact BIO-1, impacts from operations and maintenance would be less than significant.

Impact BIO-6: Create a substantial collision and electrocution risk for birds or bats.

LESS THAN SIGNIFICANT WITH MITIGATION. Impacts from collision and electrocution would be similar to those described for Impact BIO-6 in Section 3.5.3.3, Environmental Impacts of the Proposed Project. The Manzanar Realignment Alternative would be located generally farther from the Owens River than the Proposed Project but would include two additional river crossings.

The alternative would require installation of new transmission facilities immediately adjacent to the two larger existing LADWP transmission lines. As a result, this alternative would not create a taller obstruction to birds than that already existing.

The impact of transmission line height on collisions is highly dependent on a particular species' flight altitude and factors such as flight behavior, annual flight cycle, and habitats in the vicinity of the line (Bernardino et al., 2018). Collision mortality estimates in North America have not identified a noticeable effect on long-term population trends; however, it may increase risk for a subset of species with susceptible characteristics. Collision-related mortality is commonly attributed to a bird's morphological characteristics (vision and flight), and behavioral characteristics (migration strategy, feeding and roosting, flocking behaviors, or hunting style) (Bateman et al., 2023) and collision rates generally increase in low light conditions, during inclement weather, such as fog, rain or snow, during strong winds, and during panic flushes when birds are startled by a disturbance or are fleeing from danger (Brown, 1993; Luzenski et al., 2016). Collisions are more probable where the movements of susceptible species are the greatest, such as near wetlands, agricultural areas, valleys that are bisected by power lines, within narrow passes where power lines run perpendicular to flight paths. Several studies have shown that most observed collisions were with narrower, less visible overhead shield wires and lines that cross daily movement corridors (between roosting, nesting, and feeding areas) (Luzenski et al., 2016). However, results suggested that well-marked lines or lines with increased diameter, even in movement corridors, can lessen collision risk.

Collision and electrocution hazard conditions for the Manzanar Realignment Alternative are expected to be similar to existing conditions, due to the presence of the existing taller LADWP lines.

Mitigation. Collision risks to birds can be minimized after construction by marking the lines, which can be better detected by birds and avoided (Bateman et al., 2023; Bernardino et al., 2018). Birds may generally be expected to detect and avoid marked transmission lines (Bernardino et al., 2018; Luzenski et al., 2016); however; species with susceptible characteristics, as previously described, may still be at increased risk of collision.

This alternative would require installation of new transmission facilities immediately adjacent to the two larger existing LADWP transmission lines. As a result, it would not create taller obstructions to birds than already exists. However, unmarked lines would present a hazard to birds flying in the area, resulting in a significant collision impact.

The PEA (SCE, 2020a) states that all subtransmission facilities for the Project would be designed to be avian-safe, following the intent of Suggested Practices for Avian Protection on Power Lines: the State of the Art in 2006 (APLIC, 2006). All subtransmission facilities would be evaluated for potential collision risk and, where determined to be high risk, lines would be marked with collision reduction devices in accordance with Reducing Avian Collisions with Power Lines: The State of the Art in 2012 (APLIC, 2012; SCE, 2020a). However, these specifications are not incorporated into an APM.

As described for the Proposed Project, the following mitigation measure is recommended to ensure that risk of collision and electrocution are minimized to the greatest extent feasible. Full text of the measure is provided in Section 3.5.5.

- Mitigation Measure BIO-6a (Bird and Bat Collision)

By implementing recommended APLIC guidelines and design features that discourage perching by raptors, use markers to visually warn birds, and maintain enough distance between lines to prevent electrocution of large birds, injury and mortality from collision and electrocution would be minimized.

Impact BIO-7: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

LESS THAN SIGNIFICANT. As described in Section 3.5.3.3, Environmental Impacts of the Proposed Project, goals and policies for biological resources in the Kern County and Inyo County General Plans are not applicable, pursuant to General Order 131-E. There are no conflicts with local ordinances, therefore no significant impacts would occur under Impact BIO-7. No mitigation measures are required.

Impact BIO-8: Conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.

LESS THAN SIGNIFICANT. The only difference in impacts to biological resources between the Manzanar Realignment Alternative and the Proposed Project would occur over 30 miles in Segment 1, within 3 miles of the project area. The DRECP identified detailed Conservation Management Actions (CMAs) that must be implemented on BLM-administered lands to avoid and minimize impacts to environmental resources, and that are incorporated into the CDCA and Bishop RMP (see Section 3.5.3.1). As part of SCE's Plan of Development (POD) submitted to the BLM, SCE included the APMs listed in Table 3.5-1 to comply with DRECP CMAs.

The Manzanar Realignment Alternative would not conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan, therefore no significant impacts would occur. No mitigation measures are required.

4.9.5. Cultural Resources

4.9.5.1. Environmental Setting of the Manzanar Realignment Alternative

The Manzanar Realignment Alternative is approximately 30 miles long and would be located east of Segment 1 of the Proposed Project and adjacent to existing LADWP transmission lines.

The Direct API for this alternative consists of 1,068 acres. There are 62 archaeological resources considered to be eligible for the California Register of Historic Resources (CRHR) in the Direct API (48 precontact resources and 14 multi-component sites with historic resources) with potential for adverse effects. Prehistoric sites include lithic and ceramic artifacts scatters, some with habitation remains in the site and others without. Historic sites include an irrigation ditch, railroads, a bridge abutment, a structure, and refuse scatters. Cultural resources within the Manzanar Realignment Alternative are listed and described in EIR Appendix 5A, Table Ap.5-11.

Eight eligible built environment resources or portions of built resources (in the case of long linear resources) are within the CEQA Areas of Direct and Indirect Impacts. Previously recorded and newly identified built environment resources include transmission lines, an intertie, railroads, an aqueduct, irrigation ditches, the remains of a bridge, and paved or unpaved roads and highways. Some linear resources have segments in multiple alternatives; however, each segment is counted separately here.

4.9.5.2. Environmental Impacts of the Manzanar Realignment Alternative

Impact CUL-1: Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines §15064.5.

Direct Impacts

SIGNIFICANT AND UNAVOIDABLE. As described for the Proposed Project in Section 3.6.3.5, the cultural resources in the Owens Valley are non-renewable resources that provide an important window into California's past, including Native American traditional lifeways. As described in detail in Section 3.6.3.1 (Impact Analysis

Approach), most resources are eligible to the CRHR under Criterion 4 for research potential and any direct impacts to these resources could jeopardize that research potential.

In addition to the potential impacts to the known historical resources, there is the potential for construction activities to result in exposure of unknown buried archaeological resources that could be considered historical resources under CEQA, especially in Segment 1 (the most archaeologically dense area of the Proposed Project). If construction resulted in damage to unknown buried historical resources that are eligible for the CRHR, as described in more detail below, a significant impact would occur.

Direct construction-related impacts to known and unknown buried archaeological resources would be reduced in severity with implementation of Mitigation Measures CUL-1a through CUL-1l (the full text of these mitigation measures is presented in Section 3.6):

- Mitigation Measure CUL-1a (Retain a Cultural Resources Specialist)
- Mitigation Measure CUL-1b (Develop Data Recovery Plans for Known Historical Archaeological Resources)
- Mitigation Measure CUL-1c (Implement Cultural Resources Environmental Awareness Training)
- Mitigation Measure CUL-1d (Prepare and implement a Cultural Resources Management Plan; *supersedes APM CUL-1*)
- Mitigation Measure CUL-1e (Cultural Resources Monitoring)
- Mitigation Measure CUL-1f (Tribal Monitoring)
- Mitigation Measure CUL-1g (Remove Structures by Helicopter in Culturally Sensitive Areas)
- Mitigation Measure CUL-1h (Leave All Foundations in Place for Structures Removed in Culturally Sensitive Areas)
- Mitigation Measure CUL-1i (Avoid Disturbance Within Environmentally Sensitive Areas)
- Mitigation Measure CUL-1j (Mitigate Loss from Dismantling of Historic-Era "Tower Line" Transmission Lines (P-36-010316)
- Mitigation Measure CUL-1k (Avoid and/or Mitigate Loss from Direct Impacts to Historic-Era Archaeological Resources Contributing to the Rand Mining District (P-15-007069)
- Mitigation Measure CUL-1l (Avoid Damage to Manzanar Airfield)

As summarized above, Mitigation Measures CUL-1a through CUL-1l are designed to avoid or reduce impacts to known and unknown buried historical resources to the extent feasible. These measures include avoiding resources where feasible by establishing protected Environmentally Sensitive Areas (ESAs) during construction and maintenance, providing archaeological and Native American monitoring, evaluation of discoveries, and data recovery excavations of historical resources that cannot be avoided. Implementation of these measures would substantially reduce the potential for unmitigated loss of information value. However, despite the inclusion of these feasible mitigation measures, the alternative would occur in an area of exceptionally high archaeological sensitivity and continuing cultural importance to descendant communities. Ground disturbance in this highly sensitive area with a high density of known resources has a high likelihood of impacting known archaeological resources and encountering significant buried deposits whose scientific and cultural values extend beyond the recoverable data alone. While data recovery, as defined in Mitigation Measure CUL-1b, can mitigate for the loss of information potential, it cannot fully offset the loss of the physical integrity, spatial relationships, and cultural associations that contribute to the significance of these resources.

Mitigation Measures CUL-1g and CUL-1h would apply only to the removal of existing structures that are located within the boundaries of culturally sensitive resource areas. The measure would apply to this alternative as it defines access and process for removing structures, and to use of access roads in the vicinity.

Therefore, although the recommended mitigation measures would reduce adverse effects to the extent feasible, the construction of the alternative would result in the permanent loss of portions of resources within a culturally rich and sensitive archaeological area. As such, the impact on historical resources would remain significant and unavoidable, even after implementation of all mitigation.

Indirect Impacts

LESS THAN SIGNIFICANT. The visual changes resulting from the replacement of Proposed Project structures with other steel structures would be similar, in nature and scale, to the existing subtransmission structures. Therefore, the Proposed Project would not cause a substantial indirect adverse change in the significance of a historical resource, and no mitigation is necessary.

Impact CUL-2: Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to CEQA Guidelines §15064.5.

Construction

LESS THAN SIGNIFICANT WITH MITIGATION. No unique archaeological resources have been identified in the Direct APE. As such, the alternative would not impact known unique archaeological resources. However, previously unknown buried unique archaeological resources could be discovered and damaged, or destroyed, during ground disturbing work. This would cause a substantial adverse change in the significance of the archaeological resources, should they be determined to be unique archaeological resources under CEQA. Damage or destruction of a buried archaeological resource would constitute a significant impact absent mitigation. Implementation of Mitigation Measures CUL-1a through CUL-1i would evaluate and protect unanticipated discoveries of unique archaeological resources, thereby ensuring that this impact will be less than significant.

Operations and Maintenance

LESS THAN SIGNIFICANT WITH MITIGATION. As described in Section 3.6.3.4*,* maintenance activities could include ground disturbing activities, such as access road grading and pole replacements, that could occur in previously disturbed or undisturbed locations. As such, maintenance activities could cause a significant impact to unknown buried unique archaeological resources in the Direct APE.

To ensure that potential maintenance impacts are less than significant, Mitigation Measures CUL-1c requires annual WEAP training for personnel responsible for maintenance activities during which the crew would be made aware of procedures to follow in the event of unanticipated discoveries and CUL-1d requires maintenance personnel have access to a non-confidential GIS database showing ESAs which will be avoided by maintenance activities. Therefore, with implementation of these two mitigation measures, impacts to unknown unique archaeological resources from maintenance activities would be less than significant.

Impact CUL-3: Disturb human remains, including those interred outside of formal cemeteries.

Construction

LESS THAN SIGNIFICANT WITH MITIGATION. In addition to the known resources that contain human remains, there is the possibility that previously unknown burials or human remains could be identified during ground disturbing construction activities. The discovery of human remains would constitute a significant impact.

The Proposed Project includes APM CUL-4 (Properly Treat Human Remains; see Table 3.6-10), which defines the process to be implemented should human remains be discovered. APM CUL-4 is considered adequate to ensure that impacts to unknown buried human remains would not be significant. However, additional mitigation is required to supplement APM CUL-4, because human remains discovered during construction may be a component of one or more larger archaeological sites. As discussed for Impact CUL-1, the APMs do not provide adequate protection for this more extensive potential impact. Therefore, Mitigation Measures CUL-1a through CUL-1h are also required to ensure that impacts associated with the discovery of human remains are less than significant. These measures would require worker environmental awareness training, and a CRMP that outlines avoidance feasible measures and procedures to follow in the event of the discovery of unanticipated human remains. Additionally, these mitigation

measures would require archaeological and tribal monitoring and reduce the level of ground disturbance in culturally sensitive areas. With the implementation of Mitigation Measures CUL-1a through CUL-1h, impacts to known and unknown human remains would be less than significant.

Operations and Maintenance

LESS THAN SIGNIFICANT WITH MITIGATION. As described in Section 3.6.3.4*,* maintenance activities could include ground disturbing activities, such as access road grading and pole replacements, that could occur in previously disturbed or undisturbed locations. As such, maintenance activities could cause a significant impact to unknown buried resources including human remains in the Direct APE.

SCE has committed to implementing APM CUL-4, which defines processes that would address human remains discoveries. APM CUL-4 provides adequate process and protection for potential impacts to unknown buried human remains. However, additional mitigation will be needed to supplement APM CUL-4 to ensure proper treatment of known human remains, which may be components of larger archaeological sites. Mitigation Measure CUL-1c requires annual WEAP training for personnel responsible for maintenance activities during which the crew would be made aware of procedures to follow in the event of unanticipated discoveries to human remains. Mitigation Measure CUL-1d requires maintenance personnel have access to a non-confidential GIS database showing ESAs which will be avoided by maintenance activities. Therefore, impacts to known and unknown human remains from maintenance activities will be less than significant.

4.9.6. Tribal Cultural Resources

4.9.6.1. Environmental Setting of the Manzanar Realignment Alternative

Section 3.7.1 defines the ethnographic setting of the region, as well as Tribal Cultural Resources identified in the record search and the ethnographic literature review completed for this EIR. Table 3.7-2 (Summary of Tribal Cultural Resources Data Collection) and Table 3.7-3 (Overview of AB 52 Consultation Process Activities) summarize the Native American consultation that was completed by the CPUC; additional detail is presented in Appendix 5B. This information is all relevant to this alternative as well as the Proposed Project segment that it would replace.

4.9.6.2. Environmental Impacts of the Manzanar Realignment Alternative

Impact TCR-1: Cause a substantial adverse change in the significance of a tribal cultural resource that is listed or eligible for listing in the California Register of Historical Resources.

SIGNIFICANT AND UNAVOIDABLE. As described in Section 3.7.1.6 (Summary of AB 52 Native American Consultation)*,* one new Tribal Cultural Resource (TCR) was identified during formal consultation: the Owens Valley Landscape (OVL). The OVL is situated within both the Direct and Indirect APE and is at risk of experiencing significant direct and indirect impacts from the Proposed Project. As a non-renewable TCR, the OVL offers critical insight into California's historic landscape and the traditional lifeways of Native American communities. It holds ongoing cultural, spiritual, and educational value, as local Native American groups continue to engage with the OVL to sustain and revitalize their cultural practices.

Direct construction-related impacts to known and unknown buried TCRs would be reduced in severity with implementation of Mitigation Measures TCR-1a and TCR-1b (see full text in Section 3.7), and CUL-1a through CUL-1i (see full text Section 3.6). The mitigation measures are as follows:

- Mitigation Measure TCR-1a (Conceal Exposed Tribal Cultural Resources After Construction)
- Mitigation Measure TCR-1b (Provide Funding for Tribal Resource Mapping and Monitoring Training Programs)
- Mitigation Measure CUL-1a (Retain a Cultural Resources Specialist)

- Mitigation Measure CUL-1b (Develop Data Recovery Plans for Known Historical Archaeological Resources)
- Mitigation Measure CUL-1c (Implement Cultural Resources Environmental Awareness Training)
- Mitigation Measure CUL-1d (Prepare and implement a Cultural Resources Management Plan; *supersedes APM CUL-1*)
- Mitigation Measure CUL-1e (Cultural Resources Monitoring)
- Mitigation Measure CUL-1f (Tribal Monitoring)
- Mitigation Measure CUL-1g (Remove Structures by Helicopter in Culturally Sensitive Areas)
- Mitigation Measure CUL-1h (Leave All Foundations in Place for Structures Removed in Culturally Sensitive Areas)
- Mitigation Measure CUL-1i (Avoid Disturbance Within Environmentally Sensitive Areas)

Tribal consultation has indicated that while resources of value are located throughout the OVL, the more sensitive resources were along the Proposed Project route, and not along the tribal cultural resources along the Manzanar Realignment Alternative.

Impact TCR-2: Cause a substantial adverse change in the significance of a resource determined to be significant TO AN AGENCY pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, considering the significance of the resource to a California Native American tribe.

NO IMPACT. Based on the information provided during formal AB 52 consultation, record searches, and ethnographic research, the Proposed Project would not impact a TCR as determined by the CPUC. No documented resources that the CPUC has determined, backed by substantial evidence, to be a TCR have been identified within the Direct or Indirect APE. Therefore, the Proposed Project would not impact any TCRs as determined by the CPUC through construction or maintenance and no mitigation is required.

4.9.7. Energy

4.9.7.1. Environmental Setting of the Manzanar Realignment Alternative

The Manzanar Realignment Alternative maintains the same environmental setting as the Proposed Project, described in Section 3.8.1. The alternative would also require construction activities in the existing I-C Project corridor because the existing structures would be removed after the alternative line is energized. Construction activities and ground disturbance would be limited to the area around each existing structure, use of access roads, and use of material yards.

4.9.7.2. Environmental Impacts of the Manzanar Realignment Alternative

Impact EN-1: Result in wasteful, inefficient, or unnecessary consumption of energy.

LESS THAN SIGNIFICANT. The potential impacts associated with the construction and operations and maintenance of this alternative would be similar to the Proposed Project as this alternative would involve similar construction and operations and maintenance activities. As in the Proposed Project, the Manzanar Realignment Alternative would not result in wasteful, inefficient, or unnecessary consumption of energy, and as such, impacts would be less than significant.

Impact EN-2: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

LESS THAN SIGNIFICANT. The potential impacts associated with the construction and operations and maintenance of this alternative would be similar to the Proposed Project as this alternative would involve similar construction and operations and maintenance activities. As in the Proposed Project, the Manzanar Realignment Alternative would not obstruct state or local plans for renewable energy or energy efficiency, and as such, impacts would be less than significant.

4.9.8. Geology, Soils, and Paleontology

4.9.8.1. Environmental Setting of the Manzanar Realignment Alternative

The setting for the Manzanar Realignment Alternative is generally the same as of the corresponding section of the Proposed Project, with the exception of surface fault rupture. The alternative would also require construction activities in the existing I-C Project corridor because the existing structures would be removed after the alternative line is energized. Construction activities and ground disturbance would be limited to the area around each existing structure, use of access roads, and use of material yards. The Manzanar Realignment Alternative is underlain by the same and similar primarily granular soil series and associations as the as the Proposed Project, with potential for erosion ranging from low to high for both wind and water from low to moderate for expansion. Both the Manzanar Realignment Alternative and the Proposed Project cross relatively flat to gently sloping topography and would not be subject to slope failures.

The Manzanar Realignment Alternative would be subject to very strong seismically induced ground shaking from ground accelerations ranging from 0.85 to 0.95 g, the same as the corresponding Proposed Project section.

The Manzanar Realignment Alternative, similar to the corresponding Proposed Project section, is underlain by young Quaternary sediment that are potentially liquefiable due to very shallow to shallow groundwater levels in the Owens Valley (ranging from near ground surface to approximately 25 ft bgs) and has the same liquefaction potential.

The Manzanar Realignment Alternative and the corresponding Proposed Project section are located within the same groundwater basin (Owens Valley basin) and would be subject to the same low-medium subsidence potential, however the 2015 to 2023 vertical subsidence data for this area indicates little to no subsidence (DWR, 2023).

According to a paleontological resources report prepared for the realignment segments (Bargas Environmental Consulting, 2024), the Manzanar Realignment Alternative is underlain by the same or similar geologic units with the same paleontological sensitivity as the corresponding Proposed Project section. Geologic units that would be affected by the Manzanar Realignment Alternative consist of young Quaternary sedimentary units, specifically Quaternary alluvium (Qal) classified as low to moderate potential for significant paleontological resources (**PFYC 2 to 3**), and Quaternary lake deposits (Ql) with moderate paleontological potential (**PFYC 3**). The corresponding Proposed Project section also includes geologic units with these same levels of paleontological potential.

One major difference between the Manzanar Realignment Alternative and the corresponding section of the Proposed Project is that although the Manzanar Realignment Alternative is located nearer to the Owens Valley fault zone, it is not crossed by any active or potentially active faults. The corresponding portion of the Proposed Project is crossed by numerous strands of the Alquist-Priolo zoned Owens Valley fault zone and is within and crossed by the faults associated Alquist-Priolo zones (as described in Sections 3.9.1.6 and 3.9.1.8 and shown on maps; see maps on Figure 3.9-2a through Figure 3.9-2d (Alquist Priolo Fault Zone Map).

4.9.8.2. Environmental Impacts of the Manzanar Realignment Alternative

Impact GSP-1: Expose people or structures to adverse effects, including the risk of loss, injury, or death, due to rupture of a known earthquake fault, seismic ground shaking, or liquefaction.

Fault Rupture

NO IMPACT. The Manzanar Realignment Alternative does not cross any active or potentially active faults or Alquist Priolo zones. This is a significant decrease in potential adverse impacts related to fault rupture as compared to the corresponding section of the Proposed Project, which crosses nine active strands of the

Owens Valley fault zone, is in close proximity to numerous other active strands, and crosses and is within four Alquist-Priolo fault zones. There is no potential impact related to fault rupture along the Manzanar Realignment. No mitigation is required for fault rupture for the Manzanar Realignment Alternative.

Seismic Ground Shaking

LESS THAN SIGNIFICANT. The Manzanar Realignment Alternative would be subject to the same level of strong to very strong ground shaking (with estimated ground accelerations of 0.85 to 0.95 g) in the event of a large earthquake as the corresponding section of the Proposed Project. Thus, this alternative would have the same potential for adverse impacts related to seismically induced ground shaking as the corresponding section of the Proposed Project.

The new structures for the Manzanar Realignment Alternative would be designed as required by CPUC General Order 95. SCE would conduct geotechnical investigations to provide an evaluation of geotechnical conditions prior to final project design and construction. Above-ground poles would be designed to meet wind loading criteria, which generally exceed seismic loading criteria, thus reducing and/or eliminating the risk of these structures failing due to ground shaking. Design of new structures to the above referenced recommendations, guidelines and standards, and applicable regulations would ensure that adverse impacts from ground shaking would be less than significant.

Operation of the Manzanar Realignment Alternative would generally be the same as for the Proposed Project and would include inspection and emergency repair of damage to structures and project components after an earthquake event.

Seismically Induced Slope Failure or Liquefaction

LESS THAN SIGNIFICANT. The Manzanar Realignment Alternative and the corresponding portion of the Proposed Project are both located in areas of relatively flat to gently sloping terrain with no landslide risks mapped along or near either route. Therefore, both segments would be unlikely to experience seismically induced slope failures. The Manzanar Realignment Alternative is underlain by the same potentially liquefiable sediments as the Proposed Project with generally similar groundwater levels ranging from near ground surface to approximately 25 feet bgs. Thus, potential adverse effects due to liquefaction along the Manzanar Realignment Alternative are expected to be the same as along the corresponding section of the Proposed Project.

SCE will conduct geotechnical investigations prior to final design and engineering to evaluate the depth to the water table, liquefaction potential, physical properties of subsurface soils, and slope stability and may include recommendations for the final engineering design, as needed. Adverse impacts related to seismically induced slope failures and liquefaction along the Manzanar Realignment Alternative would be less than significant (Class III) due to implementation of geotechnical design recommendations and standard engineering practices, and compliance applicable regulations, including CPUC General Order 95.

Project operation would generally be the same as for the Proposed Project, including operations and maintenance activities that would include inspection and emergency repair of damage to structures and project components after an earthquake event.

Impact GSP-2: Result in substantial soil erosion or the loss of topsoil.

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* Similar ground disturbing construction activities would occur for the Manzanar Realignment Alternative as for the Proposed Project, including removal of poles, construction of poles and towers, and grading for spur roads and rehabilitation of access roads as needed. The same soil series with erosion potentials ranging from low to high for both wind and water are located along both Manzanar Realignment and the corresponding section of the Proposed Project. Thus, the Manzanar Realignment Alternative would have the same potential for erosion as the corres-

ponding section of the Proposed Project. However, if the alternative is selected, construction would occur along both the existing ROW (to remove structures) and the alternative ROW (to install structures), so there would be more total ground disturbance and greater potential for soil erosion to occur.

The Manzanar Realignment Alterative would be required to obtain NPDES General Permit for Storm Water Discharges Associated with Construction Activity, prepare and submit a project specific Storm Water Pollution Prevention Plan (SWPPP), and implement SCE APMs (APM BIO-HERP-2, APM BIO-MAM-1, and BIO-RES-1) which would help to reduce soil erosion impacts. Implementation of Mitigation Measure HW-1a (Implement a Drainage, Erosion, and Sedimentation Control Plan) would be required to reduce soil erosion impacts to less than significant levels.

Operations and Maintenance. *LESS THAN SIGNIFICANT WITH MITIGATION.* Repairs done to existing facilities, such as repairing or replacing existing poles and towers could result in ground disturbance and soil erosion. Spur road maintenance could require limited grading. Compliance with Project SWPPP requirements and implementation of Mitigation Measure HW-1a (Implement a Drainage, Erosion, and Sedimentation Control Plan) would ensure that adverse impacts related to erosion from operations and maintenance activities along the Manzanar Realignment Alternative would be less than significant.

Mitigation Measure for Impact GSP-2

HW-1a **Implement a Drainage, Erosion, and Sedimentation Control Plan.** (See full text in Section 3.12)

Impact GSP-3: Be located on a geologic unit or soil that is unstable, or would become unstable as a result of the Project, and result in on- or off-site landslide, subsidence, liquefaction or collapse.

Construction and Operations and Maintenance. *NO IMPACT.* As discussed above under Impact GSP-3, the Manzanar Realignment Alternative is located on relatively flat to gently sloping terrain, unlikely to experience slope failures similar to the corresponding portion of the Proposed Project. The Manzanar Realignment Alternative and the Proposed Project cross the same valley and groundwater basin (Owens Valley) and would be subject to the same potential to adverse effects due to subsidence. The Owens Valley has low to moderate potential for subsidence (DWR, 2014); however, the Manzanar Realignment Alternative and the corresponding Proposed Project segment have exhibited little to no subsidence between 2015 and 2023 (DWR 2023). Therefore, there would be no impact related to triggered slope instability or to ground surface subsidence and no impact would result.

Impact GSP-4: Be located on expansive soil creating substantial risks to life or property.

Construction and Operations and Maintenance. *LESS THAN SIGNIFICANT.* Primarily granular (sandy) and non-expansive soil series underlie both the Manzanar Realignment Alternative and the Proposed Project; however, some soils with moderate expansion potential underlie both alignments. Adverse impacts related to expansive soils would be reduced to less than significant with project design per geotechnical recommendations and standard engineering practices, and compliance with relevant regulations, including CPUC GOs 95.

Project operation would generally be the same as for the Proposed Project, including operations and maintenance activities that would include and inspection and emergency repair of damage to structures and project components.

Impact GSP-5: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Construction. *LESS THAN SIGNIFICANT.* The Manzanar Realignment Alternative is located within the same or similar geologic units with the same paleontological resource potential (**PFYC 2 to 3** and **PFYC 3**) as the

corresponding Proposed Project section. This alternative would also include the same types and amounts of ground disturbing activities as the Proposed Project. Therefore, both routes would have the same potential to damage or destroy paleontological resources in units designated **PFYC 2 to 3** and **PYFC 3**, which are units with the potential for significant paleontological resources.

With incorporation of APMs PAL-1 to PAL-4, including implementation of the Draft PRMMP that was prepared for the Proposed Project consistent with APM PAL-1, in addition to compliance with applicable regulations, most potential damage to or destruction of scientifically important paleontological resources would be avoided, as any resources that are encountered during construction would be recovered and curated for future study. The process for monitoring, recovery, curation, and reporting of all resources must be approved by BLM and CPUC, thereby ensuring that most scientifically important paleontological resources will be permanently protected.

However, the Unanticipated Discover Protocol defined in APM PAL-1 does not specifically cite that carbonate-rich paleosols are indicators of the presence of microvertebrates. These paleosols require screening of a test sample of sediment following the guidelines SVP (2010). Mitigation Measure GSP-5a (Unanticipated Paleontological Resource Protocol) supersedes the protocol component of APM PAL-1 in order to avoid the destruction or disturbance of significant paleontological resources, specifically micro-vertebrate fossils. Implementation of the defined testing would ensure that potentially valuable resources are identified. Therefore, impacts would be less than significant with implementation of this mitigation measure.

Mitigation Measure for Impact GSP-5

GSP-5a **Unanticipated Discovery Paleontological Resource Protocol Update (Supersedes the protocol defined in APM PAL-1)** (see full text in Section 3.9.3)

Operations and Maintenance. *LESS THAN SIGNIFICANT.* Only limited ground disturbance in existing disturbed areas would be required during Project operation, primarily related to maintenance of access and spur roads and repairs to structures. Ground disturbance in these previously disturbed areas is unlikely to encounter paleontological resources; therefore, similar to the corresponding Proposed Project section, impacts from this alternative would be less than significant.

4.9.9. Greenhouse Gas Emissions

4.9.9.1. Environmental Setting of the Manzanar Realignment Alternative

The Manzanar Realignment Alternative maintains the same environmental setting as the Proposed Project, described in Section 3.10.1. The alternative would also require construction activities in the existing I-C Project corridor because the existing structures would be removed after the alternative line is energized. Construction activities and ground disturbance would be limited to the area around each existing structure, use of access roads, and use of material yards.

4.9.9.2. Environmental Impacts of the Manzanar Realignment Alternative

Impact GHG-1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

LESS THAN SIGNIFICANT. The type and intensity of construction activity would be substantially the same as in the Proposed Project. Due to the comparable type and intensity of activity, the annual and daily rates of emissions would be nearly the same as in the Proposed Project. This alternative is not expected to generate GHG emissions that would have a significant impact on the environment; impacts would be less than significant, and no mitigation is required.

Impact GHG-2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing greenhouse gas emissions.

LESS THAN SIGNIFICANT. The potential impacts associated with the construction and operations and maintenance of this alternative would be similar to the Proposed Project as this alternative would involve similar construction and operations and maintenance activities. These would not conflict with any applicable GHG reduction plan, policy, or regulation, and as such, impacts would be less than significant, and no mitigation is required.

4.9.10. Hazards and Hazardous Materials

4.9.10.1. Environmental Setting of the Manzanar Realignment Alternative

The environmental setting for the Manzanar Alignment Alternative is very similar to the Proposed Project's Segment 1 as discussed in Section 3.11.1, in Inyo County. The Manzanar Alignment Alternative would be at a greater distance from US 395 and would be located adjacent to the existing larger LADWP transmission corridor.

The Manzanar Alignment Alternative would also require construction activities in the existing I-C Project corridor because the existing structures would be removed after the alternative line is energized. Construction activities and ground disturbance would be limited to the area around each existing structure, the use of material yards, and the use of access roads.

4.9.10.2. Environmental Impacts of the Manzanar Realignment Alternative

Impact HH-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

LESS THAN SIGNIFICANT. The potential impacts associated with the construction and operation of Manzanar Alignment Alternative would be the same as those of the Proposed Project segment that this alternative would replace. The alternative would involve similar construction and operational activities and would require the same type of transport, use, and disposal of hazardous materials. The same applicant proposed measure (APM HAZ-1, Prepare a Hazardous Materials Management Plan) would be implemented for this alternative as for the Proposed Project. The implementation of APM HAZ-1 would ensure that impacts to the public or the environment through the transport, use, or disposal of hazardous materials are less than significant impacts for this alternative.

Impact HH-2: Create a significant risk to human health or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials.

LESS THAN SIGNIFICANT. The potential impacts associated with the construction and operation of this alternative would be the same as the Proposed Project. The alternative would involve similar construction and operational activities and would represent similar potential hazards to the public or environment with respect to reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Implementation of APM HAZ-1 (Prepare a Hazardous Materials Management Plan) for the alternative would ensure that impacts are less than significant impacts with respect to reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Impact HH-3: Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.

LESS THAN SIGNIFICANT. The potential impacts associated with the construction of Manzanar Alignment Alternative would be similar to the Proposed Project. While this alternative would not pass through or run

adjacent to any previously identified hazardous material sites, the alternative would involve construction in proximity to areas that may contain hazardous constituents. This implementation of APM HAZ-2, Soil Management Plan, would ensure the appropriate identification, sampling, management, and disposal of potentially contaminated soils if encountered during construction activities. With implementation of APM HAZ-2, impacts related to construction of the Manzanar Alignment Alternative would be less than significant.

Impact HH-4: Create a hazard to the public or the environment through mobilization of contaminants or hazards, including mining-related contaminated soils, pesticides, herbicides, and Valley Fever spores.

LESS THAN SIGNIFICANT WITH MITIGATION. As described in Section 3.3, Agriculture and Forestry, Inyo County permitted uses along this alternative include lands zoned as OS-40, and include farm and ranch operations such as livestock, orchards, vineyards, field and truck crops, nurseries, greenhouses, vegetables, flower gardening and other agricultural-related fields. Therefore, grading of access and spur roads and excavation of transmission structure foundations may encounter soil contaminated with pesticides and herbicides in the area of this proposed alternative alignment, which would be a significant impact. Mitigation Measure HH-4a (Identify Soil Contamination) is recommended to ensure that impacts are less than significant.

It is also possible that Valley Fever spores could be mobilized during construction, which would be a significant impact, so dust control is important. Mitigation Measure AQ-2b (Control Fugitive Dust Emissions) is recommended to reduce this impact to less than significant levels.

Mitigation Measures for Impact HH-4

HH-4a Identify Soil Contamination (Supplements APM HAZ-2)

AQ-2b Control Fugitive Dust Emissions

Impact HH-6: Create a hazard to the public or workers due to discovery of military munitions and unexploded ordnance.

While there are no active or former military installations or FUDS in the areas that would be impacted by construction activities for this alternative, it is possible that historic military activity left unexploded ordnance within the construction areas. As shown in Figure 4-4 (Fossil Falls Realignment Alternative), approximately 6 miles of this alternative are near, but outside of the western boundary of the China Lake NAWS. The grading of access and spur roads and excavation of transmission structure foundations could encounter these military munitions and unexploded ordnance, which would be a significant impact. In order to ensure that impacts are not significant, Mitigation Measure H-6a (UXO Identification, Training, and Reporting Plan) is recommended.

Mitigation Measure for Impact HH-6

HH-6a Unexploded Ordnance (UXO) Identification, Training, and Reporting Plan

Impact HH-7: Expose workers or the public to excessive shock hazards.

LESS THAN SIGNIFICANT. The potential impacts associated with the construction and operation of this alternative would the same as the Proposed Project, i.e., a significant impact. Grounding measures would be required to be incorporated into the design and construction of the facility through Mitigation Measure HH-8a (Implement grounding measures to avoid shocks) to provide a conductive path to ground thereby avoiding a buildup of electrical potential that could discharge as an electrical shock. With implementation of this mitigation measure, this alternative would result in less than significant impacts related to induced currents.

Mitigation Measures for Impact HH-8

HH-8a Implement grounding measures to avoid shocks

4.9.11. Hydrology and Water Quality

4.9.11.1. Environmental Setting of the Manzanar Realignment Alternative

The Manzanar Realignment Alternative shares similar environmental settings as the Proposed Project's Segment 1 as discussed in Section 3.12.1. Due to its close proximity, this alternative would be located within the same groundwater basin region (Owens Valley Groundwater Basin) with similar surface water conditions as the Proposed Project.

This alternative would also require construction activities in the existing I-C Project corridor because the existing structures would be removed after the alternative line is energized. Construction activities and ground disturbance would be limited to the area around each existing structure, the use of material yards, and the use of access roads.

4.9.11.2. Environmental Impacts of the Manzanar Realignment Alternative

Impact HW-1: Violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* The impacts associated with the construction of this alternative would be similar to those resulting from the Proposed Project because this alternative would involve similar construction activities and would affect the same water resources. While the APMs and SWPPP requirements would reduce effects, they are not sufficiently detailed or prescriptive to ensure that impacts would be less than significant. Therefore, Mitigation Measure HW-1a (Drainage, Erosion, and Sedimentation Control Plan) is required to ensure development and implementation of a detailed DESCP. The implementation of this measure would result in less than significant impacts for construction.

Mitigation Measures for Impact HW-1

HW-1a **Drainage, Erosion, and Sedimentation Control Plan (DESCP)** (see Section 3.12.3.3 for full text)

Operations and Maintenance. *LESS THAN SIGNIFICANT.* The impacts from operations and maintenance would be similar to activities that are ongoing to maintain the existing subtransmission lines. For the Manzanar Realignment Alternative, these impacts would occur in the alternative ROW and not in the existing Segment 1 ROW. The Manzanar Realignment Alternative would be located immediately adjacent to two larger LADWP transmission lines, which currently undergo similar maintenance activities. Because the operations and maintenance activities would occur within the areas already disturbed by construction of the alternative itself, no new ground disturbance would be expected during maintenance. SCE would implement the APMs that apply to maintenance activities. Impacts from operations and maintenance would be less than significant.

Impact HW-2: Substantially decrease groundwater supplies or interfere with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

Construction. *LESS THAN SIGNIFICANT.* The potential impacts associated with the construction of the Manzanar Realignment Alternative would be the same as for the Proposed Project. This alternative would traverse the same groundwater basin (Owens Valley Groundwater Basin) as the Proposed Project and would be expected to use the same sources of water for construction dust control. As a result, this alternative would result in similar effects as the Proposed Project and would maintain the sustainable management of the Owens Valley Groundwater Basin.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* The impacts from operations and maintenance activities would be less than significant; see discussion under Impact HW-1.

Impact HW-3: 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, increase surface runoff, exceed stormwater drainage capacity, or redirect flood flows.

Erosion and Siltation

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* The potential impacts associated with the construction of the Manzanar Realignment Alternative would be the same as for the Proposed Project. This alternative would involve similar construction activities. However, if the alternative is selected, construction would occur along both the existing ROW (to remove structures) and the alternative ROW (to install structures), so there would be more total ground disturbance and greater potential for erosion and siltation to occur.

Even with implementation of the four APMs and the SWPPP, construction of the alternative may still result in significant impacts to water quality depending on the extent and scale of earth disturbance from construction grading and excavation work. Mitigation Measure HW-1a (Drainage, Erosion, and Sedimentation Control Plan) would require further detailed review and delineation of the construction process by a professional engineer or Qualified SWPPP Developer and require additional protective measures that are not defined in the APMs and exceed SWPPP requirements. This measure is recommended to ensure that potential impacts to water quality standards or degradation of surface water quality due to erosion impacts or disturbance of drainage patterns are less than significant. With implementation of this measure, construction impacts would be less than significant.

Mitigation Measure

HW-1a Drainage, Erosion, and Sedimentation Control Plan

Operations and Maintenance. *LESS THAN SIGNIFICANT.* The impacts from operations and maintenance activities would be less than significant; see discussion under impact HW-1.

Surface Runoff

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* The potential impacts associated with the construction of the Manzanar Alignment Alternative would be the same as for the Proposed Project. This alternative would involve similar construction activities. APM WET-1 (Avoidance of jurisdictional waters, wetlands and riparian areas) would be implemented but would not be sufficient to ensure that the required control for potential localized flooding impacts activities for this alternative are less than significant. Therefore, Mitigation Measure HW-1a (Drainage, Erosion, and Sedimentation Control Plan) is recommended to ensure that potential flooding impacts during construction are less than significant.

Mitigation Measure

HW-1a Drainage, Erosion, and Sedimentation Control Plan (full text in Section 3.12.3.3)

Operations and Maintenance. *LESS THAN SIGNIFICANT.* The impacts from operations and maintenance activities would be less than significant; see discussion under Impact HW-1.

Stormwater Drainage

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* The potential impacts associated with the construction of this alternative would be the same as for the Proposed Project. Mitigation Measure HW-1a (Drainage, Erosion, and Sedimentation Control Plan) is recommended in addition to APM BIO-RES-1 (Habitat

Restoration and Revegetation Plan) and APM HAZ-1 (Prepare a Hazardous Materials and Waste Management Plan) to ensure that these alternatives would not substantially alter the existing drainage patterns or a create a substantial increase in surface runoff. Impacts would be less than significant with mitigation.

Mitigation Measures

HW-1a Drainage, Erosion, and Sedimentation Control Plan (full text in Section 3.12.3.3)

Operations and Maintenance. *LESS THAN SIGNIFICANT.* The impacts from operations and maintenance activities would be less than significant; see discussion under Impact HW-1.

Flood Flows

Construction. *LESS THAN SIGNIFICANT.* The Manzanar Alignment Alternative would involve similar construction activities and create potential impacts similar to the Proposed Project. This alternative would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or increase surface runoff that would impede or redirect flood flows, and thus impacts would be less than significant, and no mitigation is required.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* The impacts from operations and maintenance activities would be less than significant; see discussion under Impact HW-1.

Impact HW-4: Risk release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones.

Construction. *LESS THAN SIGNIFICANT.* This alternative is not located in an area with tsunami or seiche risk. While a flood may occur in the Owens River Valley during construction of the alternative, SCE's APMs would ensure proper storage of potential pollutants. In the event of a flood inundation event during construction, the project work areas have the potential to release pollutants such as sediments from areas where the earth has been disturbed and hazardous materials commonly associated with construction activities and construction equipment and vehicle use, such as petroleum products, cleaning fluids, etc. However, this impact would be minimized with SCE's implementation of the SWPPP BMPs, APM WET-1 (Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats), APM HAZ-1 (Hazardous Materials Management Plan), and compliance with the Clean Water Act and California regulations. As a result, this impact would be less than significant, and no mitigation is required.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* The impacts from operations and maintenance activities would be less than significant; see discussion under Impact HW-1. Pollutants would not be stored at the location of the alternative structures during maintenance, so the likelihood of pollutant release in a flood is minimal.

Impact HW-5: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Construction. *LESS THAN SIGNIFICANT.* Similar to the Proposed Project, this alternative is located within the South Lahontan Basin Area of the Lahontan Regional Water Quality Control Plan (Basin Plan). This alternative would involve the same types of construction activities and would be subjected to the same water quality control permitting (NPDES permit) and associated SWPPP requirements, which would help achieve the water quality objectives in the Basin Plan as the Proposed Project. As discussed under Impact HW-2, like the Proposed Project, this alternative would traverse the same areas managed by the same sustainable groundwater management plan (Owens Valley Basin Groundwater Sustainability Plan) and would not conflict with the groundwater sustainability programs in these plans. In summary, this alternative would not conflict with the applicable water quality and groundwater sustainability programs in these plans. This impact would be less than significant and no mitigation is required.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* The impacts from operations and maintenance activities would be less than significant; see discussion under Impact HW-1. This alternative would require minimal water supply during operations and maintenance, so there would be negligible reduction in recharge.

4.9.12. Land Use and Planning

4.9.12.1. Environmental Setting of the Manzanar Realignment Alternative

The Manzanar Realignment Alternative is located within Inyo County on land managed by federal and regional agencies subjected to various land use and management decisions, including lands managed by the BLM Bishop Field Office and LADWP. Approximately 3 miles of the southern Manzanar Realignment Alternative alignment is located within the Owens Lake ACEC. The Owens Lake ACEC is under the jurisdiction of the BLM's Bishop Field Office's RMP planning area and the CDCA Plan, as amended by the DRECP LUPA. The DRECP LUPA establishes CMAs to conserve, protect, and restore these landscapes.

The Manzanar Realignment Alternative would traverse portions of undeveloped lands in Inyo County zoned as OS-40 that permit single-family dwelling, farm and ranches operations, animal hospitals or kennels, wildlife refuges, hunting and fishing preserves, and wilderness areas and wilderness uses (Inyo County, 2001).

4.9.12.2. Environmental Impacts of the Manzanar Realignment Alternative

Impact LU-1: 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. No impacts related to land use would result from the Manzanar Realignment Alternative. The Manzanar Realignment Alternative would not physically divide an existing community because it would be within an existing LADWP transmission corridor adjacent to existing transmission lines.

The Manzanar Realignment Alternative is located within BLM-administered lands identified in the Bishop Field Office's RMP and the CDCA Plan, as amended by the DRECP LUPA. The Manzanar Realignment Alternative traverses the Owens Lake area, which is designated as an ACEC and SRMA by the Bishop Field Office's RMP and CDCA Plan Area. The same ACECs and SRMAs that are within the Proposed Project area are also located within the Manzanar Realignment Alternative area and the same BLM land use policies under the CDCA Plan that apply to the Proposed Project would apply to the Manzanar Realignment Alternative. The Manzanar Realignment Alternative would comply with all federal conditions and measures and would therefore not conflict with any federal land use plans, policies, or regulations. Similar to the Proposed Project, the Manzanar Realignment Alternative is located on undeveloped lands zoned as OS-40 under the Inyo County General Plan and the Inyo County Zoning Ordinance. As with the Proposed Project, the Manzanar Realignment Alternative would be consistent with the LADWP use of the transmission corridor and would not conflict with any OVLMP policies. The Manzanar Realignment Alternative would not cause a significant environmental impact due to a conflict with plans, policies or regulations adopted by the Inyo County General Plan for the purpose of avoiding or mitigating an environmental effect not analyzed elsewhere in this EIR. There would be no impact.

4.9.13. Mineral Resources

4.9.13.1. Environmental Setting of the Manzanar Realignment Alternative

There are no State-classified MRZs present within the Manzanar Realignment Alternative. There are three locatable metallic mineral resources within 1 mile of the Manzanar Realignment Alternative, including a locatable gold mine approximately 0.70 miles east of the Manzanar Realignment Alterative.

4.9.13.2. Environmental Impacts of the Manzanar Realignment Alternative

Impact MR-1: 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.

Impact MR-2: Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

NO IMPACT. The mineral resources in the vicinity of this alternative would not be affected by the construction or operation of the alternative. There are no aggregate sites located within 1 mile of the Manzanar Realignment Alterative. Further, there are no active mineral resource recovery sites within 1 mile of the Manzanar Realignment Alterative.

In summary, the Manzanar Realignment Alternative is not located within a known mineral resource area and would not affect any known mineral resource areas. No impact on mineral resources would occur for the Manzanar Realignment Alternative.

4.9.14. Noise

4.9.14.1. Environmental Setting of the Manzanar Realignment Alternative

The land use around the Manzanar Realignment Alternative is undeveloped open space and mostly the same as the portion of Segment 1 that the alternative would be replacing. The Manzanar Realignment Alternative would not pass through any developed residential areas and there are no sensitive receptors within 1,000 feet from the Manzanar Realignment Alternative. The Manzanar Realignment Alternative would be further away from US 395 than the Proposed Project alignment in Segment 1 and would therefore experience less traffic noise than the Proposed Project area.

No airports are located in proximity to the Manzanar Realignment Alternative and no airport land use plan is located within the alternative area.

No sensitive receptors are located within 1,200 feet of the realignment segment of the Manzanar Realignment Alternative or in proximity to the structures that would be removed for the existing subtransmission line in the realignment segment.

4.9.14.2. Environmental Impact of the Manzanar Realignment Alternative

Ambient noise levels in the Manzanar Realignment Alternative area would be similar to ambient noise levels for undeveloped areas in Segment 1 (between 35 and 45 dBA Ldn) and noise levels would increase in proximity to US 395 due to traffic noise.

As there are no sensitive receptors in proximity to the realignment segment of the alternative, no additional impacts on sensitive receptors related to temporary or permanent increase in noise levels or groundborne vibration would occur from construction or operations and maintenance of the Manzanar Realignment Alternative.

Impact N-1 Expose persons to or generate a substantial temporary or permanent increase in noise levels in excess of established standards.

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* The impacts associated with Impact N-1 resulting from this alternative would be similar to those discussed under Impact N-1 in Section 3.15.3.3 for the Proposed Project. Construction noise associated with the Manzanar Realignment Alternative would temporarily increase ambient noise levels in the vicinity of the alternative construction area, including the area of existing subtransmission structure removal, and the magnitude of the increase would vary depending on the activity. Noise levels produced for the Manzanar Realignment Alternative would be comparable to

noise levels produced from construction of the Proposed Project as the same equipment and vehicles would be used to construct the alternative alignment.

There are no sensitive receptors within 1,200 feet of the realignment segment of the Manzanar Realignment Alternative. Noise levels along the rest of the alignment would be the same as the proposed Project, and as such project construction noise for the Manzanar Realignment Alternative would not exceed the standards in the local general plan.

Mitigation Measures N-1a (Implement Helicopter Noise Control Strategy) would be required for this alternative, as it would for the segment of the Proposed Project that this alternative would replace. Impacts would be less than significant with mitigation.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* The impacts from operations and maintenance would be similar to activities that are ongoing to maintain the existing subtransmission lines. For the Manzanar Realignment Alternative, these impacts would occur in the alternative ROW and not in the existing Segment 1 ROW. Because the operations and maintenance activities would occur within the areas already disturbed by construction of the alternative itself, no new ground disturbance would be expected during maintenance. SCE would implement the APMs that apply to maintenance activities. Impacts from operations and maintenance would be less than significant.

Impact N-2: Generate or expose persons to excessive groundborne vibration.

Construction. *LESS THAN SIGNIFICANT.* Construction of the Manzanar Realignment Alternative would require use of the same construction equipment and vehicles as the Proposed Project and would therefore generate the same vibration levels as the Proposed Project. Vibration from construction equipment and activities would be perceptible at distances closer than 50 feet from construction activities but would not exceed the annoyance threshold (0.10 PPV) unless activities occur at distances closer than 22 feet. There are no sensitive receptors within 1,200 feet of the realignment segment of the Manzanar Realignment Alternative, and vibration would not be perceptible at a distance of over 1,200 feet from the construction area. Thus, the impact would be less than significant. No mitigation is required.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* The impacts from operations and maintenance activities would be less than significant see discussion under Impact N-1.

4.9.15. Population and Housing

4.9.15.1. Environmental Setting of the Manzanar Realignment Alternative

The environmental setting presented in Section 3.16.1 also applies to the Manzanar Realignment Alternative.

4.9.15.2. Environmental Impact of the Manzanar Realignment Alternative

Impact PH-1: Induce substantial population growth in an area, either directly or indirectly.

Construction. *NO IMPACT.* The Manzanar Realignment Alternative would be in or immediately adjacent to an existing transmission ROW, designated for use by existing transmission lines and compatible uses such as parks or parking lots. This alternative would displace no housing or buildings. No need for new replacement housing would result from implementation of this alternative. There would be no impact.

The alternative would not displace a substantial number of people from housing, and there would be no impact related to displacement.

Operations and Maintenance. *NO IMPACT.* There would be no change in SCE's permanent staffing levels required to maintain the upgraded transmission lines or upgraded substations for the Manzanar

Realignment Alternative. Therefore, no population growth would occur as a result of operation of this alternative segment, and no impact would occur.

Impact PH-2: Displace a substantial number of existing people or housing.

Construction. *NO IMPACT.* The Manzanar Realignment Alternative would be in or immediately adjacent to an existing transmission ROW, designated for use by existing transmission lines and compatible uses such as parks or parking lots. This alternative would displace no housing or buildings. No need for new replacement housing would result from implementation of this alternative. There would be no impact.

The alternative would not displace a substantial number of people from housing, and there would be no impact related to displacement.

Operations and Maintenance. *NO IMPACT.* There would be no change in SCE's permanent staffing levels required to maintain the upgraded transmission lines or upgraded substations for the Manzanar Realignment Alternative. Therefore, no population growth would occur as a result of operation of this alternative segment, and no impact would occur.

4.9.16. Public Services

4.9.16.1. Environmental Setting of the Manzanar Realignment Alternative

The environmental setting presented in Section 3.17.1 also applies to the Manzanar Realignment Alternative.

4.9.16.2. Environmental Impacts of the Manzanar Realignment Alternative

Impact PS-1: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives.

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* The Manzanar Realignment Alternative would include construction of the replacement subtransmission facilities and would require activities similar to the Proposed Project. The impacts to public services would also be substantially similar as those described in Section 3.17.3.3 for the Proposed Project. Similar to the Proposed Project, the Manzanar Realignment Alternative would not substantially affect the provision of existing fire or emergency services or require the provision of service beyond existing capacities. The Manzanar Realignment Alternative construction activities would not require the expansion of existing fire stations or fire protection services with implementation of the Fire Management Plan.

However, construction activities may interfere with emergency response times, related to traffic issues, which would be a significant impact. SCE has proposed APM TRA-1, Traffic Control Measures, to ensure that traffic controls are used. However, with implementation of APM TRA-1, there would be a significant impact, because the APM does not require that the traffic control measures be reviewed and approved by the affected jurisdictions and does not adequately reduce impacts to emergency service vehicle access. Proposed Mitigation Measure T-1b (Prepare traffic control plans) requires traffic control plan(s) be prepared by SCE, to supplement SCE commitments provided in APM TRA-1 to further reduce potential impacts to emergency service vehicle operations through any roadway affected by the project. With implementation of Mitigation Measure T-1b (Prepare traffic control plans), the impact would be less than significant.

Impacts related to law enforcement, ambulatory services, schools, and medical facilities to support the construction of the Manzanar Realignment Alternative would not require changes to these existing

services and would be identical to those described in Section 3.17.3.3, therefore resulting in a less than significant impacts.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* The impacts from operations and maintenance would be similar to activities that are ongoing to maintain the existing subtransmission lines. For the Manzanar Realignment Alternative, these impacts would occur in the alternative ROW and not in the existing Segment 1 ROW. The Manzanar Realignment Alternative would be located immediately adjacent to two larger LADWP transmission lines, which currently undergo similar maintenance activities. Because the operations and maintenance activities would occur within the areas already disturbed by construction of the alternative itself, no new ground disturbance would be expected during maintenance. SCE would implement the APMs that apply to maintenance activities. Impacts from operations and maintenance would be less than significant.

4.9.17. Recreation

4.9.17.1. Environmental Setting of the Manzanar Realignment Alternative

The Manzanar Realignment Alternative would replace approximately 29.4 miles of the proposed I-C ROW and would be a total of 30 miles long. The southern terminus of the Manzanar Realignment Alternative would begin at the Control-Haiwee Substation, within the Owens Lake ACEC, then go north. The alternative would cross Highway 136 southeast of the community of Lone Pine, approximately 1.3 miles further east when compared to the Proposed Project. The Manzanar Realignment Alternative would be located, at some points, up to 2.5 miles east of the proposed I-C ROW, immediately adjacent to existing LADWP transmission lines. The northern terminus of the alternative would be located approximately 5 miles northeast of the town of Independence.

The Manzanar Realignment Alternative would result in the transmission line route being approximately 3.5 miles east from the Manzanar NHS. The Manzanar Realignment Alternative would intersect with just one recreational resource, the Owens Lake ACEC, for 2.9 miles.

The Manzanar Realignment Alternative is near, but does not intersect with, the following recreational resources: the Diaz Lake Campground, Mount Whitney Golf Course, Eastern Sierra Visitors Center, Alabama Hills National Scenic Area, and Spainhower Park. The alternative is located approximately 2 to 3 miles east of these recreational resources.

4.9.17.2. Environmental Impacts of the Manzanar Realignment Alternative

Impact REC-1: Disrupt recreational activities, temporarily blocking or reducing access and visitation to recreational areas.

Construction. *LESS THAN SIGNIFICANT.* The construction activities required for the Manzanar Realignment Alternative would be similar to the Proposed Project, as described in Section 3.18.3.3 (Segment 1).

The Manzanar Realignment Alternative would pass through the Owens Lake ACEC for approximately 2.9 miles, slightly longer than the Proposed Project. The temporary construction activities would not block access or disrupt recreational activities in the ACEC, even if the recreational experience were somewhat diminished during construction activities. Due to the limited range of construction effects, in both time and extent, construction impacts would be less than significant, and no mitigation is required.

The Manzanar Realignment Alternative would be located approximately 2 to 3 miles from several recreational resources listed in Table 3.18-1. These distances are on average 1.3 miles further east than the Proposed Project. Specifically, the alternative would be 3.5 miles further east from Manzanar NHS than the Proposed Project. At this distance, Manzanar NHS, and the other recreational resources, which are located approximately 2 to 3 miles away, would not be disrupted by construction, and impacts would be less than significant with no mitigation required.

Construction of the Manzanar Realignment Alternative would require removal of the existing structures along the 30-mile stretch that would be replaced by the alternative. As required for Segment 1 of the Proposed Project (see Section 3.18.3.4), Mitigation Measures AQ-2b (Control Fugitive Dust Emissions) and N-1a (Helicopter Noise Control Strategy) shall be implemented here in order to ensure construction disturbance impacts are less than significant.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* Operations and maintenance of the Manzanar Realignment Alternative would not result in a disruption of recreational activities, due to the location of the alternative near an existing transmission line, and use of existing access roads. Like the Proposed Project, it is likely that operations and maintenance work would be less intense for the alternative when compared to the existing structures due to their age. Impacts would be adverse but less than significant.

Impact REC-2: Damage recreational trails or facilities.

Construction, Operations and Maintenance. *NO IMPACT.* The Manzanar Realignment Alternative would not cross any recreational trails or facilities that could be damaged. Although the alternative intersects with the Owens Lake ACEC, there are no trails or facilities that are a part of the recreational resource that would intersect with the ROW. Therefore, there would be no impact.

4.9.18. Transportation

4.9.18.1. Environmental Setting of the Manzanar Realignment Alternative

The Manzanar Realignment Alternative crosses Citrus Road, Manzanar Reward Road, Lone Pine Narrow Gauge Road, and State Route 136 to the east of US 395 prior to reconnecting with the Proposed Project alignment. These additional roadways would not be crossed by the Proposed Project.

All other crossings under this alternative would be the same as the Proposed Project (described in Section 3.19.1.2).

4.9.18.2. Environmental Impacts of the Manzanar Realignment Alternative

Impact T-1: Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* The impacts associated with Impact T-1 resulting from this alternative would be similar to those discussed under Impact T-1 in Section 3.19.3.3 for Proposed Project trips affecting traffic flow and congestion and temporary lane closures. The alternative is very near the Proposed Project and the same construction equipment and personnel would construct this segment, using the same primary access roads.

The alternative would also require construction activities in the existing I-C Project corridor because the existing structures would be removed after the alternative line is energized. Construction activities and ground disturbance would be limited to the area around each existing structure, the use of material yards, and the use of access roads.

There would be no impacts expected with respect to bus service, rail service, or pedestrian/bicyclist movement associated with this alternative segment. The alternative is not located near paved roadways, bus routes, or rail lines.

Mitigation Measures T-1a (Prepare Construction Transportation Plan), T-1b (Prepare Traffic Control Plan(s)), and T-1c (Obtain permits or approvals for crossing or working in railroad rights-of-way) would be required for this alternative, as they would for the Proposed Project. Impacts would be less than significant with mitigation.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* Once constructed, operations and maintenance of this alternative would have negligible impacts on the roadway system so would not conflict with existing plans or ordinances. The inspection and maintenance activities would generate a very small volume of vehicular traffic. If a major repair were required at a particular location, the temporary transportation impacts would be short-term, limited in scale, and require trip volumes significantly less than the construction impacts addressed above. Impacts would be less than significant.

Impact T-2: Conflict or be inconsistent with State CEQA Guidelines Section 15064.3(b) regarding vehicle miles traveled.

Construction. *LESS THAN SIGNIFICANT.* The discussion in Impact T-2 for the Proposed Project (Section 3.19.3.3) would also apply to the Manzanar Realignment Alternative with respect to trips, vehicle movement, and vehicle miles traveled. The two segments are located very near each other and would use the same roads and equipment. The northern and southern endpoints are at the Proposed Project locations. Impacts would be less than significant; no mitigation would be required.

Operations and Maintenance. *NO IMPACT.* Upon completion of construction, all truck trips and worker commute trips related to construction activities would cease. The inspection and maintenance activities would generate a very small volume of vehicular traffic. If a major repair were required at a particular location, the temporary transportation impacts would be short-term, limited in scale, and require trip volumes significantly less than the construction impacts addressed above. Therefore, operation of the Project would have no impacts related to substantial or sustained increase in VMT.

Impact T-3: Result in inadequate emergency access.

Construction. *LESS THAN SIGNIFICANT.* The Manzanar Realignment Alternative would have similar potential impacts with respect to temporary lane or road closures and emergency vehicles as discussed for Impact T-3 in Section 3.19.3.3 for the Proposed Project. Thus, this alternative would be required to implement Mitigation Measure T-1b (Prepare Traffic Control Plan). Impacts would be less than significant with mitigation.

Operations and Maintenance. *LESS THAN SIGNIFICANT. LESS THAN SIGNIFICANT.* Maintenance activities for the alternative would occur primarily within the subtransmission ROW and would use existing unpaved access roads for the LADWP transmission facilities. Movement of emergency vehicles would not be affected.

Impact T-4: Require the temporary closure of lanes or roadways resulting in a substantial increase in roadway hazards.

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* The Manzanar Realignment Alternative would have similar potential impacts with respect to temporary lane or road closures and roadway hazards as discussed for Impact T-4 in Section 3.19.3.3 for the Proposed Project. Thus, this alternative would be required to implement Mitigation Measure T-1b (Prepare Traffic Control Plan(s)). Impacts would be less than significant with mitigation.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* The impacts from operations and maintenance would be less than significant; no temporary lane or road closures for public roads are anticipated. See the discussion of operations and maintenance under Impact T-1.

Impact T-5: Increase roadway hazards through damage to road surfaces.

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* The Manzanar Realignment Alternative would have similar potential impacts with respect to roadway hazards and damage as discussed for Impact T-5 in Section 3.19.3.3 for the Proposed Project. Thus, this alternative would be required to implement Mitigation

Measure T-5a (Repair roadways damaged by construction activities). Impacts would be less than significant with mitigation.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* Operations and maintenance activities would be focused along the transmission line access road; roadway damage is not anticipated. The impact would be less than significant; see discussion under Impact T-1.

Impact T-6: Conflict with FAA recommendations to reduce hazards to navigable airspace, an airport land use plan, or restrictions to airspace related to active military flights.

Construction*. NO IMPACT.* There is no impact applicable to construction because this impact applies to operating structures with conductors in place.

Operations and Maintenance. *NO IMPACT.* The Manzanar Realignment Alternative would not result in a significant impact navigable airspace or airport land use plans. This alternative is not near DOD facilities, but like the Proposed Project, it would be located within broad areas of low flying military aircraft. However, this alternative would be constructed immediately adjacent to existing larger and taller transmission infrastructure owned by LADWP. As a result, the height of the alternative structures would create no impact with respect to airspace conflicts.

Impact T-7: Create a hazard to the public or the environment through the transport of heavy loads with helicopters.

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* The Manzanar Realignment Alternative would have similar potential impacts with respect to helicopter use hazards as discussed for Impact T-7 in Section 3.19.3.3 for the Proposed Project. Thus, Mitigation Measure T-7a (Prepare and implement a final helicopter use plan) would be required. Impacts would be less than significant with mitigation.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* Operations and maintenance activities are unlikely to require helicopter use. The infrequent use of a helicopter for would not result in a significant impact given the location of this alternative; see discussion under Impact T-1.

4.9.19. Utilities and Service Systems

4.9.19.1. Environmental Setting of the Manzanar Realignment Alternative

The environmental setting presented in Section 3.20.1 also applies to the Manzanar Realignment Alternative, except for the alternative's proximity to other transmission lines. In the Manzanar Realignment, the current 115 kV I-C line would be moved from its existing location in an SCE ROW, to an existing LADWP transmission corridor, containing two larger transmission lines. Like the Crater Mountain Realignment, the Manzanar Realignment would have a greater separation from US 395 than the Proposed Project.

Because the Manzanar Realignment Alternative would be located nearly 2 miles further east of the Proposed Project route, this alternative would require an extension of the Independence Communications tap (see Section 2.2.3.1).

4.9.19.2. Environmental Impacts of the Manzanar Realignment Alternative

Impact US-1: Require new water supply entitlements or place demands on local water providers.

Construction. *LESS THAN SIGNIFICANT.* The Manzanar Realignment Alternative would include construction of replacement subtransmission facilities and would require activities similar to the Proposed Project, would require the same amount of water as the Proposed Project, and would not require new water supply entitlements or place demands on local water providers. As discussed in Section 3.12.3.3, the Proposed Project's conservative estimate of approximately 1,000 acre-feet of annual water consumption represents

approximately 12 percent of the 2025 estimated MWA supply surplus, and approximately 0.17 percent of the water used for agriculture and exports in Inyo County and thus would not require a new water supply or place demands on local water providers. Therefore, because of the volume of groundwater that would be used during construction when compared to the existing groundwater supplies in the area, the impact would be less than significant.

Operations and Maintenance. *NO IMPACT.* Operations and maintenance activities along the Manzanar Realignment Alternative would require similar water usage as that occurring along the existing SCE line, so no net increase in water usage would be required. There would be no impact on water supplies.

Impact US-2: Generate solid waste in excess of state or local regulations or in excess of the capacity of local infrastructure.

Construction. *LESS THAN SIGNIFICANT.* The Manzanar Realignment Alternative would include construction of the replacement subtransmission facilities and would require activities similar to the Proposed Project. The Crater Mountain Realignment Alternative would produce a similar amount of solid waste as the Proposed Project, which is within the capacity of landfill facilities. The impact would be less than significant.

Operations and Maintenance. *NO IMPACT.* Similar to the Proposed Project, operations and maintenance activities for the Manzanar Realignment Alternative may require replacement of project components as is done with the existing subtransmission line. These activities would not generate significant quantities of solid waste. Therefore, there would be no impact.

Impact US-3: Disrupt existing pipelines and utility systems or cause a collocation accident.

Construction. *LESS THAN SIGNIFICANT.* The Manzanar Realignment Alternative would include construction of the replacement subtransmission facilities and would require activities similar to the Proposed Project. As with the Proposed Project, SCE would contact Underground Service Alert to identify any existing underground utilities in the construction zone. Therefore, the impact would be less than significant.

Operations and Maintenance. *NO IMPACT.* During operations and maintenance of this alternative, there would be ongoing periodic needs to repair or replace project components. As is done currently, SCE would coordinate with other utilities prior to construction that may affect other utility facilities. There would be no impact compared with current operation.

4.9.20. Wildfire

4.9.20.1. Environmental Setting of the Manzanar Realignment Alternative

The Manzanar Realignment Alternative consists of undeveloped open space areas and does not pass through any developed residential areas. The Manzanar Realignment Alternative would be located further from US 395 and Lone Pine than the project alignment in Segment 1. The majority of the Manzanar Realignment Alternative alignment is located within high FHSZ in SRA, similar to the portion of Segment 1 that would be replaced by the alternative.

4.9.20.2. Environmental Impacts of the Manzanar Realignment Alternative

Impact WF-1: Substantially impair emergency response or emergency evacuation.

Construction. *LESS THAN SIGNIFICANT.* No emergency evacuation routes are located in the Manzanar Realignment Alternative area or crossed by the Manzanar Realignment Alternative or area of existing subtransmission line structure removal. Similar to the Proposed Project, the Manzanar Realignment Alternative is not expected to significantly impact traffic circulation or increase demands on existing emergency response services during temporary construction activities. The Manzanar Realignment Alternative would also implement APM TRA-1 which requires coordination with local authorities, including emergency

responders, regarding construction schedules and temporary road closures. With implementation of APM TRA 1, construction of the Manzanar Realignment Alternative would not interference with emergency response or evacuation plans. The Manzanar Realignment Alternative would avoid the project crossing of US 395 and impacts during construction would be slightly reduced from the Proposed Project due to fewer road and highway crossings but would remain less than significant.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* Operations and maintenance activities for the Manzanar Realignment Alternative would be similar to existing operations and maintenance activities performed at the existing subtransmission line and substations. Both the Proposed Project and Manzanar Realignment Alternative would use steel structures that have low risk of burning and blocking a road during a wildfire emergency evacuation. Because the Manzanar Realignment Alternative would avoid populated areas and would not cross US 395, the potential impact on emergency evacuation or emergency response would be slightly less than the Proposed Project but would remain less than significant.

Impact WF-2: Exacerbate wildfire risks, due to slope, prevailing winds, and other factors, that would thereby expose people to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire.

Construction*. LESS THAN SIGNIFICANT.* The Manzanar Realignment Alternative construction areas including the area of the existing subtransmission line that would be removed include areas that contain vegetation within and adjacent to wildlands designated as high FHSZ in SRA. Construction-related activities within areas located in or near wildlands have the potential to ignite a wildland fire, similar to construction activities for the Proposed Project. Similar to the Proposed Project, a Fire Prevention and Emergency Response Plan would be developed as part of APM HAZ-3 to address the risks of wildfire during construction of the Manzanar Realignment Alternative. With implementation of APM HAZ-3, the impact from construction of the Manzanar Realignment Alternative would be less than significant.

Operations and Maintenance. Implementation of the Manzanar Realignment Alternative would not expose new areas to risk of wildfire because the Manzanar Realignment Alternative would be adjacent to the existing LADWP transmission lines. The Manzanar Realignment Alternative would involve removal of the existing SCE subtransmission line from the existing ROW and would install stronger and taller steel poles that would increase the clearance with the ground and vegetation and thereby reduce the potential for fire ignition compared to existing conditions in SCE ROW.

Maintenance activities necessary for the Manzanar Realignment Alternative would be similar to the existing subtransmission lines, substations, and associated facilities within SCE ROW, but would be within a new alignment. As with current operations and maintenance, SCE would comply with all current federal and State laws related to vegetation clearance and fire prevention. SCE would also implement its Wildfire Mitigation Plan required under SB 901 during operations and maintenance activities (Figure 3.21-2, CPUC High Fire Threat District), which is required in SCE's High Fire-risk Areas (SCE, 2024). Therefore, operations and maintenance of the Manzanar Realignment Alternative would not exacerbate wildfire risks. Impacts would be equivalent to the Proposed Project and would be less than significant.

Impact WF-3: Require the installation or maintenance of 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.

Construction*. LESS THAN SIGNIFICANT.* Construction activities would involve the installation of a subtransmission line along a new route and the removal of the existing subtransmission line from its current alignment. As discussed above in Impact WF-2, with the implementation of APM HAZ-3, construction of the Manzanar Realignment Alternative would not exacerbate wildfire risks. Impacts during construction would be less than significant.

Operations and Maintenance. The Manzanar Realignment Alternative would be located in LADWP ROW adjacent to existing LADWP transmission lines Maintenance activities for the Manzanar Realignment Alternative would be similar to maintenance activities for the existing I-C subtransmission line but would occur within the alternative alignment rather than SCE ROW. The existing I-C subtransmission line would be removed from SCE ROW and the existing fire threat posed by the existing subtransmission line segment would be removed. SCE would continue to implement its standard fire prevention protocols during maintenance activities, comply with applicable laws and regulations, participate in the Red Flag Fire Prevention Program and implement its Wildfire Mitigation Plan along the Manzanar Realignment Alternative. Therefore, operations and maintenance of the Manzanar Realignment Alternative would not exacerbate wildfire risks. Impacts would be equivalent to the Proposed Project and would be less than significant.

Impact WF-4: 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.

Construction*. LESS THAN SIGNIFICANT.* The Manzanar Realignment Alternative is generally located within a valley flanked by the Sierra Nevada mountain range to the west and Inyo mountains to the east. While the Manzanar Realignment Alternative and the existing subtransmission lines are where structures would be removed are located in the valley and not adjacent to the mountains, if a wildfire ignited in the valley spread to the mountains, it would be expected to spread upslope and could cause loss of significant vegetation along the slope thereby increasing the risk of flooding or landslides. As with the Proposed Project, APM HAZ-3 would be implemented which includes procedures for reporting and responding to a fire during construction to help contain any fire ignited by construction. Therefore, although construction activities could ignite a wildfire that could burn the surrounding hill slopes, implementation of APM HAZ-3 would contain fires started by construction so that they do not extend beyond the valley and create subsequent landslide or flooding conditions in the surrounding mountain areas. Impacts would be equivalent to the Proposed Project and would be less than significant.

Operations and Maintenance. During operations, the Manzanar Realignment Alternative structures would be maintained by SCE and would comply with all current federal and State laws related to vegetation clearance and fire prevention. The Manzanar Realignment Alternative structures would replace the existing subtransmission structures and would consist of modern steel poles that increase the clearance between the subtransmission line and the ground/vegetation compared to the existing subtransmission line in SCE ROW. Maintenance activities for the Manzanar Realignment Alternative would include implementation of SCE's Wildfire Mitigation Plan. The operations and maintenance impact on wildfire-induced flooding and landslides would be equivalent to the Proposed Project and less than significant.

4.10. Impacts of the Fossil Falls Realignment Alternative

The Fossil Falls Realignment Alternative is described in Section 4.3.3 and illustrated in Figure 4-4. This alternative segment would move the subtransmission line to the east side of Little Lake and east of the prominent Saltlake Cinder Cone. This alternative segment would be as much as two miles east of the current location, and much less visible from US 395.

4.10.1. Aesthetics

4.10.1.1. Environmental Setting of the Fossil Falls Realignment Alternative

The Fossil Falls Realignment Alternative is located just south of Owens Valley. Bordered by the Sierra Nevada Mountains on the west and the Coso Range on the east, the landscape encompasses gently sloping alluvial fans and mostly level basin floors, punctuated by ancient lava fields, and backdropped by angular to rounded mountains. A variety of shrubs and grasses present a fairly limited color palette of pale yellow, tans, and muted greens. Existing electric transmission facilities are also prominently visible and generally run north-south along the level plain, often in close proximity to US 395, the primary road corridor through

the valley. The Fossil Falls Realignment Alternative would be located within or adjacent to an existing utility corridor that contains multiple facilities and is located to the east of US 395 and Fossil Falls.

Key Observation Points

Given this alternative's relatively remote location between US 395 and the Coso Range foothills to the east, views of the alternative would be somewhat limited. Distant views would be available from US 395 and Fossil Falls. Closer views would be available from Little Lake and local access roads including Dunmovin, Gill Station Coso Road, and Cinder Road. One KOP (KOP 1-17) was selected to characterize the landscape setting.

KOPs analyzed for the Proposed Project segment that would be replaced by this alternative are: 1-16, 1-17, 1-17.1, 1-17.2a, 1-17.2b, 1.18, and 1-19. The analysis of these KOPs is presented in Section 3.2.3.3 (Segment 1), under Impact AE-3.

KOP 1-17 – Fossil Falls Trail

Figure 3.2-28A (KOP 1-17 Existing View, Fossil Falls Alternative) presents the existing view to the southeast from Fossil Falls Trail. The view encompasses a portion of the Fossil Falls Realignment Alternative route, which would be located within or adjacent to the existing utility corridor (visible in the image) that passes approximately 0.7 mile east of Fossil Falls.

Visual Quality. Moderate. The foreground is dominated by dark, rounded to jagged, volcanic rock and low-growing, relatively non-descript shrubs and grasses of tan to russet and yellow colors, backdropped by rolling hills and angular ridges. The existing electric utility corridor containing lattice structures is visible traversing the lava field.

Viewer Concern. High. Although the existing energy transmission infrastructure is visible in the views from the Fossil Falls Trail, viewers would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background hills, ridgelines, and sky) an adverse visual change.

Viewer Exposure. Moderate. The alternative would be moderately visible in the middleground views from Fossil Falls Trail. The number of viewers would be low, but the duration of view would be extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of moderate for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 1-17, combining the equally weighted moderate visual quality, high viewer concern, and moderate viewer exposure results in an overall rating of moderate to high for visual sensitivity of the visual setting and viewing characteristics.

4.10.1.2. Environmental Impacts of the Fossil Falls Realignment Alternative

Impact AE-3: In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings.

Most project impacts associated with construction or long-term presence of project components fall into the category of degradation of visual character or quality. Substantial degradation results from higher levels of visual contrast, project dominance, and view blockage. Visual contrast relates to spatial characteristics, visual scale, texture, form, line, and color. Therefore, this criterion will be utilized for making impact conclusions regarding the Fossil Falls Realignment Alternative's effects on existing landscapes and views.

Construction. *LESS THAN SIGNIFICANT.* Construction of the Fossil Falls Realignment Alternative would cause temporary visual effects due to the presence of equipment, vehicles, materials, and workforce. These effects would occur all along the alternative. Construction would involve the use of cranes, heavy

construction equipment, temporary storage and office facilities, and temporary laydown/staging areas. Construction activities would include site clearing and grading, erection of the structures, conductor stringing and pulling, and site cleanup and restoration. The alternative would also require construction activities in the existing I-C Project corridor because the existing structures would be removed after the alternative line is energized. Construction activities and ground disturbance would be limited to the area around each existing structure, use of access roads, and use of material yards.

Distant views of construction activities would be available to travelers on US 395 and visitors to Fossil Falls. Closer views would be available from Little Lake and local access roads including Gill Station Coso Road, and Cinder Road.

Throughout the construction period, the industrial character of the activities would cause substantial visual contrast and visual change and constitute adverse visual effects when viewed from close viewing locations. However, construction activities and equipment brought into the alternative area and onto the alternative sites would be temporary as construction moves along the route. The resulting aesthetics impact would be less than significant, and no mitigation is required.

Operations and Maintenance. *BENEFICIAL AND LESS THAN SIGNIFICANT.* Impact AE-3 considers the permanent impacts (i.e., operational and maintenance effects) of the Fossil Falls Realignment Alternative. The analysis of operational effects was conducted with respect to the visual change perceived from one representative KOP. The following paragraphs present the aesthetics analysis for KOP 1-17.

KOP 1-17 – Fossil Falls

Figure 3.2-28A (KOP 1-17 Existing View, Fossil Falls Alternative) presents the existing view to the southeast from the Fossil Falls Trail. The view encompasses a portion of a lava field dominated by dark, rounded to jagged, volcanic rock and low-growing, relatively non-descript shrubs and grasses of tan to russet and yellow colors, backdropped by rolling hills and angular ridges. The existing electric utility corridor containing lattice structures is visible traversing the lava field. Figure 3.2-28B (KOP 1-17 Visual Simulation, Fossil Falls Alternative) presents a visual simulation that illustrates the addition of the alternative to an existing transmission line corridor located to the east of Fossil Falls. While visibility of the new structures could vary somewhat depending on diurnal and seasonal lighting conditions, the marginal difference in the form, line, color, and texture of the proposed replacement monopoles would result in a low level of visual contrast with the replacement structures appearing co-dominant relative to the scale of the other structural features but subordinate to the surrounding landforms. View blockage of higher value landscape features (hills, ridges, and sky) would be low to moderate. The overall level of visual change would be low to moderate. In comparison to the existing view presented in Figure 3.2-28A (KOP 1-17 Existing View, Fossil Falls Alternative), the alternative would not substantially change either the corridor landscape or the structural characteristics and contrast of the corridor facilities. Nor would it substantially affect views from Fossil Falls since views along the trail and at the Falls is typically oriented to the southwest with the lava flow.

However, to fully capture the effects of the Fossil Falls Realignment Alternative, the elimination of the effects of the Proposed Project route must also be considered. Figure 3.2-28C (KOP 1-17 Existing View, Fossil Falls Alternative) presents the existing view to the southwest down the lava flow toward the Proposed Project route. As shown in the image, the existing subtransmission line corridor, with lattice structures that have weathered to a medium gray, is barely discernible as it passes along the valley plain. Figure 3.2-28D (KOP 1-17 Proposed Project Sim., Fossil Falls Alternative) presents a visual simulation that illustrates the replacement of the existing lattice-structure subtransmission line with galvanized tubular steel monopoles. Although the replacement monopoles would be visibly taller than the existing lattice structures, the height of the new poles would not substantially change the overall visibility of the Project in relation to the landscape backdrop.

Although the replacement poles would appear lighter in color and would be somewhat more reflective when compared with the lattice structures (depending on time of day and season), over time the new galvanized finish would weather, resulting in less contrast with the backdrop and a closer match to the existing transmission structures in the landscape.

Figure 3.2-28E (KOP 1-17 Fossil Falls Sim., Fossil Falls Alternative) depicts the results of implementation of the Fossil Falls Realignment Alternative, which would result in not only the relocation of the Proposed Project to the east of Fossil Falls, but removal of the existing line as well. The installation of the alternative line segment as defined for this alternative would result in a less than significant impact. Because this alternative would avoid the impact illustrated in Figure 3.2-28D (KOP 1-17 Proposed Project Sim., Fossil Falls Alternative) and would also cause the removal of the existing subtransmission line shown in Figure 3.2-28C (KOP 1-17 Existing View, Fossil Falls Alternative), the overall impact of the alternative would be beneficial to views from Fossil Falls and the Fossil Falls Trail. No mitigation measures would be required.

Impact AE-5: Create a new source of substantial light or glare that would adversely affect day or nighttime views.

LESS THAN SIGNIFICANT. Night lighting and glare impacts within the Fossil Falls Realignment Alternative would be the same as for Segment 1. The impact would be less than significant as defined for the Proposed Project.

4.10.2. Agriculture and Forestry Resources

4.10.2.1. Environmental Setting of the Fossil Falls Realignment Alternative

The Fossil Falls Realignment Alternative is not located on or near FMMP-designated Farmland. The Fossil Falls Realignment Alternative would traverse portions of undeveloped lands designated as SFL and zoned as OS-40. Inyo County permitted uses for OS-40 include farm and ranch operations such as livestock, orchards, vineyards, field and truck crops, nurseries, greenhouses, vegetables, flower gardening and other agricultural-related fields (Inyo County, 2001).

The Fossil Falls Realignment Alternative does not traverse lands zoned as forest land, timberland or timberland productions. No forest vegetation communities meeting the definition of forest occur in proximity to the Fossil Falls Realignment Alternative.

4.10.2.2. Environmental Impacts of the Fossil Falls Realignment Alternative

NO IMPACT. The Fossil Falls Realignment Alternative would have no impact on lands under Williamson Act contract because no lands subject to Williamson Act contracts occur in the Fossil Falls Realignment area. No active agricultural operations occur in the Fossil Falls Realignment Alternative area.

One impact related to agriculture and forestry would apply to the Fossil Falls Realignment Alternative. Construction and operation of the Fossil Falls Realignment Alternative would not occur in FMMP-designated Farmland, lands under Williamson Act contract, active agricultural operations, lands zoned as forest land, timberland or timberland production zone, or lands meeting the definition of forest land. Therefore, Impact AF-1, Impact AF-3, Impact AF-4, Impact AF-5, and Impact AF-6 are not discussed further.

Impact AF-2: Conflict with existing zoning for agricultural use or a Williamson Act contract.

LESS THAN SIGNIFICANT. The Fossil Falls Realignment Alternative is within areas where existing agricultural land use and zoning designations are present. The northern and southern portions of the Fossil Falls Realignment Alternative are located in undeveloped lands designated as SFL and zoned as OS-40 in Inyo County. The Fossil Falls Realignment Alternative would be constructed within approximately 2 miles east of the existing subtransmission line and would be installed within the same types of land use and zoning designations for agricultural uses as the existing subtransmission line and the Proposed Project. Removal

of the existing subtransmission structures in the existing alignment would remove structures from areas designated for agricultural use. The Fossil Falls Realignment Alternative alignment would not result in any changes to land use or zoning designations or create any new conflicts with land use or zoning designations for agricultural uses because agricultural activities could occur on properties zoned OS-40 within the Fossil Falls Realignment Alternative alignment after implementation of the alternative, and there would be no significant net change in potential agricultural land impacted by the new subtransmission towers. Therefore, impacts would be less than significant.

The Fossil Falls Realignment Alternative would have no impact on lands under Williamson Act contract because no lands subject to Williamson Act contracts occur in the project area.

4.10.3. Air Quality

4.10.3.1. Environmental Setting of the Fossil Falls Realignment Alternative

The Fossil Falls Realignment Alternative would be approximately 15.8 miles long; see Figure 4-4 (Fossil Falls Realignment Alternative). The location of the alternative east of the Coso Substation would require construction of an approximately 0.5-mile long new 115 kV interconnection with that substation from the alternative route.

The alternative would also require construction activities in the existing I-C Project corridor because the existing structures would be removed after the alternative line is energized. Construction activities and ground disturbance would be limited to the area around each existing structure, use of access roads, and use of material yards.

4.10.3.2. Environmental Impacts of the Fossil Falls Realignment Alternative

Impact AQ-1: Conflict with or obstruct implementation of an applicable air quality plan.

LESS THAN SIGNIFICANT. The potential impacts associated with the construction and operations and maintenance of this alternative would be similar to the Proposed Project as this alternative would involve similar construction and operations and maintenance activities. Impacts would be less than significant.

Impact AQ-2: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard.

LESS THAN SIGNIFICANT WITH MITIGATION. Due to the comparable type and intensity of activity, the annual and daily rates of emissions would be nearly the same as in the Proposed Project. This alternative is not expected to exceed any additional air quality thresholds compared to the Proposed Project. While the construction of the new structures would occur in a different location (in the alternative ROW) than the removal of existing structures (in the existing ROW), the components of construction activity and vehicle emissions would be essentially the same as for the Proposed Project.

The pollutant emissions of this alternative alone are not expected to exceed any additional air quality thresholds, but as a component of the Proposed Project as a whole, they contribute to a potentially significant impact, that would require implementation of Mitigation Measures AQ-2a (Control Off-Road Equipment Emissions with Tier 4 Engines, Supersedes APM AQ-1) and AQ-2b (Control Fugitive Dust Emissions).

Implementation of Mitigation Measure AQ-2a (Control Off-Road Equipment Emissions with Tier 4 Engines, Supersedes APM AQ-1) and Mitigation Measure AQ-2b (Control Fugitive Dust Emissions) would be required as in the Proposed Project to avoid causing any new violations or contributing substantially to existing violations of the ambient air quality standards, and to further reduce the adverse regional and localized effects of construction-phase emissions. Impacts would be less than significant with mitigation.

Mitigation Measures for Impact AQ-2

AQ-2a Control Off-Road Equipment Emissions with Tier 4 Engines (Supersedes APM AQ-1).

AQ-2b Control Fugitive Dust Emissions.

Impact AQ-3: Expose sensitive receptors to substantial pollutant concentrations.

LESS THAN SIGNIFICANT WITH MITIGATION. The potential impacts associated with the construction and operations and maintenance of this alternative would be similar to the Proposed Project as this alternative would involve similar construction and operations and maintenance activities. While the distances between the Project and some of the sensitive receptors would change, the closest sensitive receptor would be the same distance from the ROW for both the Fossil Falls Realignment Alternative and the Proposed Project. Additionally, the pollutant emissions would be distributed over the construction period and across the alignment and thus would not be concentrated in any one area. As a result, the actual emissions that would be created at a single site, and thus near a single sensitive receptor, would be a fraction of the overall Proposed Project emissions. The pollutant emissions of this alternative alone are not expected to expose sensitive receptors to substantial pollutant concentrations, but as a component of the Proposed Project as a whole, they contribute to a potentially significant impact, that would require implementation of Mitigation Measures AQ-2a (Control Off-Road Equipment Emissions with Tier 4 Engines, Supersedes APM AQ-1) and AQ-2b (Control Fugitive Dust Emissions). The impact of potentially exposing sensitive receptors to substantial pollutant concentrations would be less than significant with mitigation.

Mitigation Measures for Impact AQ-3

AQ-2a Control Off-Road Equipment Emissions with Tier 4 Engines (Supersedes APM AQ-1).

AQ-2b Control Fugitive Dust Emissions.

Impact AQ-4: Generate other emissions (such as those leading to odors) adversely affecting a substantial number of people.

LESS THAN SIGNIFICANT. The potential impacts of this alternative would be similar to the Proposed Project as this alternative would involve similar construction and operations and maintenance activities. Construction and operations and maintenance activities involving diesel-powered equipment and vehicles would not be a source of notable odors because of the mandatory use of ultra-low sulfur diesel fuel. Project-related activities would occur in compliance with local air district rules and regulations prohibiting nuisances and would not create objectionable odors affecting a substantial number of people. This impact would be less than significant and no mitigation is required.

4.10.4. Biological Resources

4.10.4.1. Environmental Setting of the Fossil Falls Realignment Alternative

The Fossil Falls Realignment Alternative would increase the distance between the transmission facilities and BLM conservation lands within the Fossil Falls Area of Critical Environmental Concern, where a large number of cultural and historic sites are located.

Vegetation communities along the Fossil Falls Realignment Alternative consist primarily of upland communities including white bursage scrub, allscale scrub, and creosote bush – white bursage scrub (Arcadis, 2023a). Developed areas are also present. Sensitive natural communities are present including Joshua tree woodland, the *Ambrosia dumosa* Association of white bursage scrub, Acton and Virgin River Brittle Brush – Net-veined Goldeneye Scrub, and the *Larrea tridentata – Ambrosia dumosa – Psorothamnus (arborescens, fremontii)* Association of creosote bush – white bursage scrub.

The following special-status plant species were observed or have potential to occur along the Fossil Falls Realignment route in Segment 1. One state candidate threatened species, western Joshua tree, was observed. No other federally or state-listed plant species were observed during surveys. During surveys, 291 western Joshua trees were observed (Arcadis, 2023a).

OBSERVED
- Western Joshua tree (CC)

POTENTIAL
- Sanicle cymopterus (1B.2, BLM S)
- Threetooth blazingstar (1B.3)

There were no incidental observations of special-status wildlife species along the Fossil Falls Realignment Alternative; however, there are CNDDB records of federally listed desert tortoise within approximately 1 mile west of the alignment and at the south end of South Haiwee Reservoir, and the alignment area has a high probably of occurrence (Arcadis, 2023a). During 2017 and 2018 surveys, one desert tortoise carcass was observed within 1 mile south of the Fossil Falls Realignment Alternative and one burrow was observed approximately 8 miles south of the alignment (Arcadis, 2023a).

There is no designated critical habitat for any listed species within 5 miles.

Within the Fossil Falls Realignment Alternative, the drainages include unnamed ephemeral drainages that flow from the surrounding mountains and alluvial fans to the valley floor into dry lakes (Arcadis, 2023b). Within the Fossil Falls Realignment Alternative there are no jurisdictional wetlands.

Vegetation communities, sensitive natural communities, and special-status species are described in detail in the Project Sensitive Species and Habitat Report (SSHR) Botanical Addendum (Arcadis, 2023a). Potential and locations of special-status species occurrence are described in Appendix 4, Table 4-1. Jurisdictional waters are described in detail in the Project Wetlands and Other Waters Jurisdictional Delineation Report Addendum (Arcadis, 2023b).

4.10.4.2. Environmental Setting of the Fossil Falls Realignment Alternative

Impact BIO-1: 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 Wildlife or U.S. Fish and Wildlife Service.

Construction

Vegetation and Habitat

LESS THAN SIGNIFICANT WITH MITIGATION. Impacts to fish and wildlife habitat would be qualitatively similar to those described in Section 3.5.3.3, Environmental Impacts of the Proposed Project, Impact BIO-1. Like the Proposed Project, construction, post-construction restoration, and operations and maintenance activities for the Fossil Falls Realignment Alternative would result in temporary and permanent disturbance and removal of vegetation and habitat in discrete and disjointed locations. As a result of clearing and grubbing, grading, earth-moving, and vehicle and equipment traffic, potential direct impacts to habitat may include direct crushing, burial, or uprooting of vegetation; root damage; disturbance of seed banks, underground dormant plants, and plant nutrients; burial or scour of vegetation from runoff, sedimentation, and erosion; and disruption of photosynthesis from fugitive dust. Indirect impacts may occur from incidental introductions of invasive weeds that reduce habitat quality and increase fire risk.

Similar to the Proposed Project, which would be built in the existing SCE ROW, the Fossil Falls Realignment Alternative would be constructed adjacent to existing transmission facilities (LADWP) and the associated access routes that are already disturbed.

Application of APMs. The loss and modification of vegetation and habitat as a result of construction could significantly affect special-status species on the project site or in the vicinity. Implementation of the following APMs, which were developed as part of the project, would address vegetation and habitat loss, as described in detail in Section 3.5.3.3.

- APM BIO-RES-1 (Develop and Implement Habitat Restoration Plan)
- APM BIO-RES-2 (Develop Invasive Plant Management Plan)
- APM HAZ-1 (Prepare a Hazardous Materials Management Plan)

These APMs implement seeding and revegetation, soil decompaction, erosion control, and non-native control, which would stabilize soils, re-establish native vegetation, and improve habitat values in the project area. Procedures for containment and cleanup of spills and restrictions on refueling would minimize the exposure of vegetation and habitat to hazardous materials. However, even with application of APMs, impacts would be significant without mitigation.

Permit Conditions. SCE would be required to comply with conditions included in permits from USACE, CDFW, and RWQCB. If the project were approved, SCE would be required to obtain permits to maintain air and water quality and to implement specific requirements to minimize impacts to habitat from fugitive dust, runoff, erosion, and sedimentation in and around work areas.

Mitigation. Even with implementation of APMs and permit conditions, impacts would be significant without mitigation. Certain APMs are superseded with recommended mitigation measures to ensure that impacts to vegetation and habitat would be less than significant. Other mitigation measures are recommended below to further avoid significant impacts and compensate for habitat loss. A detailed description is presented in Impact BIO-1 in Section 3.5.3.3. The full text of these mitigation measures is presented in Section 3.5.5.

- Mitigation Measure BIO-1a (Worker's Environmental Awareness Program) supersedes APM WEAP
- Mitigation Measure BIO-1b (Biological Monitoring) supersedes APM BIO-GEN-1
- Mitigation Measure BIO-1c (Minimization of Vegetation and Habitat Impacts)
- Mitigation Measure BIO-1d (Compensation for Habitat Loss)

These mitigation measures would ensure that disturbance of vegetation and habitat is minimized and restricted to designated and demarcated work areas. Compensation for permanent impacts would offset habitat loss due to project construction activities.

Mitigation measures recommended in other sections of this EIR would also reduce the severity of construction impacts to vegetation and habitat, including:

- Mitigation Measure AQ-2b (Control Fugitive Dust Emissions)
- Mitigation Measure HW-1a (Drainage Erosion and Sedimentation Control Plan)

These mitigation measures would ensure that dust generated from construction, which could accumulate on vegetation and impact growth, is suppressed and minimized. Erosion resulting from vegetation removal and disturbance of soils would be managed through erosion BMPs, which would prevent loss of soils and seed bank and protect surrounding habitat from degradation.

Special-Status Plants

LESS THAN SIGNIFICANT. Impacts to special-status plants would be qualitatively similar to those described for habitat and special-status plants (Impact BIO-1) in Section 3.5.3.3, Environmental Impacts of the Proposed Project. With implementation of the Fossil Falls Realignment Alternative, a portion of the Proposed Project in Segment 1 would be relocated east of the existing SCE ROW and adjacent to the existing LADWP

transmission corridor. Generally, fewer special-status plants have potential to occur in this alternative alignment, as compared to the species listed for Segment 1 in Section 3.5.1.6 (Arcadis, 2019, 2023a).

Application of APMs. Similar to the Proposed Project, construction could result in the loss or disturbance of special-status plants resulting in a significant impact, as described in detail in Section 3.5.3.3. APMs previously outlined for vegetation and habitat, above, would address loss of vegetation and plants. Additionally, the following APMs would address special-status plants specifically, (full text in Section 2.8).

- APM BIO-BOT-1 (Special-Status Herbaceous Plants)
- APM BIO-BOT-2 (Special-status Perennial Plants and Other Species)
- APM BIO-CNDDB-1 (Data Entry)

Surveying and buffers would avoid direct disturbance and removal of individual special-status plants and minimize disturbance of the seed bank and disruption of supporting soils. Habitat restoration, revegetation, salvage (as feasible), and off-site compensation for impacted individuals would offset the loss of special-status plants in the project area. Reporting of special-status plants would support future management and conservation of individuals and populations in the project vicinity. However, even with application of APMs, impacts would be significant without mitigation.

Permit Conditions. SCE would also be required to comply with conditions included in permits from CDFW and USFWS. If the Project were approved, SCE would be required to obtain permits for take or disturbance of listed species.

Mitigation. Even with implementation of APMs and permit conditions and even though fewer special-status plants have the potential to occur in this alternative, impacts would be significant without mitigation. Mitigation measures previously outlined for vegetation and habitat, above, would reduce impacts to special-status plants. Other mitigation measures are recommended below to further avoid significant impacts. A detailed description of this mitigation measure is presented in Impact BIO-1 in Section 3.5.3.3. The full text of this mitigation measure is presented in Section 3.5.5.

- Mitigation Measure BIO-1e (Pre-construction Biological Resources Surveys).

Work areas would be surveyed, and special-status plants would be identified and marked, buffered and avoided, relocated, or salvaged, which would avoid direct impacts.

Mitigation measures recommended in other sections of this EIR would also reduce the severity of construction impacts to special-status plants, including:

- Mitigation Measure AQ-2b (Control Fugitive Dust Emissions)
- Mitigation Measure HW-1a (Drainage Erosion and Sedimentation Control Plan)

These mitigation measures would ensure that dust generated from construction, which could accumulate on plants and impact growth, is suppressed and minimized. Erosion resulting from vegetation removal and disturbance of soils would be managed through erosion BMPs, which would prevent loss of soils and seed bank and protect surrounding habitat and plant species from degradation.

Special-Status Wildlife

LESS THAN SIGNIFICANT. Impacts to special-status wildlife would be qualitatively similar to those described in Impact BIO-1 (Section 3.5.3.3, Environmental Impacts of the Proposed Project). Ground disturbance and clearing would impact vegetation and burrows used by wildlife for shelter, nesting and reproduction, and foraging habitat, including designated critical habitat. Increased equipment and vehicle traffic may result in increased wildlife strikes. Presence of excavation areas, trenches, and pits may trap wildlife, causing injury, mortality, or susceptibility to predation. Increased noise, vibration, dust, and artificial light may disrupt nesting or foraging behaviors, restrict access to shelter and foraging areas, or alter site conditions and reduce the overall quality of habitat available. Increased human presence may increase presence of opportunistic predators. Introduction and spread of non-native species would degrade habitat for wildlife.

Impacts due to bird and bat collision with project facilities and transmission lines are detailed in Impact BIO-6.

Application of APMs. Similar to the Proposed Project, construction could result in loss or modification of native habitat and direct disturbance, mortality, or injury of special-status wildlife on the project site or vicinity. APMs previously outlined for vegetation and habitat, above, and described in detail in Section 3.5.3.3, would improve habitat values, and promote recovery of native vegetation for special-status wildlife. Additionally, the following APMs would address special-status wildlife and their habitat.

- APM BIO-AVI-2 (Burrowing Owl)
- APM BIO-AVI-3 (Yellow-billed Cuckoo)
- APM BIO-HERP-9 (Northern Leopard Frog)
- APM BIO-MAM-1 (Mohave Ground Squirrel)
- APM BIO-MAM-5 (Bighorn Sheep – Nelson's and Desert Bighorn Sheep)
- APM BIO-CNDDB-1 (Data Entry)
- APM WET-1 (Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats)
- APM AES-8 (Night Lighting during Construction of Facilities)
- APM NOI-1 (Noise Control)

Species-specific APMs are expected to reduce, in part, the likelihood and severity of injury and the likelihood of mortality of those special-status wildlife with potential to occur in the project areas, as discussed in detail in Section 3.5.3.3. APMs for night lighting and noise (AES-8 and NOI-1) would minimize disturbance of wildlife and disruption of foraging and breeding during nighttime hours. However, even with application of APMs, impacts would be significant.

Permit Conditions. SCE would also be required to comply with conditions included in ITPs from CDFW and/or USFWS. If the Project were approved, SCE would be required to obtain permits for take or disturbance of listed species.

Mitigation. Even with implementation of APMs and permit conditions, impacts would be significant without mitigation. Mitigation measures previously outlined for vegetation and habitat, above, would reduce impacts to habitat for special-status wildlife. Certain APMs are superseded with recommended mitigation measures to ensure that impacts to special-status wildlife would be less than significant. Other mitigation measures are recommended below to avoid disturbance and loss of additional special-status wildlife species. A detailed description of these mitigation measures is presented in Impact BIO-1 in Section 3.5.3.3. The full text of these mitigation measures is presented in Section 3.5.5.

- Mitigation Measure BIO-1e (Pre-construction Biological Resources Surveys)
- Mitigation Measure BIO-1f (Wildlife impact avoidance and minimization)
- Mitigation Measure BIO-1g (Crotch bumble bee)
- Mitigation Measure BIO-1h (Special-status reptiles)
- Mitigation Measure BIO-1i (Desert Tortoise) supersedes APM HERP-1
- Mitigation Measure BIO-1j (Raven Monitoring, Management, and Control Plan)
- Mitigation Measure BIO-1k (Mohave ground squirrel avoidance and minimization)
- Mitigation Measure BIO-1l (American Badger and Desert Kit Fox)
- Mitigation Measure BIO-1m (Special-status Bats) supersedes APM BIO-MAM-6
- Mitigation Measure BIO-1n (Golden Eagle) supersedes APM BIO-AVI-4

Work areas would be surveyed, and special-status wildlife would be identified, monitored, buffered and avoided, or relocated, which would avoid direct injury or mortality. Management of work site hazards would further prevent injury and mortality of special-status wildlife. Species-specific mitigation measures would minimize and avoid impacts by surveying and buffering those species.

Mitigation measures recommended in other sections of this EIR would also reduce the severity of construction impacts to wildlife and their habitat:

- Mitigation Measure AQ-2b (Control Fugitive Dust Emissions)
- Mitigation Measure HW-1a (Drainage Erosion and Sedimentation Control Plan)

These mitigation measures would ensure that dust generated from construction, which could disturb wildlife, accumulate on vegetation, and impact growth of wildlife habitat, is suppressed and minimized. Erosion resulting from vegetation removal and disturbance of soils would be managed through erosion BMPs, which would prevent loss of soils and protect wildlife habitat from degradation.

Operation and Maintenance

LESS THAN SIGNIFICANT. The impacts from operations and maintenance would be similar to activities that are ongoing to maintain the existing subtransmission lines. For the Fossil Falls Realignment Alternative, these impacts would occur in the alternative ROW and not in the existing Segment 1 ROW. The Fossil Falls Realignment Alternative would be located immediately adjacent to two larger LADWP transmission lines, which undergo similar operations and maintenance impacts themselves. Because the operations and maintenance activities would occur within the areas already disturbed by construction of the alternative itself, no new ground disturbance would be expected. SCE would implement its APMs, if relevant to the specific maintenance activities. Impacts from operations and maintenance would be less than significant.

Impact BIO-2: 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 Wildlife or U.S. Fish and Wildlife Service.

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* Impacts to sensitive vegetation communities would be similar to those described for habitat (Impact BIO-1) and riparian and sensitive communities (Impact BIO-2) in Section 3.5.3.3, and those described in Impact BIO-1 for the Fossil Falls Realignment Alternative. No riparian communities are present along the Fossil Falls Realignment Alternative.

As a result of clearing and grubbing, grading, earth-moving, and vehicle traffic, potential direct impacts to sensitive vegetation communities may include direct crushing, burial, or uprooting of vegetation; root damage; disturbance of seed banks, underground dormant plants, and plant nutrients; burial or scour of vegetation from runoff, sedimentation, and erosion; and disruption of photosynthesis from fugitive dust. Indirect impacts may occur from incidental introductions of invasive weeds that reduce habitat quality and increase fire risk.

Impacts to other sensitive vegetation communities that occur along the Fossil Falls Realignment Alternative (Arcadis, 2023a) would be the same as described for the Proposed Project.

Application of APMs. Similar to the Proposed Project, construction would significantly impact sensitive and/or riparian vegetation in the project area. Implementation of the following APMs, which were developed as part of the project, would address habitat loss, as described in detail in Section 3.5.3.3.

- APM BIO-RES-1 (Develop and Implement Habitat Restoration Plan)
- APM BIO-RES-2 (Develop Invasive Plant Management Plan)
- APM HAZ-1 (Prepare a Hazardous Materials Management Plan)

These APMs implement seeding and revegetation, soil decompaction, erosion control, and non-native control, which would stabilize soils, re-establish native vegetation, and improve habitat values in the project area. Procedures for containment and cleanup of spills and restrictions on refueling would minimize the exposure of vegetation and habitat to hazardous materials. However, even with application of APMs, impacts would be significant without mitigation.

Permit Conditions. SCE would also be required to comply with conditions included in permits from USACE, CDFW, and RWQCB. If the Project were approved, SCE would be required to obtain permits to maintain air and water quality and to implement specific requirements to minimize impacts to habitat from fugitive dust, runoff, erosion, and sedimentation in and around work areas.

Mitigation. Even with implementation of APMs and permit conditions, impacts would be significant without mitigation. Certain APMs are superseded with recommended mitigation measures to ensure that impacts to riparian vegetation and sensitive vegetation communities would be less than significant. Other mitigation measures are recommended below to further avoid significant impacts and compensate for habitat loss. A detailed description of these mitigation measures is presented in Impact BIO-1 in Section 3.5.3.3. The full text of these mitigation measures is presented in Section 3.5.5.

- Mitigation Measure BIO-1a (Worker's Environmental Awareness Program) supersedes APM WEAP
- Mitigation Measure BIO-1b (Biological Monitoring) supersedes APM BIO-GEN-1
- Mitigation Measure BIO-1c (Minimization of Vegetation and Habitat Impacts)
- Mitigation Measure BIO-1d (Compensation for Habitat Loss)

These mitigation measures would ensure that habitat disturbance is minimized and restricted to designated and demarcated work areas and that habitat loss in sensitive communities would be offset.

Mitigation measures recommended in other sections of this EIR would also reduce the severity of construction impacts to riparian vegetation and sensitive vegetation communities, including:

- Mitigation Measure AQ-2b (Control Fugitive Dust Emissions)
- Mitigation Measure HW-1a (Drainage Erosion and Sedimentation Control Plan)

These mitigation measures would ensure that dust generated from construction, which could accumulate on vegetation and impact growth, is suppressed and minimized. Erosion resulting from vegetation removal and disturbance of soils would be managed through erosion BMPs, which would prevent loss of soils and seed bank and protect surrounding habitat from degradation.

Operation and Maintenance. *LESS THAN SIGNIFICANT.* As analyzed under Impact BIO-1, impacts from operations and maintenance would be less than significant.

Impact BIO-3: Substantially affect jurisdictional wetlands, waters of the U.S., or waters of the state.

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* Impacts to jurisdictional waters would be similar to those described for jurisdictional waters in Section 3.5.3.3 (Environmental Impacts of the Proposed Project, Impact BIO-3). Within the Fossil Falls Realignment Alternative there are no jurisdictional wetlands.

As a result of clearing and grubbing, grading, earth-moving, and vehicle traffic, potential direct impacts to wetlands and jurisdictional waters may include rutting, sedimentation, or erosion in and around surface waters; direct crushing, burial, or uprooting of wetland vegetation; and disturbance of seed banks, underground dormant plants, and plant nutrients. Indirect impacts may occur from incidental introductions of invasive weeds that reduce habitat quality; from spillage of hazardous materials used during construction; and from introduction of sediment into waters, which would reduce water quality in the project vicinity and downstream.

Application of APMs. Similar to the Proposed Project, construction would significantly impact jurisdictional wetlands and waters. Implementation of the following APMs, which were developed as part of the project, would address jurisdictional waters, as described in detail in Section 3.5.3.3.

- APM BIO-RES-1 (Develop and Implement Habitat Restoration Plan)
- APM BIO-RES-2 (Develop Invasive Plant Management Plan)
- APM HAZ-1 (Prepare a Hazardous Materials Management Plan)
- APM BIO-WET-1 (Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats)

These APMs implement seeding and revegetation, soil decompaction, erosion control, and non-native control, which would stabilize soils, re-establish native vegetation, and improve habitat values in the project area. Procedures for containment and cleanup of spills and restrictions on refueling would minimize the exposure of vegetation and habitat to hazardous materials.

By implementing BIO-WET-1, jurisdictional waters would be avoided unless otherwise authorized by resource agencies. Unavoidable permanent impacts would be offset, as approved. BMPs would minimize indirect impacts and protect jurisdictional waters from sedimentation or pollution. However, even with application of APMs, impacts would be significant.

Permit Conditions. SCE would also be required to comply with conditions included in permits from USACE, CDFW, and RWQCB. If the Project were approved, SCE would be required to obtain permits to maintain water quality and to implement specific requirements to minimize impacts to wetlands from runoff, erosion, and sedimentation in and around work areas. Permits would define compensation ratios for unavoidable impacts to jurisdictional waters.

Mitigation. Even with implementation of APMs and permit conditions, impacts would be significant without mitigation. Certain APMs are superseded with recommended mitigation measures to ensure that impacts would be less than significant. Other mitigation measures are recommended below to further avoid significant impacts and compensate for loss of jurisdictional waters. The text of these mitigation measures is presented in Section 3.5.5.

- Mitigation Measure BIO-1a (Worker's Environmental Awareness Program) supersedes APM WEAP
- Mitigation Measure BIO-1b (Biological Monitoring) supersedes APM BIO-GEN-1
- Mitigation Measure BIO-1c (Minimization of Vegetation and Habitat Impacts)
- Mitigation Measure BIO-1d (Compensation for Habitat Loss)

These mitigation measures would ensure that habitat disturbance is minimized and restricted to designated and demarcated work areas and that habitat loss in sensitive communities would be offset.

Mitigation measures recommended in other sections of this EIR would also reduce the severity of construction impacts to jurisdictional wetlands and waters, including:

- Mitigation Measure AQ-2b (Control Fugitive Dust Emissions; full text in Section 3.4.3.3, Air Quality)
- Mitigation Measure HW-1a (Drainage Erosion and Sedimentation Control Plan; full text in Section 3.11.3.3, Hydrology and Water Quality)

These mitigation measures would ensure that dust generated from construction, which could settle and accumulate in wetlands and waters, is suppressed and minimized. Erosion resulting from vegetation removal and disturbance of soils would be managed through erosion BMPs, which would prevent loss of soils and sedimentation of jurisdictional waters.

Operation and Maintenance. *LESS THAN SIGNIFICANT.* As analyzed under Impact BIO-1, impacts from operations and maintenance would be less than significant.

Impact BIO-4: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* Impacts to wildlife movement would be qualitatively similar to those described in Section 3.5.3.3 (Environmental Impacts of the Proposed Project, Impact BIO-4).

Construction activities consist of upgrading and replacing existing facilities in dispersed and discrete areas; therefore, terrestrial wildlife connectivity conditions would be similar to existing conditions. Impacts may include temporary and localized disruption of resident or migratory wildlife or wildlife behavior due to increased noise, vibration, light, dust, equipment, human presence, and opportunistic predators. Increased

equipment and vehicle traffic may result in increased wildlife strikes in the vicinity of habitat corridors. Habitat used for cover during movement would be impacted by ground disturbance and clearing and incidental introduction of invasives may decrease the quality of corridor habitat.

Impacts to other wildlife movement areas outside the Fossil Falls Realignment Alternative area would be the same as described for the Proposed Project.

Application of APMs. Impacts to wildlife movement from construction, due to degradation of habitat, disruption of natural movement behaviors, and direct injury or mortality, would be considered significant. Implementation of the following APMs, which were developed as part of the project, would address wildlife movement, as described in detail in Section 3.5.3.3.

- APM BIO-RES-1 (Habitat Restoration and Revegetation Plan)
- APM BIO-RES-2 (Develop Integrated Weed Management Plan [IWMP])
- APM HAZ-1 (Prepare a Hazardous Materials Management Plan)
- APM WET-1 (Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats)
- APM BIO-AVI-2 (Burrowing Owl)
- APM BIO-AVI-3 (Yellow-billed Cuckoo)
- APM BIO-HERP-9 (Northern Leopard Frog)
- APM BIO-MAM-1 (Mohave Ground Squirrel)
- APM BIO-MAM-5 (Bighorn Sheep – Nelson's and Desert Bighorn Sheep)
- APM AES-8 (Night Lighting during Construction of Facilities)
- APM NOI-1 (Implement Best Management Practices for Construction Noise)

These APMs would improve habitat values, promote recovery of native vegetation, and protect habitat from pollution and contamination. Species-specific APMs are expected to reduce, in part, the likelihood and severity of injury and the likelihood of mortality of those special-status wildlife with potential to occur in the project areas, as discussed in detail in Section 3.5.3.3. APMs for night lighting and noise (AES-8 and NOI-1) would minimize disturbance of wildlife and disruption of foraging and breeding during nighttime hours. However, even with application of APMs, impacts would be significant without mitigation.

Permit Conditions. SCE would also be required to comply with conditions included in ITPs from CDFW and USFWS for threatened and endangered species and candidates for listing. If the Project were approved, SCE would be required to obtain permits for take or disturbance of listed species.

Mitigation. Even with implementation of APMs and permit conditions, impacts would be significant without mitigation. Certain APMs are superseded with recommended mitigation measures to ensure that impacts would be less than significant. Other mitigation measures are recommended to avoid disturbance of wildlife near the project area. The full text of these mitigation measures is presented in Section 3.5.5.

- Mitigation Measure BIO-1a (Worker's Environmental Awareness Program) supersedes APM WEAP
- Mitigation Measure BIO-1b (Biological Monitoring) supersedes APM BIO-GEN-1
- Mitigation Measure BIO-1c (Minimization of Vegetation and Habitat Impacts)
- Mitigation Measure BIO-1d (Compensation for Habitat Loss)
- Mitigation Measure BIO-1e (Pre-construction Biological Resources Surveys)
- Mitigation Measure BIO-1f (Wildlife impact avoidance and minimization)
- Mitigation Measure BIO-1g (Crotch bumble bee)
- Mitigation Measure BIO-1h (Special-status reptiles)
- Mitigation Measure BIO-1i (Desert Tortoise) supersedes APM HERP-1
- Mitigation Measure BIO-1j (Raven Monitoring, Management, and Control Plan)
- Mitigation Measure BIO-1k (Mohave ground squirrel avoidance and minimization)
- Mitigation Measure BIO-1l (American Badger and Desert Kit Fox)
- Mitigation Measure BIO-1m (Special-status Bats) supersedes APM BIO-MAM-6
- Mitigation Measure BIO-1n (Golden Eagle) supersedes APM BIO-AVI-4

These mitigation measures would ensure that habitat disturbance is minimized and restricted to designated and demarcated work areas and that habitat loss would be offset. Work areas would be surveyed, and sensitive habitats and special-status wildlife would be identified, monitored, buffered and avoided, or relocated. These measures would effectively avoid significant impediments to wildlife movement in the project area. Management of work site hazards, such as speeding vehicles, holes and trenches, trash, and pets, would further prevent injury, mortality, and disturbance of wildlife moving in and through the project site. Species-specific mitigation measures would minimize and avoid impacts by surveying and buffering those species.

Mitigation measures recommended in other sections of this EIR would also reduce the severity of construction impacts to wildlife and their habitat:

- Mitigation Measure AQ-2b (Control Fugitive Dust Emissions; full text in Section 3.4.3.3, Air Quality)
- Mitigation Measure HW-1a (Drainage Erosion and Sedimentation Control Plan; full text in Section 3.11.3.3, Hydrology and Water Quality)

These mitigation measures would ensure that dust generated from construction, which could disturb wildlife, accumulate on vegetation, and impact growth of wildlife habitat, is suppressed and minimized. Erosion resulting from vegetation removal and disturbance of soils would be managed through erosion BMPs, which would prevent loss of soils and protect wildlife habitat from degradation.

Operation and Maintenance. *LESS THAN SIGNIFICANT.* As analyzed under Impact BIO-1, impacts from operations and maintenance would be less than significant.

Impact BIO-5: Cause take of protected nesting birds, including nestlings or eggs, through direct impacts to the nest or substantial nearby disturbance which could cause nest abandonment.

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* Impacts to nesting birds would be similar to those described in Section 3.5.3.3, (Environmental Impacts of the Proposed Project, Impact BIO-5). Direct impacts to nesting birds could include loss of active nests, suitable shelter, foraging habitat, and food sources due to vegetation clearing and ground disturbance. Incidental spread of non-native weeds would decrease nesting habitat quality. Construction activities could cause disruption of nesting and foraging behavior due to a temporary increase in human presence, traffic, noise, vibration, dust, and opportunistic predators. Impacts to birds due to collision with power lines and electrocution are discussed in Impact BIO-6.

Application of APMs. Implementation of the following APMs, as described in detail in Impact BIO-1, Section 3.5.3.3.

- APM BIO-RES-1 (Habitat Restoration and Revegetation Plan)
- APM BIO-RES-2 (Develop Integrated Weed Management Plan [IWMP])
- APM HAZ-1 (Prepare a Hazardous Materials Management Plan)
- APM BIO-AVI-1 (Nesting Bird Management Plan)
- APM BIO-AVI-2 (Burrowing Owl)
- APM BIO-AVI-3 (Yellow-billed Cuckoo)
- APM AES-8 (Night Lighting during Construction of Facilities)
- APM NOI-1 (Implement Best Management Practices for Construction Noise)

These APMs would improve habitat values, promote recovery of native vegetation, and protect habitat from pollution and contamination. APM BIO-AVI-1 requires a Nesting Bird Management Plan (NBMP) in coordination with CPUC, BLM, CDFW, and USFWS, which would avoid potential for unauthorized take. Pre-construction nest surveys during the breeding season (January 1 through August 31), demarcation of nest buffers, monitoring of nests, and coordination with resource agencies on buffer modifications would avoid destruction and disturbance of nests and direct mortality or injury of birds, nestlings, or eggs. APM BIO-AVI-2 (Burrowing Owl) requires surveys, buffering of active burrows, and a relocation plan, which would minimize and avoid disturbance, injury, and mortality of nesting burrowing owls. APM BIO-AVI-3

(Yellow-billed Cuckoo) requires the avoidance of nesting season or pre-construction nest surveys, buffering of nests, and construction monitoring of occupied habitat, which would protect yellow-billed cuckoos from disturbance, injury, and mortality. APMs for night lighting and noise (AES-8 and NOI-1) would minimize disturbance of nesting birds during construction activities during nighttime hours. However, even with application of APMs, impacts would be significant without mitigation.

Permit Conditions. SCE would also be required to comply with conditions included in ITPs from CDFW and USFWS for threatened and endangered species and candidates for listing. If the Project were approved, SCE would be required to obtain permits for take or disturbance of listed species.

Mitigation. Even with implementation of APMs and permit conditions, impacts would be significant without mitigation. Certain APMs are superseded with recommended mitigation measures to ensure that impacts would be less than significant. Other mitigation measures are recommended to avoid disturbance of nesting birds near the project area. The full text of these mitigation measures is presented in Section 3.5.5.

- Mitigation Measure BIO-1a (Worker's Environmental Awareness Program) supersedes APM WEAP
- Mitigation Measure BIO-1b (Biological Monitoring) supersedes APM BIO-GEN-1
- Mitigation Measure BIO-1c (Minimization of Vegetation and Habitat Impacts)
- Mitigation Measure BIO-1d (Compensation for Habitat Loss)
- Mitigation Measure BIO-1e (Pre-construction Biological Resources Surveys)
- Mitigation Measure BIO-1f (Wildlife impact avoidance and minimization)
- Mitigation Measure BIO-1n (Golden Eagle) supersedes APM BIO-AVI-4

These mitigation measures would ensure that habitat disturbance is minimized and restricted to designated and demarcated work areas and that habitat loss would be offset. Work areas would be surveyed, and sensitive habitats and special-status wildlife would be identified, monitored, buffered and avoided, or relocated. Management of work site hazards, such as speeding vehicles, holes and trenches, trash, and pets, would further prevent injury, mortality, and disturbance of nesting birds. Mitigation Measure BIO-1n (Golden Eagle) recommends golden eagle nest surveys within a 2-mile radius of work areas. Occupied nests would be buffered to avoid disturbance of nesting eagles and abandonment of nests.

Mitigation measures recommended in other sections of this EIR would also reduce the severity of construction impacts to wildlife and their habitat:

- Mitigation Measure AQ-2b (Control Fugitive Dust Emissions; full text in Section 3.4.3.3, Air Quality)
- Mitigation Measure HW-1a (Drainage Erosion and Sedimentation Control Plan; full text in Section 3.11.3.3, Hydrology and Water Quality)

These mitigation measures would ensure that dust generated from construction, which could accumulate on vegetation and impact growth of nesting habitat, is suppressed and minimized. Erosion resulting from vegetation removal and disturbance of soils would be managed through erosion BMPs, which would prevent loss of soils and protect surrounding nesting habitat from degradation.

Operation and Maintenance. *LESS THAN SIGNIFICANT.* As analyzed under Impact BIO-1, impacts from operations and maintenance would be less than significant.

Impact BIO-6: Create a substantial collision and electrocution risk for birds or bats.

Impacts from collision and electrocution would be similar to those described in Section 3.5.3.3 (Environmental Impacts of the Proposed Project, Impact BIO-6). The alternative would require installation of new subtransmission facilities immediately adjacent to the two larger existing LADWP transmission lines. As a result, this alternative would not create a taller obstruction to birds than that already existing.

The impact of transmission line height on collisions is highly dependent on a particular species' flight altitude and factors such as flight behavior, annual flight cycle, and habitats in the vicinity of the line

(Bernardino et al., 2018). Collision mortality estimates in North America have not identified a noticeable effect on long-term population trends; however, it may increase risk for a subset of species with susceptible characteristics. Collision-related mortality is commonly attributed to a bird's morphological characteristics (vision and flight), and behavioral characteristics (migration strategy, feeding and roosting, flocking behaviors, or hunting style) (Bateman et al., 2023) and collision rates generally increase in low light conditions, during inclement weather, such as fog, rain or snow, during strong winds, and during panic flushes when birds are startled by a disturbance or are fleeing from danger (Brown, 1993; Luzenski et al., 2016). Collisions are more probable where the movements of susceptible species are the greatest, such as near wetlands, agricultural areas, valleys that are bisected by power lines, within narrow passes where power lines run perpendicular to flight paths. Several studies have shown that most observed collisions were with narrower, less visible overhead shield wires and lines that cross daily movement corridors (between roosting, nesting, and feeding areas) (Luzenski et al., 2016). However, results suggested that well-marked lines or lines with increased diameter, even in movement corridors, can lessen collision risk.

Collision and electrocution hazard conditions for the Fossil Falls Realignment Alternative are expected to be similar to existing conditions, because of the presence of the existing taller LADWP lines. No new transmission facilities would be introduced into locations where none existed previously.

Mitigation

Collision risks to birds can be minimized after construction by marking the lines, which can be better detected by birds and avoided (Bateman et al., 2023; Bernardino et al., 2018). Birds may generally be expected to detect and avoid marked transmission lines (Bernardino et al., 2018; Luzenski et al., 2016); however; species with susceptible characteristics, as previously described, may still be at increased risk of collision.

This alternative would require installation of new transmission facilities immediately adjacent to the two larger existing LADWP transmission lines. While the alternative would not create taller obstructions to birds than already exists, unmarked lines would present a hazard to birds flying in the area, resulting in a significant collision impact.

The PEA (SCE, 2020a) states that all subtransmission facilities for the Project would be designed to be avian-safe, following the intent of Suggested Practices for Avian Protection on Power Lines: the State of the Art in 2006 (APLIC, 2006). All subtransmission facilities would be evaluated for potential collision risk and, where determined to be high risk, lines would be marked with collision reduction devices in accordance with Reducing Avian Collisions with Power Lines: The State of the Art in 2012 (APLIC, 2012; SCE, 2020a). However, these specifications are not incorporated into an APM.

As described for the Proposed Project, the following mitigation measure is recommended to ensure that risk of collision and electrocution are minimized to the greatest extent feasible. Full text of the measure is provided in Section 3.5.5.

- Mitigation Measure BIO-6a (Bird and Bat Collision)

By implementing recommended APLIC guidelines and design features that discourage perching by raptors, use markers to visually warn birds, and maintain enough distance between lines to prevent electrocution of large birds, injury and mortality from collision and electrocution would be minimized.

Impact BIO-7: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

LESS THAN SIGNIFICANT. As described in Section 3.5.3.3, Environmental Impacts of the Proposed Project, goals and policies for biological resources in the Kern County and Inyo County General Plans are not applicable, pursuant to General Order 131-E. There are no conflicts with local ordinances, therefore no significant impacts would occur under Impact BIO-7. No mitigation measures are required.

Impact BIO-8: Conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.

LESS THAN SIGNIFICANT. The only difference in impacts to biological resources between the Fossil Falls Realignment Alternative and the Proposed Project would occur over 14 miles in Segment 1, within 2 miles of the project area. The DRECP identified detailed Conservation Management Actions (CMAs) that must be implemented on BLM-administered lands to avoid and minimize impacts to environmental resources, and that are incorporated into the CDCA and Bishop RMP (see Section 3.5.3.1). As part of SCE's Plan of Development (POD) submitted to the BLM, SCE included the APMs listed in Table 3.5-1 to comply with DRECP CMAs.

The Fossil Falls Realignment Alternative would not conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan, therefore no significant impacts would occur. No mitigation measures are required.

4.10.5. Cultural Resources

4.10.5.1. Environmental Setting of the Fossil Falls Realignment Alternative

The Fossil Falls Realignment Alternative would be approximately 15.8 miles long; see Figure 4-4 (Fossil Falls Realignment Alternative).

The Direct API for this alternative consists of 371 acres. There are 43 archaeological resources considered to be eligible for the California Register of Historic Resources (CRHR) in the Direct API (36 precontact resources and 7 multi-component sites with historic resources) with potential for adverse effects. Prehistoric sites include lithic and ground stone scatters, bedrock milling features, and petroglyphs. Historic sites include habitation remains, mining features, and refuse scatters. Cultural resources within the Fossil Falls Realignment Alternative are listed and described in EIR Appendix 5A, Table Ap.5-12.

Five eligible built environment resources or portions of built resources (in the case of long linear resources) are within the CEQA Areas of Direct and Indirect Impacts. Previously recorded and newly identified built environment resources include transmission lines, a substation and intertie, a retaining wall, an aqueduct, and paved or unpaved roads and highways. Some linear resources have segments in multiple alternatives; however, each segment is counted separately here.

4.10.5.2. Environmental Impacts of the Fossil Falls Realignment Alternative

Impact CUL-1: Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines §15064.5.

Direct Impacts

SIGNIFICANT AND UNAVOIDABLE. There are 43 archaeological resources that have the potential to be significantly impacted by the ground disturbing construction activities of this alternative, as identified in detail in Table Ap.5-12 in Appendix 5A. As described for the Proposed Project in Section 3.6.3.5, these non-renewable resources provide an important window into California's past, including Native American traditional lifeways. As described in detail in Section 3.6.3.1 (Impact Analysis Approach), most resources are eligible to the CRHR under Criterion 4 for research potential and any direct impacts to these resources could jeopardize that research potential.

In addition to the potential impacts to the known historical resources, there is the potential for construction activities to result in exposure of unknown buried archaeological resources that could be considered historical resources under CEQA. If construction resulted in damage to unknown buried historical resources that are eligible for the CRHR, as described in more detail below, a significant impact would occur.

Direct construction-related impacts to known and unknown buried archaeological resources would be reduced in severity with implementation of Mitigation Measures CUL-1a through CUL-1l.

- Mitigation Measure CUL-1a (Retain a Cultural Resources Specialist)
- Mitigation Measure CUL-1b (Develop Data Recovery Plans for Known Historical Archaeological Resources)
- Mitigation Measure CUL-1c (Implement Cultural Resources Environmental Awareness Training)
- Mitigation Measure CUL-1d (Prepare and implement a Cultural Resources Management Plan; *supersedes APM CUL-1*)
- Mitigation Measure CUL-1e (Cultural Resources Monitoring)
- Mitigation Measure CUL-1f (Tribal Monitoring)
- Mitigation Measure CUL-1g (Remove Structures by Helicopter in Culturally Sensitive Areas)
- Mitigation Measure CUL-1h (Leave All Foundations in Place for Structures Removed in Culturally Sensitive Areas)
- Mitigation Measure CUL-1i (Avoid Disturbance Within Environmentally Sensitive Areas)
- Mitigation Measure CUL-1j (Mitigate Loss from Dismantling of Historic-Era "Tower Line" Transmission Lines (P-36-010316)
- Mitigation Measure CUL-1k (Avoid and/or Mitigate Loss from Direct Impacts to Historic-Era Archaeological Resources Contributing to the Rand Mining District (P-15-007069)
- Mitigation Measure CUL-1l (Avoid Damage to Manzanar Airfield)

As summarized above, Mitigation Measures CUL-1a through CUL-1l are designed to avoid or reduce impacts to known and unknown buried historical resources to the extent feasible. These measures include avoiding resources where feasible by establishing protected Environmentally Sensitive Areas (ESAs) during construction and maintenance, providing archaeological and Native American monitoring, evaluation of discoveries, and data recovery excavations of historical resources that cannot be avoided. Implementation of these measures would substantially reduce the potential for unmitigated loss of information value. However, despite the inclusion of these feasible mitigation measures, the alternative would occur in an area of exceptionally high archaeological sensitivity and continuing cultural importance to descendant communities. Ground disturbance in this highly sensitive area with a high density of known resources has a high likelihood of impacting known archaeological resources and encountering significant buried deposits whose scientific and cultural values extend beyond the recoverable data alone. While data recovery, as defined in Mitigation Measure CUL-1b, can mitigate for the loss of information potential, it cannot fully offset the loss of the physical integrity, spatial relationships, and cultural associations that contribute to the significance of these resources.

Therefore, although the recommended mitigation measures would reduce adverse effects to the extent feasible, the construction of the alternative would result in the permanent loss of portions of resources within a culturally rich and sensitive archaeological area. As such, the impact on historical resources would remain significant and unavoidable, even after implementation of all mitigation.

Indirect Impacts

LESS THAN SIGNIFICANT. The visual changes resulting from the replacement of Proposed Project structures with other steel structures would be similar, in nature and scale, to the existing subtransmission structures. Therefore, the Proposed Project would not cause a substantial indirect adverse change in the significance of a historical resource, and no mitigation is necessary.

Impact CUL-2: Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines §15064.5.

Construction

LESS THAN SIGNIFICANT WITH MITIGATION. No unique archaeological resources have been identified in the Direct APE. As such, the alternative would not impact known unique archaeological resources. However,

previously unknown buried unique archaeological resources could be discovered and damaged, or destroyed, during ground disturbing work. This would cause a substantial adverse change in the significance of the archaeological resources, should they be determined to be unique archaeological resources under CEQA. Damage or destruction of a buried archaeological resource would constitute a significant impact absent mitigation. Implementation of Mitigation Measures CUL-1a through CUL-1i would evaluate and protect unanticipated discoveries of unique archaeological resources, thereby ensuring that this impact would be less than significant.

Operations and Maintenance

LESS THAN SIGNIFICANT WITH MITIGATION. As described in Section 3.6.3.4*,* maintenance activities could include ground disturbing activities, such as access road grading and pole replacements, that could occur in previously disturbed or undisturbed locations. As such, maintenance activities could cause a significant impact to unknown buried unique archaeological resources in the Direct APE.

To ensure that potential maintenance impacts are less than significant, Mitigation Measures CUL-1c requires annual WEAP training for personnel responsible for maintenance activities during which the crew would be made aware of procedures to follow in the event of unanticipated discoveries and CUL-1d requires maintenance personnel have access to a non-confidential GIS database showing ESAs which will be avoided by maintenance activities. Therefore, with implementation of these two mitigation measures, impacts to unknown unique archaeological resources from maintenance activities would be less than significant.

Impact CUL-3: Disturb human remains, including those interred outside of formal cemeteries.

Construction

LESS THAN SIGNIFICANT WITH MITIGATION. In addition to the known resources that contain human remains, there is the possibility that previously unknown burials or human remains could be identified during ground disturbing construction activities. The discovery of human remains would constitute a significant impact.

The Proposed Project includes APM CUL-4 (Properly Treat Human Remains; see Table 3.6-10), which defines the process to be implemented should human remains be discovered. APM CUL-4 is considered adequate to ensure that impacts to unknown buried human remains would not be significant. However, additional mitigation is required to supplement APM CUL-4, because human remains discovered during construction may be a component of one or more larger archaeological sites. As discussed for Impact CUL-1, the APMs do not provide adequate protection for this more extensive potential impact. Therefore, Mitigation Measures CUL-1a through CUL-1h are also required to ensure that impacts associated with the discovery of human remains are less than significant. These measures would require worker environmental awareness training, and a CRMP that outlines avoidance feasible measures and procedures to follow in the event of the discovery of unanticipated human remains. Additionally, these mitigation measures would require archaeological and tribal monitoring and reduce the level of ground disturbance in culturally sensitive areas. With the implementation of Mitigation Measures CUL-1a through CUL-1h, impacts to known and unknown human remains would be less than significant.

Operations and Maintenance

LESS THAN SIGNIFICANT WITH MITIGATION. As described in Section 3.6.3.4*,* maintenance activities could include ground disturbing activities, such as access road grading and pole replacements, that could occur in previously disturbed or undisturbed locations. As such, maintenance activities could cause a significant impact to unknown buried resources including human remains in the Direct APE.

SCE has committed to implementing APM CUL-4, which defines processes that would address human remains discoveries. APM CUL-4 provides adequate process and protection for potential impacts to

unknown buried human remains. However, additional mitigation will be needed to supplement APM CUL-4 to ensure proper treatment of known human remains, which may be components of larger archaeological sites. Mitigation Measure CUL-1c requires annual WEAP training for personnel responsible for maintenance activities during which the crew would be made aware of procedures to follow in the event of unanticipated discoveries to human remains. Mitigation Measure CUL-1d requires maintenance personnel have access to a non-confidential GIS database showing ESAs which will be avoided by maintenance activities. Therefore, impacts to known and unknown human remains from maintenance activities will be less than significant.

4.10.6. Tribal Cultural Resources

Section 3.7.1 defines the ethnographic setting of the region, as well as Tribal Cultural Resources identified in the record search and the ethnographic literature review completed for this EIR. Table 3.7-2 (Summary of Tribal Cultural Resources Data Collection) and Table 3.7-3 (Overview of AB 52 Consultation Process Activities) summarize the Native American consultation that was completed by the CPUC; additional detail is presented in Appendix 5B. This information is all relevant to this alternative as well as the Proposed Project segment that it would replace.

4.10.6.1. Environmental Impacts of the Fossil Falls Realignment Alternative

Impact TCR-1: Cause a substantial adverse change in the significance of a tribal cultural resource that is listed or eligible for listing in the California Register of Historical Resources.

SIGNIFICANT AND UNAVOIDABLE. As described in Section 3.7.1.6 (Summary of AB 52 Native American Consultation), one new Tribal Cultural Resource (TCR) was identified during formal consultation: the Owens Valley Landscape (OVL). The OVL is situated within both the Direct and Indirect APE and is at risk of experiencing significant direct and indirect impacts from the Proposed Project. As a non-renewable TCR, the OVL offers critical insight into California's historic landscape and the traditional lifeways of Native American communities. It holds ongoing cultural, spiritual, and educational value, as local Native American groups continue to engage with the OVL to sustain and revitalize their cultural practices.

Direct construction-related impacts to known and unknown buried TCRs would be reduced in severity with implementation of Mitigation Measures TCR-1a and TCR-1b (see full text in Section 3.7), and CUL-1a through CUL-1i (see full text Section 3.6). The mitigation measures are as follows:

- Mitigation Measure TCR-1a (Conceal Exposed Tribal Cultural Resources After Construction)
- Mitigation Measure TCR-1b (Provide Funding for Tribal Resource Mapping and Monitoring Training Programs)
- Mitigation Measure CUL-1a (Retain a Cultural Resources Specialist)
- Mitigation Measure CUL-1b (Develop Data Recovery Plans for Known Historical Archaeological Resources)
- Mitigation Measure CUL-1c (Implement Cultural Resources Environmental Awareness Training)
- Mitigation Measure CUL-1d (Prepare and implement a Cultural Resources Management Plan; *supersedes APM CUL-1*)
- Mitigation Measure CUL-1e (Cultural Resources Monitoring)
- Mitigation Measure CUL-1f (Tribal Monitoring)
- Mitigation Measure CUL-1g (Remove Structures by Helicopter in Culturally Sensitive Areas)
- Mitigation Measure CUL-1h (Leave All Foundations in Place for Structures Removed in Culturally Sensitive Areas)
- Mitigation Measure CUL-1i (Avoid Disturbance Within Environmentally Sensitive Areas)

Tribal consultation has not indicated a preference for either the Fossil Falls Realignment Alternative or the Proposed Project segment.

Impact TCR-2: Cause a substantial adverse change in the significance of a resource determined to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, considering the significance of the resource to a California Native American tribe.

NO IMPACT. Based on the information provided during formal AB 52 consultation, record searches, and ethnographic research, the Proposed Project would not impact a TCR as determined by the CPUC. No documented resources that the CPUC has determined, backed by substantial evidence, to be a TCR have been identified within the Direct or Indirect APE. Therefore, the Proposed Project would not impact any TCRs as determined by the CPUC through construction or maintenance and no mitigation is required.

4.10.7. Energy

4.10.7.1. Environmental Setting of the Fossil Falls Realignment Alternative

The Fossil Falls Realignment Alternative would be approximately 15.8 miles long; see Figure 4-4 (Fossil Falls Realignment Alternative). The alternative would also require construction activities in the existing I-C Project corridor because the existing structures would be removed after the alternative line is energized. Construction activities and ground disturbance would be limited to the area around each existing structure, use of access roads, and use of material yards.

4.10.7.2. Environmental Impacts of the Fossil Falls Realignment Alternative

Impact EN-1: Result in wasteful, inefficient, or unnecessary consumption of energy.

LESS THAN SIGNIFICANT. The potential impacts associated with the construction and operations and maintenance of this alternative would be similar to the Proposed Project as this alternative would involve similar construction and operations and maintenance activities. As in the Proposed Project, the Fossil Falls Realignment Alternative would not result in wasteful, inefficient, or unnecessary consumption of energy, and as such, impacts would be less than significant).

Impact EN-2: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

LESS THAN SIGNIFICANT. The potential impacts associated with the construction and operations and maintenance of this alternative would be similar to the Proposed Project as this alternative would involve similar construction and operations and maintenance activities. As in the Proposed Project, the Fossil Falls Realignment Alternative would not obstruct state or local plans for renewable energy or energy efficiency, and as such, impacts would be less than significant.

4.10.8. Geology, Soils, and Paleontology

4.10.8.1. Environmental Setting of the Fossil Falls Realignment Alternative

The setting for the Fossil Falls Realignment Alternative is generally the same as of the corresponding section of the Proposed Project. The Fossil Falls Realignment Alternative is underlain by the same soil series and associations as the as the Proposed Project and would have the same soil characteristics and potential for erosion and expansion. Both the Fossil Falls Realignment Alternative and the Proposed Project cross relatively flat to gently sloping topography and would not be subject to slope failures.

Similar to the corresponding portion of the Proposed Project, the Fossil Falls Realignment Alternative is crossed by one Alquist-Priolo zoned active fault, the Little Lake fault zone, and its associated Alquist-Priolo Zone. Both routes would be subject to strong seismically induced ground shaking from ground accelerations ranging from 0.45 to 0.75 g.

The Fossil Falls realignment avoids a small area of shallow groundwater and potentially liquifiable alluvium that is located along the Proposed Project route where it is adjacent to Little Lake.

The Fossil Falls Realignment Alternative and the corresponding Proposed Project section are located within the same groundwater basin (Rose Valley) and would be subject to the same subsidence potential. However, no data is available for either route segment.

According to a paleontological resources report prepared for the realignment segments (Bargas Environmental Consulting, 2024), the Fossil Falls Realignment Alternative is underlain by the same or similar geologic units with the same paleontological sensitivity as the corresponding Proposed Project section. Geologic units that would be affected by the Fossil Falls Realignment Alternative consist of young Quaternary sedimentary units, specifically basalt and andesite flows (Qpv^{b}) and Quaternary alluvium (Qal), which are respectively classified as low and low to moderate potential for significant paleontological resources (**PFYC 2** and **PFYC 2 to 3**, respectively). In addition, the Fossil Falls Realignment Alternative is also underlain by Mesozoic granitic metamorphic rocks (gr) with very low paleontological potential (**PFYC 1**). The corresponding Proposed Project section also includes geologic units with these same levels of paleontological potential.

4.10.8.2. Environmental Impacts of the Fossil Falls Realignment Alternative

Impact GSP-1: Expose people or structures to adverse effects, including the risk of loss, injury, or death, due to rupture of a known earthquake fault, seismic ground shaking, or liquefaction.

Fault Rupture

LESS THAN SIGNIFICANT WITH MITIGATION. The Fossil Falls Realignment and the corresponding section of the Proposed Project have the same potential for surface fault rupture; both are crossed by the Alquist-Priolo zoned Little Lake fault zone and its associated Alquist-Priolo zone. Therefore, the potential for adverse impacts related to surface fault rupture is the same for the Fossil Falls Realignment and the corresponding section of the Proposed Project. Implementation of geotechnical recommendations and industry standards, and compliance with applicable regulations, including CPUC GO 95, would reduce potential impacts related to damage to Project structures due to fault rupture along the Fossil Falls Realignment. However, implementation of Mitigation Measure GSP-1a (Fault Evaluation Study) is needed to identify the locations of faults in detail relative to project structures, prevent placement of structures on faults traces, and relocate the structures as necessary and feasible to further reduce impacts related to fault rupture to less than significant (Class II) along this alternative.

During Project operation, operations and maintenance activities would include routine inspections and emergency repair within substations and of Project structures, including inspection and repair of damaged structures after an earthquake event.

Mitigation Measure for Impact GSP-1

GSP-1a **Fault Evaluation Study.** (See full text in Section 3.9.3.3).

Strong Ground Shaking

LESS THAN SIGNIFICANT. The Fossil Falls Realignment would be subject to the same level of strong ground shaking and the same seismically induced shaking hazards as the Proposed Project in the event of a large earthquake. The new structures for the Fossil Falls Realignment Alternative would be designed as required by CPUC General Order 95. SCE would conduct geotechnical investigations to provide an evaluation of geotechnical conditions prior to final project design and construction. Above-ground poles would be designed to meet wind loading criteria, which generally exceed seismic loading criteria, thus reducing and/or eliminating the risk of these structures failing due to ground shaking. Design of new structures to the above referenced recommendations, guidelines and standards, and applicable regulations would ensure that any adverse impacts from ground shaking would be less than significant.

Project operation would generally be the same as for the Proposed Project, including operations and maintenance activities that would include inspection and emergency repair of damage to structures and project components after an earthquake event. No mitigation is required.

Seismically Induced Slope Failure or Liquefaction

LESS THAN SIGNIFICANT. The Fossil Falls Realignment Alternative and the corresponding portion of the Proposed Project are both located in areas of relatively flat to gently sloping terrain and with no landslides mapped along or near either route, and both are unlikely to experience seismically induced slope failures. The Fossil Falls Realignment is underlain by the same potentially liquefiable sediments as the Proposed Project with generally similar groundwater levels of greater than 100 feet bgs.

However, the Fossil Falls Realignment does not cross the potentially liquefiable area of alluvium with shallow groundwater located near Little Lake that the Proposed Project crosses. Thus, adverse effects due to liquefaction along the Fossil Falls Realignment are expected to be minimally less than the corresponding section of the Proposed Project.

SCE will conduct geotechnical investigations prior to final design and engineering to evaluate the depth to the water table, liquefaction potential, physical properties of subsurface soils, and slope stability and may include recommendations for the final engineering design, as needed. Adverse impacts related to seismically induced slope failures and liquefaction along the Fossil Falls Realignment would be less than significant due to the implementation of geotechnical design recommendations and standard engineering practices, and compliance applicable regulations, including CPUC General Order 95.

Project operation would generally be the same as for the Proposed Project, including operations and maintenance activities that would include and inspection and emergency repair of damage to structures and project components after an earthquake event, resulting in a less than significant impact. No mitigation is required.

Impact GSP-2: Result in substantial soil erosion or the loss of topsoil.

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* Ground disturbing construction activities would be the same for the Fossil Falls Realignment Alterative as for the Proposed Project, including removal of poles, construction of poles and towers, and grading for spur roads and rehabilitation of access roads as needed. The same soil associations are located along the Fossil Falls Realignment as for the corresponding section of the Proposed Project and would have the same erosion potentials from wind and water, ranging from low to high potential for wind erosion and low to moderate potential for erosion from water (see tables in Appendix 6). However, if the alternative is selected, construction would occur along both the existing ROW (to remove structures) and the alternative ROW (to install structures), so there would be more total ground disturbance and greater potential for soil erosion to occur.

The Fossil Falls Realignment Alterative would be required to obtain NPDES General Permit for Storm Water Discharges Associated with Construction Activity, prepare and submit a project specific Storm Water Pollution Prevention Plan (SWPPP), and implement SCE APMs (APM BIO-HERP-2, APM BIO-MAM-1, and BIO-RES-1), all of which would reduce soil erosion impacts. However, implementation of Mitigation Measure HW-1a (Implement an Erosion Control Plan and demonstrate compliance with water quality permits) is required to ensure that soil erosion impacts are less than significant.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* Repairs done to existing facilities during maintenance could result in ground disturbance and soil erosion. Spur road maintenance could require limited grading. Compliance with Project SWPPP requirements and implementation of Mitigation Measure HW-1a (Implement a Drainage, Erosion, and Sedimentation Control Plan) is required to reduce the severity of adverse impacts related to erosion from operations and maintenance activities along the Fossil Falls Realignment Alternative to less than significant.

Mitigation Measure for Impact GSP-2

HW-1a **Implement a Drainage, Erosion, and Sedimentation Control Plan (DESCP).** (See full text in Section 3.12)

Impact GSP-3: Be located on a geologic unit or soil that is unstable, or would become unstable as a result of the Project, and result in on- or off-site landslide, subsidence, liquefaction or collapse.

Construction. *LESS THAN SIGNIFICANT.* As discussed above under Impact GSP-3, the Fossil Falls Realignment Alternative is located on similar relatively flat to gently sloping terrain that is unlikely to experience slope failures as the corresponding portion of the Proposed Project. The Fossil Falls Realignment Alternative and the Proposed Project segment also cross the same valley and groundwater basin (Rose Valley) and would be subject to the same potential to adverse effects due to subsidence.

No subsidence data exist for the Rose Valley basin; however, if regional subsidence were to occur it is unlikely to cause damage to project structures. The new structures would be designed in accordance with geotechnical recommendations, standard engineering practices, and in compliance with applicable regulations, including CPUC General Orders 95. Thus, the impact related to subsidence would be less than significant.

Operations and Maintenance*. LESS THAN SIGNIFICANT.* Project operation would generally be the same as for the Proposed Project, including operations and maintenance activities that would include inspection and emergency repair of damage to structures and project components, resulting in a less than significant impact.

Impact GSP-4: Be located on expansive soil creating substantial risks to life or property.

Construction. *LESS THAN SIGNIFICANT.* The same soil units underlie both the Fossil Falls Realignment Alternative and the Proposed Project; the soils are primarily granular (sandy) and non-expansive; however, some soils with moderate expansion potential underlie both alignments. Adverse impacts related to expansive soils would be less than significant with project design completed in accordance with geotechnical recommendations and standard engineering practices, and compliance with relevant regulations, including CPUC GO 95. The impact would be less than significant.

Operations and Maintenance*. LESS THAN SIGNIFICANT.* Project operation would generally be the same as for the Proposed Project, including operations and maintenance activities that would include inspection and emergency repair of damage to structures and project components, resulting in a less than significant impact.

Impact GSP-5: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

According to a paleontological resources report prepared for the realignment segments (Bargas Environmental Consulting, 2024), the Fossil Falls Realignment Alternative is underlain by the same or similar geologic units with the same paleontological sensitivity as the corresponding Proposed Project section. Geologic units that would be affected by the Fossil Falls Realignment Alternative consist of young Quaternary sedimentary units, specifically basalt and andesite flows (Qpv^{b}) and Quaternary alluvium (Qal), which are respectively classified as low and low to moderate potential for significant paleontological resources (**PFYC 2** and **PFYC 2 to 3**, respectively). In addition, the Fossil Falls Realignment Alternative is also underlain by Mesozoic granitic metamorphic rocks (gr) with very low paleontological potential (**PFYC 1**). The corresponding Proposed Project section also includes geologic units with these same levels of paleontological potential.

Construction. *LESS THAN SIGNIFICANT.* The Fossil Falls Realignment Alternative is located on the same or similar geologic units with the same paleontological resource potential (**PFYC 1**, **PFYC 2**, and **PFYC 2 to 3**) as the corresponding Proposed Project section. This alternative would also include the same types and amounts of ground disturbing activities as the Proposed Project. Therefore, both routes would have the same potential to damage or destroy paleontological resources in units designated **PFYC 2 to 3**, which are units with the potential for significant paleontological resources. Similar to the Proposed Project, with incorporation of APMs PAL-1 to PAL-4 (see Table 3.9-1) , including implementation of the PRMMP that was prepared for the Proposed Project (Material Culture Consulting, 2022) consistent with APM PAL-1, as well as compliance with applicable regulations, potential damage to or destruction of scientifically important paleontological resources would be avoided, as any resources that are encountered during construction would be recovered and curated for future study. The process for monitoring, recovery, curation, and reporting of all resources must be approved by BLM and CPUC, thereby ensuring that scientifically important paleontological resources will be permanently protected. Therefore, similar to the Proposed Project, impacts from this alternative on paleontological resources would be less than significant.

However, the Unanticipated Discover Protocol defined in APM PAL-1 does not specifically cite that carbonate-rich paleosols are indicators of the presence of microvertebrates. These paleosols require screening of a test sample of sediment following the guidelines SVP (2010). Mitigation Measure GSP-5a (Unanticipated Paleontological Resource Protocol) supersedes the protocol component of APM PAL-1 in order to avoid the destruction or disturbance of significant paleontological resources, specifically microvertebrate fossils. Implementation of the defined testing would ensure that potentially valuable resources are identified. Therefore, impacts would be less than significant with implementation of this mitigation measure.

Mitigation Measure for Impact GSP-5

GSP-5a **Unanticipated Discovery Paleontological Resource Protocol Update (Supersedes the protocol defined in APM PAL-1)** (see full text in Section 3.9.3.3)

Operations and Maintenance. *LESS THAN SIGNIFICANT.* Only limited ground disturbance in existing disturbed areas would be required during Project operation, primarily related to maintenance of access and spur roads and repairs to structures. Ground disturbance in these previously disturbed areas is unlikely to encounter paleontological resources; therefore, similar to the Proposed Project, impacts from this alternative would be less than significant.

4.10.9. Greenhouse Gas Emissions

4.10.9.1. Environmental Setting of the Fossil Falls Realignment Alternative

Similar to the Proposed Project, this alternative would also require construction activities in the existing I-C Project corridor because the existing structures would be removed after the alternative line is energized. Construction activities and ground disturbance would be limited to the area around each existing structure, use of access roads, and use of material yards.

4.10.9.2. Environmental Impacts of the Fossil Falls Realignment Alternative

Impact GHG-1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

LESS THAN SIGNIFICANT. The type and intensity of construction activity would be substantially the same as in the Proposed Project. Due to the comparable type and intensity of activity, the annual and daily rates of emissions would be nearly the same as in the Proposed Project. This alternative is not expected to generate GHG emissions that would have a significant impact on the environment; impacts would be less than significant, and no mitigation is required.

Impact GHG-2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing greenhouse gas emissions.

LESS THAN SIGNIFICANT. The potential impacts associated with the construction and operations and maintenance of this alternative would be similar to the Proposed Project as this alternative would involve similar construction and operations and maintenance activities. These would not conflict with any applicable GHG reduction plan, policy, or regulation, and as such, impacts would be less than significant, and no mitigation is required.

4.10.10. Hazards and Hazardous Materials

4.10.10.1. Environmental Setting of the Fossil Falls Realignment Alternative

The environmental setting for the Fossil Falls Alignment Alternative is very similar to the Proposed Project's Segment 1 as discussed in Section 3.11.1, in Inyo County. The Fossil Falls Alignment Alternative would be at a greater distance from US 395 and would be located adjacent to the existing larger LADWP transmission corridor (occupied by two larger transmission lines).

The Fossil Falls Alignment Alternative would also require construction activities in the existing I-C Project corridor because the existing structures would be removed after the alternative line is energized. Construction activities and ground disturbance would be limited to the area around each existing structure, the use of material yards, and the use of access roads.

4.10.10.2. Environmental Impacts of the Fossil Falls Realignment Alternative

Impact HH-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

LESS THAN SIGNIFICANT. The potential impacts associated with the construction and operation of Fossil Falls Alignment Alternative would be the same as those of the Proposed Project segment that this alternative would replace. The alternative would involve similar construction and operational activities and would require the same type of transport, use, and disposal of hazardous materials. The same applicant proposed measure (APM HAZ-1, Prepare a Hazardous Materials Management Plan) would be implemented for this alternative as for the Proposed Project. The implementation of APM HAZ-1 would ensure that impacts to the public or the environment through the transport, use, or disposal of hazardous materials are less than significant impacts for this alternative.

Impact HH-2: Create a significant risk to human health or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials.

LESS THAN SIGNIFICANT. The potential impacts associated with the construction and operation of this alternative would be the same as the Proposed Project. The alternative would involve similar construction and operational activities and would represent similar potential hazards to the public or environment with respect to reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Implementation of APM HAZ-1 (Prepare a Hazardous Materials Management Plan) for the alternative would ensure that impacts are less than significant impacts with respect to reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Impact HH-3: Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.

LESS THAN SIGNIFICANT. The potential impacts associated with the construction of Fossil Falls Alignment Alternative would be similar to the Proposed Project. While this alternative would not pass through or run

adjacent to any previously identified hazardous material sites, the alternative would involve construction in proximity to areas that may contain hazardous constituents. Thus, implementation of APM HAZ-2, Soil Management Plan, would ensure the appropriate identification, sampling, management, and disposal of potentially contaminated soils if encountered during construction activities. With implementation of APM HAZ-2, impacts related to construction of the Fossil Falls Alignment Alternative would be less than significant.

Impact HH-4: Create a hazard to the public or the environment through mobilization of contaminants or hazards, including mining-related contaminated soils, pesticides, herbicides, and Valley Fever spores.

LESS THAN SIGNIFICANT WITH MITIGATION. As described in Section 3.3, Agriculture and Forestry, Inyo County permitted uses along this alternative include lands zoned as OS-40, and include farm and ranch operations such as livestock, orchards, vineyards, field and truck crops, nurseries, greenhouses, vegetables, flower gardening and other agricultural-related fields. Therefore, grading of access and spur roads and excavation of transmission structure foundations may encounter soil contaminated with pesticides and herbicides in the area of this proposed alternative alignment, which would be a significant impact. Mitigation Measure HH-4a (Identify Soil Contamination) is recommended to ensure that impacts are less than significant.

It is also possible that Valley Fever spores could be mobilized during construction, which would be a significant impact, so dust control is important. Mitigation Measure AQ-2b (Control Fugitive Dust Emissions) is recommended to reduce this impact to less than significant levels.

Mitigation Measures for Impact HH-4

HH-4a Identify Soil Contamination (Supplements APM HAZ-2)

AQ-2b Control Fugitive Dust Emissions

Impact HH-6: Create a hazard to the public or workers due to discovery of military munitions and unexploded ordnance.

LESS THAN SIGNIFICANT WITH MITIGATION. While there are no active or former military installations or FUDS in the areas that would be impacted by construction activities for this alternative, it is possible that historic military activity left unexploded ordnance within the construction areas. As shown in Figure 4-4 (Fossil Falls Realignment Alternative), approximately 6 miles of this alternative are near, but outside of the western boundary of the China Lake NAWS. The grading of access and spur roads and excavation of transmission structure foundations could encounter these military munitions and unexploded ordnance, which would be a significant impact. In order to ensure that impacts are not significant, Mitigation Measure H-6a (UXO Identification, Training, and Reporting Plan) is recommended.

Mitigation Measures for Impact HH-6

HH-6a Unexploded Ordnance (UXO) Identification, Training, and Reporting Plan

Impact HH-7: Expose workers or the public to excessive shock hazards.

LESS THAN SIGNIFICANT WITH MITIGATION. The potential impacts associated with the construction and operation of this alternative would the same as the Proposed Project, i.e., a significant impact. Grounding measures would be required to be incorporated into the design and construction of the facility through Mitigation Measure HH-8a (Implement grounding measures to avoid shocks) to provide a conductive path to ground thereby avoiding a buildup of electrical potential that could discharge as an electrical shock. With implementation of this mitigation measure, this alternative would result in less than significant impacts related to induced currents.

Mitigation Measures for Impact HH-8

HH-8a Implement grounding measures to avoid shocks

4.10.11. Hydrology and Water Quality

4.10.11.1. Environmental Setting of the Fossil Falls Realignment Alternative

The Fossil Falls Realignment Alternative shares a similar environmental setting as the Proposed Project's Segment 1 as discussed in Section 3.12.1. Due to its close proximity, this alternative would be located within the same groundwater basin region (Owens Valley Groundwater Basin) with similar surface water conditions as the Proposed Project.

This alternative would also require construction activities in the existing I-C Project corridor because the existing structures would be removed after the alternative line is energized. Construction activities and ground disturbance would be limited to the area around each existing structure, the use of material yards, and the use of access roads.

4.10.11.2. Environmental Impacts of the Fossil Falls Realignment Alternative

Impact HW-1: Violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* The impacts associated with the construction of this alternative would be similar to those resulting from the Proposed Project because this alternative would involve similar construction activities and would affect the same water resources. While the APMs and SWPPP requirements would reduce effects, they are not sufficiently detailed or prescriptive to ensure that impacts would be less than significant. Therefore, Mitigation Measure HW-1a (Drainage, Erosion, and Sedimentation Control Plan) is required to ensure development and implementation of a detailed DESCP. The implementation of this measure would result in less than significant impacts for construction.

Mitigation Measures for Impact HW-1

HW-1a Drainage, Erosion, and Sedimentation Control Plan (DESCP) (see Section 3.12.3.3 for full text)

Operations and Maintenance. *LESS THAN SIGNIFICANT.* The impacts from operations and maintenance would be similar to activities that are ongoing to maintain the existing subtransmission lines. For the Fossil Falls Realignment Alternative, these impacts would occur in the alternative ROW and not in the existing Segment 1 ROW. The Fossil Falls Realignment Alternative would be located immediately adjacent to two larger LADWP transmission lines, which currently undergo similar maintenance activities. Because the operations and maintenance activities would occur within the areas already disturbed by construction of the alternative itself, no new ground disturbance would be expected during maintenance. SCE would implement the APMs that apply to maintenance activities. Impacts from operations and maintenance would be less than significant.

Impact HW-2: Substantially decrease groundwater supplies or interfere with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

Construction. *LESS THAN SIGNIFICANT.* The potential impacts associated with the construction of the Fossil Falls Realignment Alternative would be the same as for the Proposed Project This alternative would traverse the same groundwater basin (Owens Valley Groundwater Basin) as the Proposed Project and would be expected to use the same sources of water for construction dust control. As a result, this alternative would result in similar effects as the Proposed Project and would maintain the sustainable management of the Owens Valley Groundwater Basin.

No APMs would be required (same as for the Proposed Project). The implementation of this alternative would result in less than significant impacts and no mitigation is required.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* No increase in water use is expected. The impacts from operations and maintenance activities would be less than significant; see discussion under Impact HW-1.

Impact HW-3: 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, increase surface runoff, exceed stormwater drainage capacity, or redirect flood flows.

Erosion and Siltation

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* The potential impacts associated with the construction of the Fossil Falls Realignment Alternative would be the same as for the Proposed Project. This alternative would involve similar construction activities. However, if the alternative is selected, construction would occur along both the existing ROW (to remove structures) and the alternative ROW (to install structures), so there would be more total ground disturbance and greater potential for erosion and siltation to occur.

Even with implementation of the four APMs and the SWPPP, construction of the alternative may still result in significant impacts to water quality depending on the extent and scale of earth disturbance from construction grading and excavation work. Mitigation Measure HW-1a (Drainage, Erosion, and Sedimentation Control Plan) would require further detailed review and delineation of the construction process by a professional engineer or Qualified SWPPP Developer and require additional protective measures that are not defined in the APMs and exceed SWPPP requirements. This measure is recommended to ensure that potential impacts to water quality standards or degradation of surface water quality due to erosion impacts or disturbance of drainage patterns are less than significant. With implementation of this measure, construction impacts would be less than significant.

Mitigation Measure

HW-1a Drainage, Erosion, and Sedimentation Control Plan (full text in Section 3.12.3.3)

Operations and Maintenance. *LESS THAN SIGNIFICANT.* The impacts from operations and maintenance activities on drainage and erosion would be small, and would be less than significant; see discussion under Impact HW-1.

Surface Runoff

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* The potential impacts associated with the construction of the Fossil Falls Alignment Alternative would be the same as for the Proposed Project. This alternative would involve similar construction activities. APM WET-1 (Avoidance of jurisdictional waters, wetlands and riparian areas) would be implemented but would not be sufficient to ensure that the required control for potential localized flooding impacts activities for this alternative are less than significant. Therefore, Mitigation Measure HW-1a (Drainage, Erosion, and Sedimentation Control Plan) is recommended to ensure that potential flooding impacts during construction are less than significant.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* The impacts of operations and maintenance activities on surface runoff would be minimal, and would be less than significant; see discussion under Impact HW-1.

Stormwater Drainage

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* The potential impacts associated with the construction of this alternative would be the same as for the Proposed Project. Mitigation Measure HW-1a (Drainage, Erosion, and Sedimentation Control Plan) is recommended in addition to APM BIO-RES-1 (Habitat

Restoration and Revegetation Plan) and APM HAZ-1 (Prepare a Hazardous Materials and Waste Management Plan) to ensure that these alternatives would not substantially alter the existing drainage patterns or a create a substantial increase in surface runoff. Impacts would be less than significant with mitigation.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* The impacts from operations and maintenance activities would be minimal, and the impact would be less than significant; see discussion under Impact HW-1.

Flood Flows

Construction. *LESS THAN SIGNIFICANT.* The Fossil Falls Alignment Alternative would involve similar construction activities and create potential impacts similar to the Proposed Project. This alternative would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or increase surface runoff that would impede or redirect flood flows, and thus impacts would be less than significant and no mitigation is required.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* The impacts from operations and maintenance activities on flood flows would be less than significant given the existing transmission access roads and infrastructure; see discussion under Impact HW-1.

Impact HW-4: Risk release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones.

Construction. *LESS THAN SIGNIFICANT.* There is no risk of tsunami or seiche in the area of this alternative. In the event of a flood inundation event during construction, the project work areas have the potential to release pollutants such as sediments from areas where the earth has been disturbed and hazardous materials commonly associated with construction activities and construction equipment and vehicle use, such as petroleum products, cleaning fluids, etc. However, this impact would be minimized with SCE's implementation of the SWPPP BMPs, APM WET-1 (Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats), APM HAZ-1 (Hazardous Materials Management Plan), and compliance with the Clean Water Act and California regulations. As a result, this impact would be less than significant, and no mitigation is required.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* The impacts from operations and maintenance activities would be less than significant; see discussion under Impact HW-1. Potential pollutants would not be stored in the project area during maintenance activities, so the potential for a flood to cause pollutant release is minimal.

Impact HW-5: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Construction. *LESS THAN SIGNIFICANT.* Similar to the Proposed Project, this alternative is located within the South Lahontan Basin Area of the Lahontan Regional Water Quality Control Plan (Basin Plan). This alternative would involve the same types of construction activities and would be subjected to the same water quality control permitting (NPDES permit) and associated SWPPP requirements, which would help achieve the water quality objectives in the Basin Plan as the Proposed Project. As discussed under Impact HW-2, like the Proposed Project, this alternative would traverse the same areas managed by the same sustainable groundwater management plan (Owens Valley Basin Groundwater Sustainability Plan) and would not conflict with the groundwater sustainability programs in these plans. In summary, this alternative would not conflict with the applicable water quality and groundwater sustainability programs in these plans. This impact would be less than significant and no mitigation is required.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* See discussion of Operations and Maintenance under Impact HW-1. This alternative would require minimal water supply during operations and maintenance, so there would be negligible reduction in recharge.

4.10.12. Land Use and Planning

4.10.12.1. Environmental Setting of the Fossil Falls Realignment Alternative

The Fossil Falls Realignment Alternative would be approximately 15.8 miles long; see Figure 4-4 (Fossil Falls Realignment Alternative).

The Fossil Falls Realignment Alternative is located within Inyo County on land managed by federal and regional agencies subjected to various land use and management decisions, including lands managed by the BLM Ridgecrest Field Office. The entire Fossil Falls Realignment Alternative is within the Section 368 Energy Corridor. The Fossil Falls Realignment Alternative traverses approximately 4.40 miles of the Mohave Ground Squirrel ACEC and approximately 2.40 miles of the Fossil Falls ACEC. Additionally, the Fossil Falls Realignment Alternative is approximately 0.55 miles east of the Sierra Canyons ACEC and approximately 0.44 miles east of the East Sierra SRMA. The Mohave Ground Squirrel ACEC, the Fossil Falls ACEC, the Sierra Canyons ACEC and the East Sierra SRMA are under the jurisdiction of the BLM's Ridgecrest Field Office planning area and the CDCA Plan, as amended by the DRECP LUPA. The DRECP LUPA establishes CMAs to conserve, protect, and restore these landscapes. Lastly, approximately 6.18 miles of the Fossil Falls Realignment Alternative would traverse lands designated by BLM as Development Focus Areas, which allow the activities associated with solar, wind, and geothermal development, operation, and decommissioning to occur under the CDCA Plan, as amended by the DRECP LUPA.

The Fossil Falls Realignment Alternative traverses portions of undeveloped lands designated by Inyo County as SFL (State and Federal Land) and zoned as OS-40 that permit single-family dwelling, farm and ranches operations, animal hospitals or kennels, wildlife refuges, hunting and fishing preserves, and wilderness areas and wilderness uses (Inyo County, 2001).

4.10.12.2. Environmental Impacts of the Fossil Falls Realignment Alternative

Impact LU-1: 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. No impacts related to land use would result from the Fossil Falls Realignment Alternative. The Fossil Falls Realignment Alternative would not physically divide an existing community because it would be within an existing LADWP transmission corridor adjacent to existing transmission lines.

The portion of the Fossil Falls Realignment Alternative on federal lands traverses the Mohave Ground Squirrel ACEC, the Fossil Falls ACEC, the Sierra Canyons ACEC and the East Sierra SRMA, which are all managed by the BLM Ridgecrest Field Office and the CDCA Plan, as amended by the DRECP LUPA. The Fossil Falls Realignment Alternative is also located within a 368 Energy Corridor and the alternative would be consistent with the uses for that designation. The same ACECs and SRMAs that are within the Proposed Project area are also located within the Fossil Falls Realignment Alternative area. The same BLM land use policies under the CDCA Plan that apply to the Proposed Project would equally apply to the Fossil Falls Realignment Alternative. The Fossil Falls Realignment Alternative would comply with all federal conditions and measures and would therefore not conflict with any federal land use plans, policies, or regulations. Similar to the Proposed Project, the Fossil Falls Realignment Alternative is located on undeveloped lands zoned as OS-40 under the Inyo County General Plan and the Inyo County Zoning Ordinance. As with the Proposed Project, the Fossil Falls Realignment Alternative would be consistent with the LADWP use of the transmission corridor and would not conflict with any OVLMP policies. The Fossil Falls Realignment Alternative would not cause a significant environmental impact due to a conflict with plans, policies or regulations adopted by the Inyo County General Plan for the purpose of avoiding or mitigating an environmental effect not analyzed elsewhere in this EIR. There would be no impact.

4.10.13. Mineral Resources

4.10.13.1. Environmental Setting of the Fossil Falls Realignment Alternative

There are no State-classified MRZs present within the Fossil Falls Realignment Alternative. There are approximately 5 non-metallic locatable mineral resources within 1 mile of the Fossil Falls Realignment Alternative and approximately two aggregate sites located within 1 mile of the Fossil Falls Realignment Alternative. The two aggregate sites are the #288 New Coso Pit, which is approximately 0.73 mile west of the Fossil Falls Realignment Alternative and the #177 Coso Pit, which is approximately 0.48 mile west of the Fossil Falls Realignment Alternative (DOC, 2018). The Red Hill Quarry an active mineral resource recovery site within the Proposed Project alignment. The Red Hill Quarry is approximately 1.4 miles west of the Fossil Falls Realignment Alternative.

4.10.13.2. Environmental Impacts of the Fossil Falls Realignment Alternative

Impact MR-1: Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.

NO IMPACT. The alternative would not affect availability of any known mineral resources of value to the region and the state.

Impact MR-2: 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.

LESS THAN SIGNIFICANT WITH MITIGATION. Structure work areas and access roads for removal of the existing subtransmission structures would be within potentially active areas of Red Hill Quarry. Removal of the existing subtransmission structures could result in temporary impacts on existing mining operations due to potential conflicts with hauling of materials during construction over a mining access road at the facility but would not result in the loss of availability of any mineral resources. Construction conflicts with material hauling for the on-going mining operations at the facilities could result in temporary but significant impacts on their mineral recovery function during equipment travel on access roads. Mitigation Measure MR-2a (Coordinate with mining facility management) requires pre-construction coordination with mining operators to reduce the potential for project interference with mining operations to a less-than-significant level. Impacts would be less than significant with implementation of Mitigation Measure MR-2a (Coordinate with mining facility management).

No impacts related to mineral resources were identified for the Fossil Falls Realignment Alternative area. The Fossil Falls Realignment Alternative is not located within a known mineral resource area and would not affect any known mineral resource areas. Aside from the area of existing subtransmission structure removal, the Fossil Falls Realignment Alternative is not located within any active mining area and would not affect access to any existing mining areas, or access to locally-important mineral resource recovery sites. The Fossil Falls Realignment Alternative would avoid the Proposed Project impacts from installing a new subtransmission line in proximity to Red Hill Quarry operations because the alternative is not located within the Red Hill Quarry mining area.

4.10.14. Noise

4.10.14.1. Environmental Setting of the Fossil Falls Realignment Alternative

The land use around the Fossil Falls Realignment Alternative is largely the same as the portion of Segment 1 that the alternative would be replacing. The Fossil Falls Realignment Alternative would be located in undeveloped open space areas and would not pass through any developed residential areas. Ambient noise levels in the Fossil Falls Realignment Alternative area would be similar to ambient noise levels for

undeveloped areas in Segment 1 (between 35 and 45 dBA Ldn) and noise levels would increase in proximity to US 395 due to traffic noise.

There are no sensitive receptors within 1,000 feet of the Fossil Falls Realignment Alternative, and there are no airports within 2 miles. The Fossil Falls Realignment Alternative would be further from US 395 than the Proposed Project alignment and would therefore experience less traffic noise than the Proposed Project area.

No airports are located in proximity to the Fossil Falls Realignment Alternative, and no airport land use plan is located within the alternative area.

4.10.14.2. Environmental Impacts of the Fossil Falls Realignment Alternative

Impact N-1 Expose persons to or generate a substantial temporary or permanent increase in noise levels in excess of established standards.

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* The impacts associated with Impact N-1 resulting from this alternative would be similar to those discussed under Impact N-1 in Section 3.15.3.3 for the Proposed Project. Construction noise associated with the Fossil Falls Realignment Alternative would temporarily increase ambient noise levels in the vicinity of the alternative construction area, including the area of existing subtransmission structure removal, and the magnitude of the increase would vary depending on the activity. Noise levels produced for the Fossil Falls Realignment Alternative would be comparable to noise levels produced from construction of the Proposed Project as the same equipment and vehicles would be used to construct the alternative alignment.

There are no sensitive receptors within 1,000 feet of the realignment segment of the Fossil Falls Realignment Alternative. Noise levels along the rest of the alignment would be the same as the proposed Project, and as such project construction noise for the Fossil Falls Realignment Alternative would not exceed the standards in the local general plan.

Mitigation Measures N-1a (Implement Helicopter Noise Control Strategy) would be required for this alternative, as it would for the segment of the Proposed Project that this alternative would replace. Impacts would be less than significant with mitigation.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* The impacts from operations and maintenance would be similar to activities that are ongoing to maintain the existing subtransmission lines. For the Fossil Falls Realignment Alternative, these impacts would occur in the alternative ROW and not in the existing Segment 1 ROW. Because the operations and maintenance activities would occur within the areas already disturbed by construction of the alternative itself, minimal new ground disturbance would be expected during maintenance. SCE would implement the APMs that apply to maintenance activities. Impacts from operations and maintenance would be less than significant.

Impact N-2: Generate or expose persons to excessive groundborne vibration.

Construction. *LESS THAN SIGNIFICANT.* Construction of the Fossil Falls Realignment Alternative would require use of the same construction equipment and vehicles as the Proposed Project and would therefore generate the same vibration levels as the Proposed Project. Vibration from construction equipment and activities would be perceptible at distances closer than 50 feet from construction activities but would not exceed the annoyance threshold (0.10 PPV) unless activities occur at distances closer than 22 feet. There are no sensitive receptors within 1,000 feet of the realignment segment of the Fossil Falls Realignment Alternative, and vibration would not be perceptible at a distance of over 1,000 feet from the construction area. Thus, the impact would be less than significant. No mitigation is required.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* The impacts from operations and maintenance activities would be less than significant; see discussion under Impact N-1.

4.10.15. Population and Housing

4.10.15.1. Environmental Setting of the Fossil Falls Realignment Alternative

The environmental setting presented in Section 3.16.1 also applies to the Fossil Falls Realignment Alternative.

4.10.15.2. Environmental Impacts of the Fossil Falls Realignment Alternative

Impact PH-1: Induce substantial population growth in an area, either directly or indirectly.

Construction. *NO IMPACT.* The Fossil Falls Realignment Alternative would be in or immediately adjacent to an existing transmission ROW, designated for use by existing transmission lines and compatible uses such as parks or parking lots. This alternative would displace no housing or buildings. No need for new replacement housing would result from implementation of this alternative. There would be no impact.

The alternative would not displace a substantial number of people from housing, and there would be no impact related to displacement.

Operations and Maintenance. *NO IMPACT* There would be no change in SCE's permanent staffing levels required to maintain the upgraded transmission lines or upgraded substations for the Fossil Falls Realignment Alternative. Therefore, no population growth would occur as a result of operation of this alternative segment, and no impact would occur.

Impact PH-2: Displace a substantial number of existing people or housing.

Construction. *NO IMPACT.* The Fossil Falls Realignment Alternative would be in or immediately adjacent to an existing transmission ROW, designated for use by existing transmission lines and compatible uses such as parks or parking lots. This alternative would displace no housing or buildings. No need for new replacement housing would result from implementation of this alternative. There would be no impact.

The alternative would not displace a substantial number of people from housing, and there would be no impact related to displacement.

Operations and Maintenance. *NO IMPACT.* There would be no change in SCE's permanent staffing levels required to maintain the upgraded transmission lines or upgraded substations for either the Fossil Falls Realignment Alternative. Therefore, no population growth would occur as a result of operation of this alternative segment, and no impact would occur.

4.10.16. Public Services

4.10.16.1. Environmental Setting of the Fossil Falls Realignment Alternative

The environmental setting presented in Section 3.17.1 also applies to the Fossil Falls Realignment Alternative.

4.10.16.2. Environmental Impacts of the Fossil Falls Realignment Alternative

Impact PS-1: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives.

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* The Fossil Falls Realignment Alternative would include construction of the replacement subtransmission facilities and would require activities similar to the Proposed Project. The impacts to public services would also be substantially similar to those described in

Section 3.17.3.3 for the Proposed Project. Similar to the Proposed Project, the Fossil Falls Realignment Alternative would not substantially affect the provision of existing fire or emergency services or require the provision of service beyond existing capacities. The Fossil Falls Realignment Alternative construction activities would not require the expansion of existing fire stations or fire protection services with implementation of the Fire Management Plan.

However, construction activities may interfere with emergency response times, related to traffic issues, which may result in a significant impact. SCE has proposed APM TRA-1, Traffic Control Measures, to ensure that traffic controls are used. However, with implementation of APM TRA-1, there would be a significant impact, because the APM does not require that the traffic control measures be reviewed and approved by the affected jurisdictions and does not adequately reduce impacts to emergency service vehicle access. Proposed Mitigation Measure T-1b (Prepare traffic control plans) requires traffic control plan(s) be prepared by SCE, to supplement SCE commitments provided in APM TRA-1 to further reduce potential impacts to emergency service vehicle operations through any roadway affected by the project.

With implementation of Mitigation Measure T-1b (Prepare traffic control plans), the impact would be less than significant.

Impacts related to law enforcement, ambulatory services, schools, and medical facilities to support the construction of the Fossil Falls Realignment Alternative would not require changes to these existing services and would be identical to those described in Section 3.17.3.3, therefore resulting in a less than significant impacts.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* The impacts from operations and maintenance would be similar to activities that are ongoing to maintain the existing subtransmission lines. For the Fossil Falls Realignment Alternative, these impacts would occur in the alternative ROW and not in the existing Segment 1 ROW. The Manzanar Realignment Alternative would be located immediately adjacent to two larger LADWP transmission lines, which currently undergo similar maintenance activities. Because the operations and maintenance activities would occur within the areas already disturbed by construction of the alternative itself, no new ground disturbance would be expected during maintenance. SCE would implement the APMs that apply to maintenance activities. Impacts from operations and maintenance would be less than significant.

4.10.17. Recreation

4.10.17.1. Environmental Setting of the Fossil Falls Realignment Alternative

The I-C ROW that would be replaced by the Fossil Falls Realignment Alternative closely follows the east side of US 395 and is highly visible from the highway in an area of dramatic scenic beauty and BLM conservation lands, including the Fossil Falls Campground, within the Fossil Falls ACEC. This area also holds a large number of cultural and historic sites.

The primary intent of this segment would be to remove the I-C ROW from the forefront of the scenic views and move it out of the areas with most sensitive cultural sites. The line would be consolidated with the existing LADWP transmission line corridor, located nearly a mile east of the Fossil Falls Campground (where the existing ROW is between the campground and US 395).

Between Little Lake and the north end of this realignment segment, the alternative is from 0.5 to nearly 2 miles east of the I-C ROW and immediately adjacent to two much larger existing transmission lines.

4.10.17.2. Environmental Impacts of the Fossil Falls Realignment Alternative

Impact REC-1: Disrupt recreational activities, temporarily blocking or reducing access and visitation to recreational areas.

Construction

LESS THAN SIGNIFICANT WITH MITIGATION. The Fossil Falls Realignment Alternative is located between 1 and 2.5 miles away from several recreational resources, listed in Table 3.18-1.

Fossil Falls ACEC. The alternative would cross 2.4 miles of the Fossil Falls ACEC, so the ACEC would experience direct effects from construction. However, these effects would be limited to the areas in and around the ROW for this alternative and would be immediately adjacent to the existing larger LADWP transmission lines.

Access to the Fossil Falls ACEC and Campground would not be impacted during construction of the Fossil Falls Realignment Alternative because the alternative ROW would not cross Cinder Road in the segment between US 395 and the entrance to the recreational resource. The western portion of Cinder Road would be used by SCE for construction access to the ROW.

Within the southern portion of the Fossil Falls ACEC is a viewing point called the Little Lake Overlook. The alternative alignment would be located directly east of the overlook, but the scenic view of Little Lake is to the west. The short distance would still likely result in indirect disturbance effects, such as noise, dust, and traffic, during construction from the perspective of people exploring the highly sensitive and important Fossil Falls recreation area. Within the Fossil Falls ACEC, even with implementation of APM REC-1, which requires closures to be coordinated with recreation facility owners, and APM N-1, which implements best management practices for noise , construction activities would still result in noise, dust, and traffic that would significantly disrupt recreational activities, and therefore, implementation of Mitigation Measure REC-1a (Coordinate construction schedule and activities and identify alternative recreation areas) would be required to ensure that impacts are less than significant. This measure would require that SCE coordinate with BLM to schedule construction activities to avoid heavy recreational use periods, identify alternative recreation sites that may be used by the public, and request that BLM provide online notification of construction activities that will occur at the site. Other disturbances such as dust and noise would be controlled by implementation of Mitigation Measure N-1a (Helicopter Noise Control Strategy; superseding APM NOI-1) and Mitigation Measure AQ-2b (Control Fugitive Dust Emissions). Implementation of these three mitigation measures would reduce the impact to less than significant.

Removal of Existing Structures. Construction of the Fossil Falls Realignment Alternative would require removal of the existing structures along the 12.4-mile stretch that would be replaced by the alternative, including direct effects within the Fossil Falls ACEC (see Figure 3.18-2c). As required for Segment 1 of the Proposed Project (see Section 3.18.3.4), Mitigation Measures AQ-2b (Control Fugitive Dust Emissions) and N-1a (Helicopter Noise Control Strategy) shall be implemented here in order to ensure that construction disturbance impacts for these activities are less than significant.

Operations and Maintenance

LESS THAN SIGNIFICANT. Operations and maintenance of the alternative would not result in a disruption of recreational activities, due to the location of the alternative near two large existing transmission lines, with existing access roads and ongoing maintenance activities in the LADWP ROW. Impacts would be adverse but less than significant.

Impact REC-2: Damage recreational trails or facilities.

Construction, Operations and Maintenance. *NO IMPACT.* The Fossil Falls Realignment Alternative would not cross any recreational trails or facilities that could be damaged. Although the Fossil Falls Realignment

Alternative intersects with the Fossil Falls ACEC, there are no trails or facilities that are a part of the recreational resource that intersect with the ROW. Therefore, there would be no impact.

4.10.18. Transportation

4.10.18.1. Environmental Setting of the Fossil Falls Realignment Alternative

The Fossil Falls Realignment Alternative would be approximately 15.8 miles long; see Figure 4-4 (Fossil Falls Realignment Alternative). All roadway crossings occurring for this alternative would be the same as the Proposed Project (described in Section 3.19.1.2).

4.10.18.2. Environmental Impacts of the Fossil Falls Realignment Alternative

Impact T-1: Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* The impacts associated with Impact T-1 resulting from this alternative would be similar to those discussed under Impact T-1 in Section 3.19.3.3 for Proposed Project trips affecting traffic flow and congestion and temporary lane closures. The types of construction activities required to build the Fossil Falls Realignment Alternative would be the same as those for the Proposed Project, but due to their increased distance from US 395, they would occur in slightly more remote areas. The alternative is very near the Proposed Project and the same construction equipment and personnel would construct this segment, using the same primary access roads.

The alternative would also require construction activities in the existing I-C Project corridor because the existing structures would be removed after the alternative line is energized. Construction activities and ground disturbance would be limited to the area around each existing structure, the use of material yards, and the use of access roads.

Due to the location of this alternative in a somewhat remote area where there are no transit, paved roadway, bicycle, or pedestrian facilities, there would be no impacts expected with respect to these services or facilities associated with this alternative segment.

Mitigation Measures T-1a (Prepare Construction Transportation Plan), T-1b (Prepare Traffic Control Plan(s)), and T-1c (Obtain permits or approvals for crossing or working in railroad rights-of-way) would be required for this alternative, as they would for the Proposed Project. Impacts would be less than significant with mitigation.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* Once constructed, operations and maintenance of this alternative would have negligible impacts on the roadway system so would not conflict with existing plans or ordinances. The inspection and maintenance activities would generate a very small volume of vehicular traffic. If a major repair were required at a particular location, the temporary transportation impacts would be short-term, limited in scale, and require trip volumes significantly less than the construction impacts addressed above. Impacts would be less than significant.

Impact T-2: Conflict or be inconsistent with State CEQA Guidelines Section 15064.3(b) regarding vehicle miles traveled.

Construction. *NO IMPACT.* The discussion in Impact T-2 for the Proposed Project (Section 3.19.3.3) would also apply to the Fossil Falls Realignment Alternative with respect to trips, vehicle movement, and vehicle miles traveled. The two segments are located very near each other and would use the same roads and equipment. The northern and southern endpoints are at the Proposed Project locations. There would be no mitigation required for this alternative and impacts would be less than significant. Impacts would be less than significant; no mitigation would be required.

Operations and Maintenance. *NO IMPACT.* Upon completion of construction, all truck trips and worker commute trips related to construction activities would cease. The inspection and maintenance activities would generate a very small volume of vehicular traffic. If a major repair were required at a particular location, the temporary transportation impacts would be short-term, limited in scale, and require trip volumes significantly less than the construction impacts addressed above. Therefore, operation of the Project would have no impacts related to substantial or sustained increase in VMT.

Impact T-3: Result in inadequate emergency access.

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* The Fossil Falls Realignment Alternative would have similar potential impacts with respect to temporary lane or road closures and emergency vehicles as discussed for Impact T-3 in Section 3.19.3.3 for the Proposed Project. While the alternative route is more distant from US 395 than the Proposed Project, the alternative would also require removal of the existing structures, which would occur in the busier area nearly adjacent to US 395. Thus, this alternative would be required to implement Mitigation Measure M-1b (Prepare Traffic Control Plan). Impacts would be less than significant with mitigation.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* The impacts from operations and maintenance would be less than significant because work would occur along unpaved roads along an existing transmission ROW, so would not impact emergency access. See the discussion of operations and maintenance under Impact T-1.

Impact T-4: Require the temporary closure of lanes or roadways resulting in a substantial increase in roadway hazards.

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* The Fossil Falls Realignment Alternative would have similar potential impacts with respect to temporary lane or road closures and roadway hazards as discussed for Impact T-4 in Section 3.19.3.3 for the Proposed Project. Thus, this alternative would be required to implement Mitigation Measure T-1b (Prepare Traffic Control Plan(s)). Impacts would be less than significant with mitigation.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* The impacts from operations and maintenance would be less than significant; no temporary lane or road closures for public roads are anticipated. See the discussion of operations and maintenance under Impact T-1.

Impact T-5: Increase roadway hazards through damage to road surfaces.

Construction. *LESS THAN SIGNIFICANT WITH MITIGATION.* The Fossil Falls Realignment Alternative would have similar potential impacts with respect to roadway hazards and damage as discussed for Impact T-5 in Section 3.19.3.3 for the Proposed Project. Thus, this alternative would be required to implement Mitigation Measure T-5a (Repair roadways damaged by construction activities). Impacts would be less than significant with mitigation.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* Operations and maintenance activities would be focused along the transmission line access road; roadway damage is not anticipated. The impact would be less than significant; see discussion under Impact T-1.

Impact T-6: Conflict with FAA recommendations to reduce hazards to navigable airspace, an airport land use plan, or restrictions to airspace related to active military flights.

Construction*. NO IMPACT.* There is no impact applicable to construction because this impact applies to operating structures with conductors in place.

Operations and Maintenance. *NO IMPACT.* The Fossil Falls Realignment Alternative would not result in a significant impact with respect to navigable airspace or airport land use plans. This alternative is not near Department of Defense facilities, but it is within areas of low flying military aircraft, due to its proximity to China Lake NAWS. However, this alternative would be constructed immediately adjacent to existing larger and taller transmission infrastructure owned by LADWP. As a result, the height of the alternative structures would create no impact with respect to airspace conflicts.

Impact T-7: Create a hazard to the public or the environment through the transport of heavy loads with helicopters.

Construction. *LESS THAN SIGNIFICANT.* The Fossil Falls Realignment Alternative would have similar potential impacts with respect to helicopter use as discussed for Impact T-7 in Section 3.19.3.3 for the Proposed Project. Thus, Mitigation Measure T-7a (Prepare and implement a final helicopter use plan) would be required. Impacts would be less than significant with mitigation.

Operations and Maintenance. *LESS THAN SIGNIFICANT.* Operations and maintenance activities are unlikely to require helicopter use. The infrequent use of a helicopter for would not result in a significant impact given the location of this alternative; see discussion under Impact T-1.

4.10.19. Utilities and Service Systems

4.10.19.1. Environmental Setting of the Fossil Falls Realignment Alternative

The Fossil Falls Realignment Alternative would be approximately 15.8 miles long; see Figure 4-4 (Fossil Falls Realignment Alternative).

4.10.19.2. Environmental Setting of the Fossil Falls Realignment Alternative

Impact US-1: Require new water supply entitlements or place demands on local water providers.

Construction. *LESS THAN SIGNIFICANT.* The Fossil Falls Realignment Alternative would include construction of the replacement subtransmission facilities and would require activities similar to the Proposed Project, would require the same amount of water as the Proposed Project, and would not require new water supply entitlements or place demands on local water providers. As discussed in Section 3.12.3.3, the Proposed Project's conservative estimate of approximately 1,000 acre-feet of annual water consumption represents approximately 12 percent of the 2025 estimated MWA supply surplus, and approximately 0.17 percent of the water used for agriculture and exports in Inyo County, and thus would not require a new water supply or place demands on local water providers. Therefore, because of the volume of ground-water that would be used during construction when compared to the existing groundwater supplies in the area, the impact would be less than significant.

Operations and Maintenance. *NO IMPACT.* Operations and maintenance activities along the Manzanar Realignment Alternative would require similar water usage as that occurring along the existing SCE line, so no net increase in water usage would be required. There would be no impact on water supplies.

Impact US-2: Generate solid waste in excess of state or local regulations or in excess of the capacity of local infrastructure.

Construction. *LESS THAN SIGNIFICANT.* The Fossil Falls Realignment Alternative would include construction of the replacement subtransmission facilities and would require activities similar to the Proposed Project. The Crater Mountain Realignment Alternative would produce a similar amount of solid waste as the Proposed Project, which is within the capacity of landfill facilities. The impact would be less than significant.

Operations and Maintenance. *NO IMPACT.* Similar to the Proposed Project, operations and maintenance activities for the Fossil Falls Realignment Alternative would require periodic repair or replacement of project components as is done with the existing subtransmission line. These activities would not generate significant quantities of solid waste. Therefore, there would be no impact.

Impact US-3: Disrupt existing pipelines and utility systems or cause a collocation accident.

Construction. *LESS THAN SIGNIFICANT.* The Fossil Falls Realignment Alternative would include construction of the replacement subtransmission facilities and would require activities similar to the Proposed Project. As with the Proposed Project, SCE would contact Underground Service Alert to identify any existing underground utilities in the construction zone. Therefore, the impact would be less than significant.

Operations and Maintenance. *NO IMPACT.* During operation and maintenance of this alternative, there would be ongoing periodic needs to repair or replace project components. As is done currently, SCE would coordinate with other utilities prior to construction that may affect other utility facilities. There would be no impact compared with current operation.

4.10.20. Wildfire

4.10.20.1. Environmental Setting of the Fossil Falls Realignment Alternative

The land use around the Fossil Falls Realignment Alternative is undeveloped open space. The Fossil Falls Realignment Alternative is further away from US 395 than the project alignment and would be located further from the Fossil Falls campground and residences near Little Lake than the Proposed Project. The Fossil Falls Realignment Alternative alignment would be located primarily on a mesa above the Fossil Falls area within moderate FHSZs in FRA. The Fossil Falls Realignment Alternative is not located in or near state responsibility areas or lands classified as very high fire hazard severity zones.

4.10.20.2. Environmental Impacts of the Fossil Falls Realignment Alternative

Impact WF-1: Substantially impair emergency response or emergency evacuation.

Impact WF-2: Exacerbate wildfire risks, due to slope, prevailing winds, and other factors, that would thereby expose people to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire.

Impact WF-3: Require the installation or maintenance of 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 WF-4: 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.

Construction and Operations and Maintenance. *NO IMPACT.* Because the Fossil Falls is not located in or near state responsibility areas or lands classified as very high fire hazard severity zones, the alternative would have no impacts related to substantially impairing emergency response or emergency evacuation, exacerbating wildfire risks, or exposing people or structures to significant risks from location in or near a state responsibility area or lands classified as very high fire hazard severity zones (No Impact). Impacts WF-1, WF-2, WF-3, and WF-4 are not discussed further.

The project segment that would be replaced by the Fossil Falls Realignment Alternative is adjacent to a state responsibility area and would have greater wildfire risk than the Fossil Falls Realignment Alternative. While removal of the existing subtransmission lines would have some fire risk associated with the

construction activities near the state responsibility area, the Fossil Falls Realignment Alternative would have less impact on wildfire than the Proposed Project as the alternative would be further from areas of high fire hazard.

4.11. Impacts of the No Project Alternative

4.11.1. Aesthetics

Under this alternative, the Proposed Project would not be constructed, the existing subtransmission facilities would remain. The aesthetic impacts of the Proposed Project would not occur. However, the existing subtransmission lines would continue to operate with reliability discrepancies, and SCE would be required to take emergency actions to ensure reliable operation. Actions that could result in noticeable aesthetic impacts include:

- Installing new structures between existing structures to reduce sag
- Replacing or raising selected existing structures
- Replacement of existing conductors
- Grading to improve ground clearance for conductors
- Rebuilding line segments, which would be an exempt action because there would likely be significant effect on the aesthetic environment

While the aesthetic impacts of one or more of these actions could be significant, the most important aesthetic impact of the No Project Alternative would be the lost opportunities to improve visual conditions along US 395 in the highly scenic areas of the Proposed Project route in Segment 1 that the Crater Mountain, Manzanar, and Fossil Falls Realignment Alternatives offer, as described above.

4.11.2. Agriculture and Forestry Resources

In this alternative, the Proposed Project would not be constructed and the existing subtransmission facilities would remain. The existing subtransmission lines would continue to have reliability discrepancies, and SCE would take emergency action as required to ensure reliable operation. No construction would occur, and typical maintenance activities would occur similar to the existing conditions. Consequently, agricultural uses and forest lands would remain the same as under existing conditions. Therefore, no impact on agriculture or forestry would occur under the No Project Alternative.

4.11.3. Air Quality

In this alternative, the Proposed Project would not be constructed and the existing subtransmission facilities would remain, representing no change from routine operations and maintenance activities performed by SCE in the existing conditions. The existing subtransmission lines would continue to have reliability discrepancies, and SCE would take emergency action as required to ensure reliable operation.

Impact AQ-1: Conflict with or obstruct implementation of an applicable air quality plan.

LESS THAN SIGNIFICANT. In the No Project Alternative, the Proposed Project would not be constructed, and the existing facilities would remain. For this reason, construction phase emissions would not occur in a concentrated manner, as they would for the Proposed Project. As a result, impacts would be less than the Proposed Project. Impacts for construction phase emissions would be decreased in relation to the Proposed Project.

Operation of the existing facilities would continue as it does in the existing conditions. SCE would be in violation of the mitigation plan agreed to with WECC, and SCE may have to replace individual structures or make other limited repairs in response to emergency conditions. These activities would not be likely to conflict with applicable air quality plans, policies, or regulations, so this impact would be less than significant.

Impact AQ-2: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard.

LESS THAN SIGNIFICANT. As discussed in Impact AQ-1, the No Project Alternative would not include any concentrated construction phase emissions and as such would not result in a cumulatively considerable net increase of any criteria pollutants.

Operation of the existing facilities would continue as it does in the existing conditions. SCE may have to replace individual structures or make other limited repairs in response to emergency conditions. These activities would not be likely to result in criteria pollutant emissions in excess of air district thresholds, so this impact would be less than significant.

Impact AQ-3: Expose sensitive receptors to substantial pollutant concentrations.

LESS THAN SIGNIFICANT. As discussed in Impact AQ-1, the No Project Alternative would not include any concentrated construction phase emissions and would not generate other emissions that would expose sensitive receptors to substantial pollutant constructions. SCE may have to replace individual structures or make other limited repairs in response to emergency conditions. These activities would not be likely to expose sensitive receptors to substantial pollutant concentrations, so this impact would be less than significant.

Impact AQ-4: Generate other emissions (such as those leading to odors) adversely affecting a substantial number of people.

LESS THAN SIGNIFICANT. As discussed in Impact AQ-1, the No Project Alternative would not include any concentrated construction phase emissions and would not generate other emissions that would adversely affect a substantial number of people. This impact would be less than significant.

4.11.4. Biological Resources

LESS THAN SIGNIFICANT. In the No Project Alternative, the Proposed Project would not be constructed and the existing subtransmission facilities would remain, representing no change from routine operations and maintenance activities performed by SCE in the existing conditions. The existing subtransmission lines would continue to have reliability discrepancies, and SCE would take emergency actions to ensure reliable operation. Routine operations and maintenance activities would occur on a periodic basis for access road maintenance and maintenance around existing facilities which includes weed control, vegetation trimming and repair of ditches, berms, culverts, and drains. Most regular operations and maintenance of overhead facilities are performed from existing access roads with no surface disturbance. Collision and electrocution hazard conditions would be similar to existing conditions.

Impacts to sensitive communities, wetland communities and jurisdictional waters with the No Project Alternative would be similar to existing operations and maintenance activities. Impacts to habitat may occur from replacing poles and towers, weed control, maintenance of roads, and tree and brush trimming. Repairs of existing facilities, such as poles and towers, and pulling and lay down sites may occur in undisturbed areas which could result in impacts to vegetation and habitat.

Impacts to special-status wildlife and nesting birds with the No Project Alternative may occur from routine operations and maintenance activities including replacing poles and towers, weed control, maintenance of roads, and tree and brush trimming, and repair of ditches, berms, culverts, and drains, which may cause ground disturbance and removal of vegetation, burrows, or nests. Access road maintenance and maintenance around facilities may temporarily increase human presence, opportunistic predators, noise, dust, and vehicle traffic, which may disrupt nesting behavior or cause mortality. Repairs of existing

facilities and use of pulling and lay down sites may occur in undisturbed areas which could result in impacts to wildlife habitat.

Impacts to wildlife movement with the No Project Alternative may occur from increased human presence, equipment, and activity during routine operations and maintenance activities. Access road maintenance and maintenance around facilities may temporarily increase human presence, opportunistic predators, noise, dust, and vehicle traffic, which may disrupt movement behavior or cause mortality. Repairs of existing facilities and use of pulling and lay down sites may occur in restored Project construction areas and undisturbed areas, which could result in impacts to corridor habitat.

On BLM-administered lands, existing operations and maintenance activities under the No Project Alternative would be managed in accordance with DRECP requirements. The DRECP identified detailed CMAs that must be implemented to avoid and minimize impacts to environmental resources and compliance with CMAs is required on BLM lands, which would reduce impacts of the No Project Alternative.

4.11.5. Cultural Resources

LESS THAN SIGNIFICANT. In the No Project Alternative, the Proposed Project would not be constructed and the existing subtransmission facilities would remain, representing no change from routine operations and maintenance activities performed by SCE in the existing conditions. The existing subtransmission lines would continue to have reliability discrepancies, and SCE would take emergency actions to ensure reliable operation. Routine operations and maintenance activities would occur on a periodic basis for access road maintenance and maintenance around existing facilities which includes weed control, vegetation trimming and repair of ditches, berms, culverts, and drains. Most regular operations and maintenance of overhead facilities are performed from existing access roads with minimal new surface disturbance.

4.11.6. Tribal Cultural Resources

LESS THAN SIGNIFICANT. The existing subtransmission line would continue to exist, and it would continue to be maintained within the current ROW. Newly identified cultural and Tribal Cultural Resources are part of the existing baseline and would remain subject to the same ongoing activities as under current conditions.

4.11.7. Energy

As described above, under the No Project Alternative scenario, the Proposed Project would not be constructed and the existing subtransmission facilities would remain. The existing subtransmission lines would continue to have reliability discrepancies, and SCE would take emergency actions as required to ensure reliable operation.

Impact EN-1: Result in wasteful, inefficient, or unnecessary consumption of energy.

LESS THAN SIGNIFICANT. In the No Project Alternative, construction activities would not occur, and the existing facilities would remain, so construction phase energy use would be zero in comparison to the Proposed Project. Operations and maintenance would likely use more energy in the No Project Alternative as reliability discrepancies would be more common and would require an increase in emergency actions to ensure reliable operation in comparison to the Proposed Project. As in the Proposed Project, the No Project Alternative would not result in wasteful, inefficient, or unnecessary consumption of energy, and as such, impacts would be less than significant.

Impact EN-2: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

LESS THAN SIGNIFICANT. In the No Project Alternative, major construction activities would not occur, and the existing facilities would remain. Since no major construction would occur, the Project would not conflict with or obstruct a state or local renewable energy or energy efficiency plan. However, operations and

maintenance would use more energy, and the reliability of the electrical service would be diminished. The impact would be less than significant.

4.11.8. Geology, Soils, and Paleontology

NO IMPACT. In the No Project Alternative, major construction activities would not occur and project facilities would continue to be replaced on an emergency or as-needed basis, similar to the ongoing operations and maintenance activities occurring currently. There would be no new impacts associated with geologic hazards, erosion, landslides, or expansive soil (Impacts GSP-1, GSP-2, GSP-3, and GSP-4). However, the benefits of replacing the existing very old facilities with new and stronger facilities would not occur.

LESS THAN SIGNIFICANT. The potential effects on unique paleontological resources (Impact GSP-5) would continue to occur, as they are currently, as individual structures are replaced as needed. In the absence of mitigation that is recommended for the Proposed Project, there would be no testing of disturbed soil for the potential presence of carbonate-rich paleosols, which are indicators of the presence of microvertebrates.

4.11.9. Greenhouse Gas Emissions

In this alternative, the Proposed Project would not be constructed and the existing subtransmission facilities would remain. The existing subtransmission lines would continue to have reliability discrepancies, and SCE may have to take emergency actions to ensure reliable operation.

Impact GHG-1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

LESS THAN SIGNIFICANT. In the No Project Alternative, the Proposed Project would not be constructed and the existing facilities would remain. For this reason, construction phase GHG emissions would not occur and so impacts would be less than the Proposed Project. Impacts for construction phase emissions would be decreased in relation to the Proposed Project. Operation of the existing facilities would continue as it does in the existing conditions. SCE would be in violation of the mitigation plan agreed to with WECC, and SCE may have to replace individual structures or make other limited repairs in response to emergency conditions. Similar to the Proposed Project, construction and operations would not generate GHG emissions that may have a significant impact on the environment, and as such impacts are less than significant.

Impact GHG-2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing greenhouse gas emissions.

LESS THAN SIGNIFICANT. As discussed in Impact GHG-1, the No Project Alternative would not include any construction phase emissions and would not conflict with applicable plan, policy, or regulation adopted to reduce GHG emissions. Operation of the existing facilities would continue as it does in the existing conditions. SCE would be in violation of the mitigation plan agreed to with WECC, and SCE may have to replace individual structures or make other limited repairs in response to emergency conditions. These impacts are not likely to conflict with plans, policies, or regulations adopted for the purpose of reducing GHG emissions, so impacts would be less than significant, and no mitigation is required.

4.11.10. Hazards and Hazardous Materials

LESS THAN SIGNIFICANT. In this alternative, the Proposed Project would not be constructed and the existing subtransmission facilities would remain. The existing subtransmission lines would continue to have reliability discrepancies, and SCE would take emergency actions as required to ensure reliable operation.

The construction activities required for emergency structure and conductor repair or replacement would likely occur on a small scale, and over a long period of time. The construction impacts of individual

structure replacement would be similar to those of the Proposed Project (and those of the three realignment alternatives), but over an extended timeframe.

Construction activities occurring in response to emergency situations would generally be carried out with only the Applicant's internal environmental controls and best management practices, and without benefit of the mitigation measures recommended in this section. As a result, the Proposed Project (with recommended mitigation) would result in less severe impacts and greater protection of workers and the public.

4.11.11. Hydrology and Water Quality

LESS THAN SIGNIFICANT. In this alternative, the Proposed Project would not be constructed and the existing subtransmission facilities would remain. The existing subtransmission lines would continue to have reliability discrepancies, and SCE would take emergency actions as needed to ensure reliable operation.

In the absence of a concentrated program of structure replacement and removal, demands on water use would be less than with the Proposed Project, and erosion would be reduced.

4.11.12. Land Use and Planning

NO IMPACT. In this alternative, the Proposed Project would not be constructed and the existing subtransmission facilities would remain. The existing subtransmission lines would continue to have reliability discrepancies, and SCE would take emergency action as required to ensure reliable operation. No construction would occur, and typical maintenance activities would occur similar to the existing conditions. Consequently, land uses would remain the same as under existing conditions. Therefore, no impact on land use would occur under the No Project Alternative.

4.11.13. Mineral Resources

NO IMPACT. In the No Project Alternative, the Proposed Project would not be constructed and the existing subtransmission facilities would remain. The existing subtransmission lines would continue to have reliability discrepancies, and SCE would take emergency actions as required to ensure reliable operation. No construction would occur, and typical maintenance activities would occur similar to the existing conditions. Consequently, the No Project Alternative would not affect any mineral resources. Therefore, no impact on mineral resources would occur under the No Project Alternative.

4.11.14. Noise

NO IMPACT. In this alternative, the Proposed Project would not be constructed and the existing subtransmission facilities would remain. The existing subtransmission lines would continue to have reliability discrepancies, and SCE would take emergency actions as required to ensure reliable operation. No construction would occur, and typical maintenance activities would occur similar to the existing conditions. Consequently, noise and vibration levels would remain the same as under existing conditions. Therefore, no impact would occur under the No Project Alternative.

4.11.15. Population and Housing

NO IMPACT. In this alternative, the Proposed Project would not be constructed and the existing subtransmission facilities would remain. The existing subtransmission lines would continue to have reliability discrepancies, and SCE would take emergency actions as needed to ensure reliable operation. These actions would be similar to ongoing operations and maintenance activities, and no new impacts to population or housing would occur.

4.11.16. Public Services

NO IMPACT. In this alternative, the Proposed Project would not be constructed and the existing subtransmission facilities would remain. The existing subtransmission lines would continue to have reliability discrepancies, and SCE would take emergency actions as required to ensure reliable operation. These actions would be similar to ongoing operations and maintenance activities, and no new impacts to public services would occur.

4.11.17. Recreation

In this alternative, the Proposed Project would not be constructed and the existing subtransmission facilities would remain, representing no change from routine operations and maintenance activities performed by SCE in the existing conditions. The existing subtransmission lines would continue to have reliability discrepancies, and SCE would take emergency actions as required to ensure reliable operation. Routine operations and maintenance activities would occur on a periodic basis for access road maintenance and maintenance around existing facilities, and would include weed control, vegetation trimming and repair of ditches, berms, culverts, and drains. Most regular operations and maintenance of overhead facilities are performed from existing access roads with no surface disturbance.

Impact REC-1: Disrupt recreational activities, temporarily blocking or reducing access and visitation to recreational areas.

NO IMPACT. In the No Project Alternative, the Proposed Project would not be constructed, and the existing facilities would remain. There would be no concentrated construction activities that could directly or indirectly disturb recreational activities, or block or reduce access to recreational areas, and therefore there would be no impact.

Impact REC-2: Damage recreational trails or facilities.

NO IMPACT. In the No Project Alternative, the Proposed Project would not be constructed, and the existing facilities would remain. There would be no concentrated construction activities that could damage trails or facilities, and therefore, there would be no impact.

4.11.18. Transportation

NO IMPACT. In this alternative, the Proposed Project would not be constructed and the existing subtransmission facilities would remain. The existing subtransmission lines would continue to have reliability discrepancies, and SCE would make repairs or initiate emergency actions as needed to ensure safe and reliable operation of the transmission system.

Typical transportation impacts associated with system maintenance activities or emergency repair operations would be expected to occur, as they have been over the past 20 years. Typical maintenance activities would occur similar to the existing conditions. Consequently, transportation levels would remain the same as under existing conditions and no impact would occur under the No Project Alternative.

4.11.19. Utilities and Service Systems

In this alternative, the Proposed Project would not be constructed and the existing subtransmission facilities would remain. The existing subtransmission lines would continue to have reliability discrepancies, and SCE would take emergency action as needed to ensure reliable operation.

Impact US-1: Require new water supply entitlements or place demands on local water providers.

LESS THAN SIGNIFICANT. The No Project Alternative would not require any construction activities because no project would be built. However, ongoing maintenance activities would be required to maintain safe and

continued electrical service on the project lines. These actions would occur on an as-needed basis and not scheduled as defined in the Proposed Project, similar to the existing maintenance activities. Continuing with existing maintenance activities would use existing water supply entitlements and resources located near the Proposed Project and would require no new water supply entitlements, and no increase in water use is expected. Impacts would be similar to those of the Proposed Project because the same types of maintenance activities would occur, but they would likely be spread out over a longer timeframe, so would be less intense than the impacts that would occur in the 3-year Project construction effort. Therefore, impacts would be less than significant.

Operation and Maintenance

NO IMPACT. Operations and maintenance activities along the Manzanar Realignment Alternative would require similar water usage as that occurring along the existing SCE line, so no net increase in water usage would be required. There would be no impact on water supplies.

Impact US-2: Generate solid waste in excess of state or local regulations or in excess of the capacity of local infrastructure.

NO IMPACT. The No Project Alternative would require ongoing maintenance activities, similar to the existing maintenance activities conducted on the line. Continuing with existing maintenance activities would not generate solid waste in excess of state or local regulations or in excess of the capacity of local infrastructure. Operations and maintenance activities would require replacement of project components as is done with the existing subtransmission line. These activities would not generate significant quantities of solid waste. Because there would be little to no change from the existing maintenance activities, and no impact would occur.

Impact US-3: Disrupt existing pipelines and utility systems or cause a collocation accident.

NO IMPACT. The No Project Alternative would require ongoing maintenance activities, similar to the existing maintenance activities conducted on the line. As is done currently, SCE would coordinate with other utilities prior to operations and maintenance activities that may affect other utility facilities. Because there would be little to no change from the existing maintenance activities, and no impact would occur.

4.11.20. Wildfire

LESS THAN SIGNIFICANT. In this alternative, the Proposed Project would not be constructed and the existing subtransmission facilities would remain. The existing subtransmission lines would continue to have reliability discrepancies, and SCE would take emergency action as required to ensure reliable operation. No construction would occur, and typical maintenance activities would occur similar to the existing conditions.

In the absence of the Proposed Project, the existing discrepancies include inadequate ground clearance, which presents an increased risk of wildfire. The increased ground clearance that would result from implementation of the Proposed Project, or the Crater Mountain Realignment Alternative, Manzanar Realignment Alternative, or Fossil Falls Realignment Alternative would reduce the risk of wildfire compared to the No Project Alternative.

Under the No Project Alternative, SCE would continue to implement its Wildfire Mitigation Plan, the conditions of the subtransmission line would be expected to further degrade and the subtransmission line would continue to have discrepancies with NERC and CPUC standards. The existing lines which would remain under the No Project Alternative do not meet regulatory standards, which are designed to reduce wildfire risk. However, the No Project Alternative would not increase any wildfire risk as compared to baseline.

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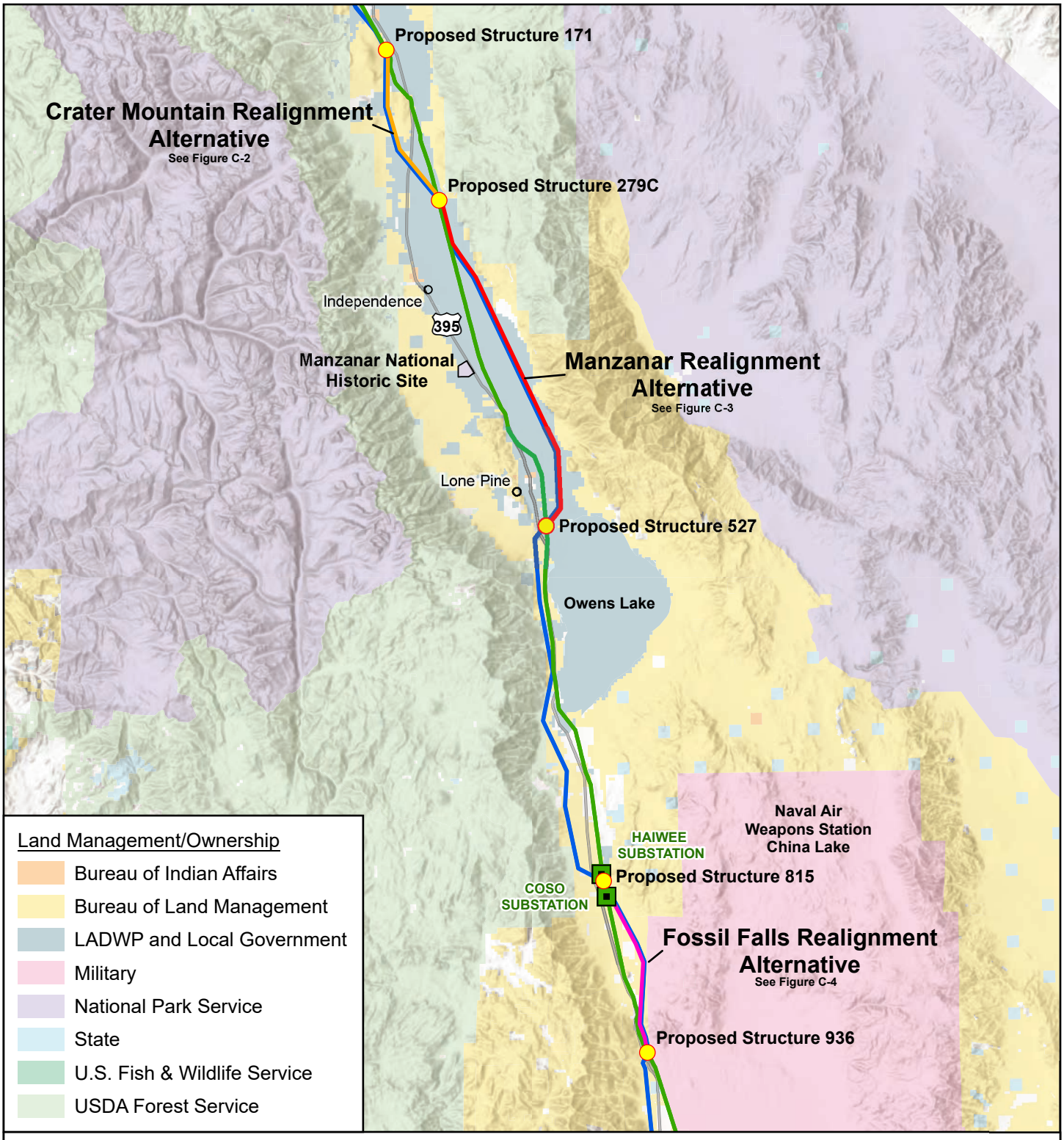

Source: Aspen, 2024; BLM, 2024; CAL FIRE, 2024; ESRI, 2024; SCE, 2024.

Figure 4-1

Overview of Alternative Segments

- Proposed New Structure
- Substation
- Existing Ivanpah-Control 115 kV Line
- LADWP Transmission Corridor (Pacific DC Intertie, LADWP Barren Ridge-Inyo 230 kV)
- Crater Mountain Realignment Alternative
- Manzanar Realignment Alternative
- Fossil Falls Realignment Alternative

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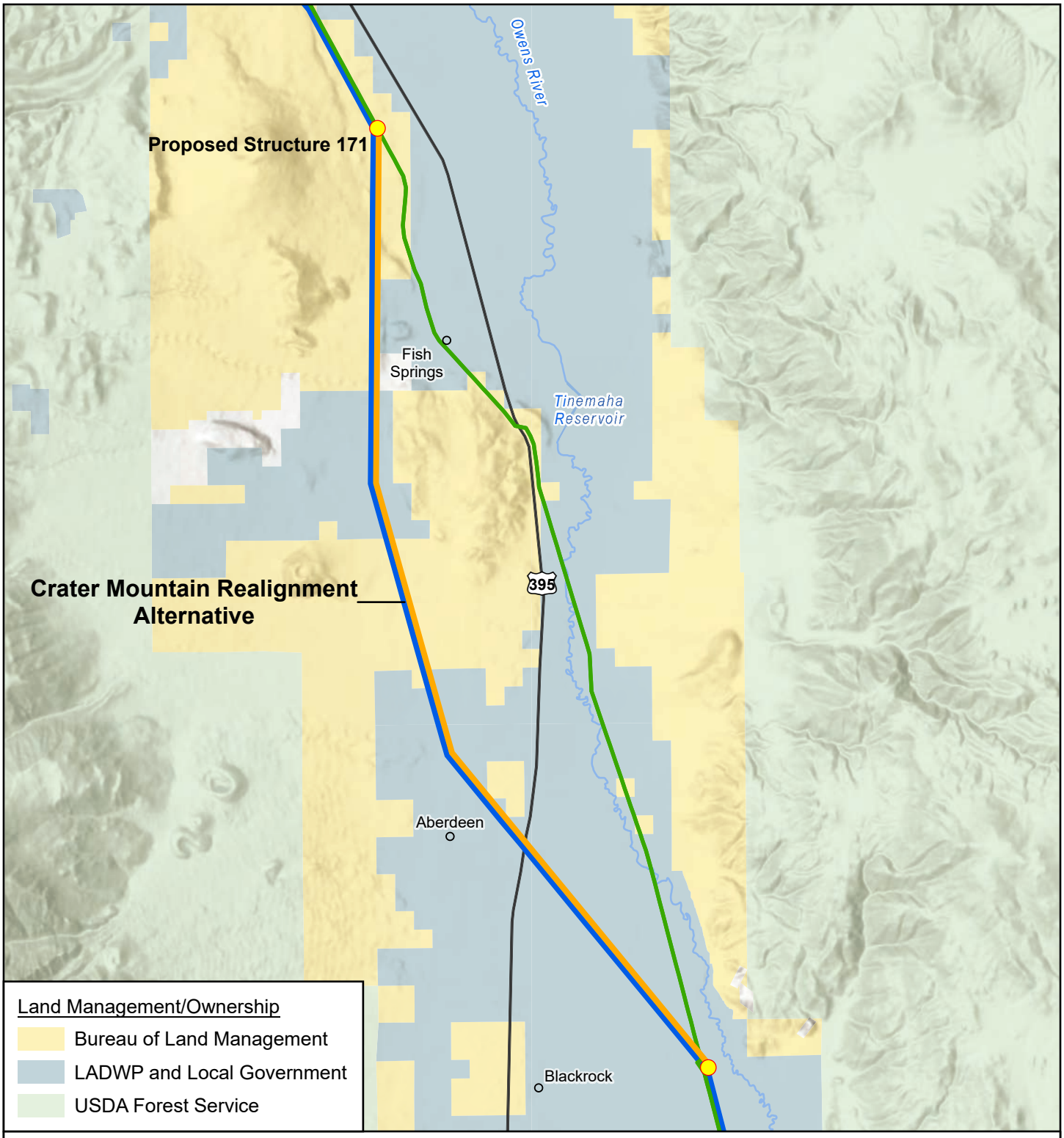


Source: Aspen, 2024; BLM, 2024; CAL FIRE, 2024; ESRI, 2024; SCE, 2024.

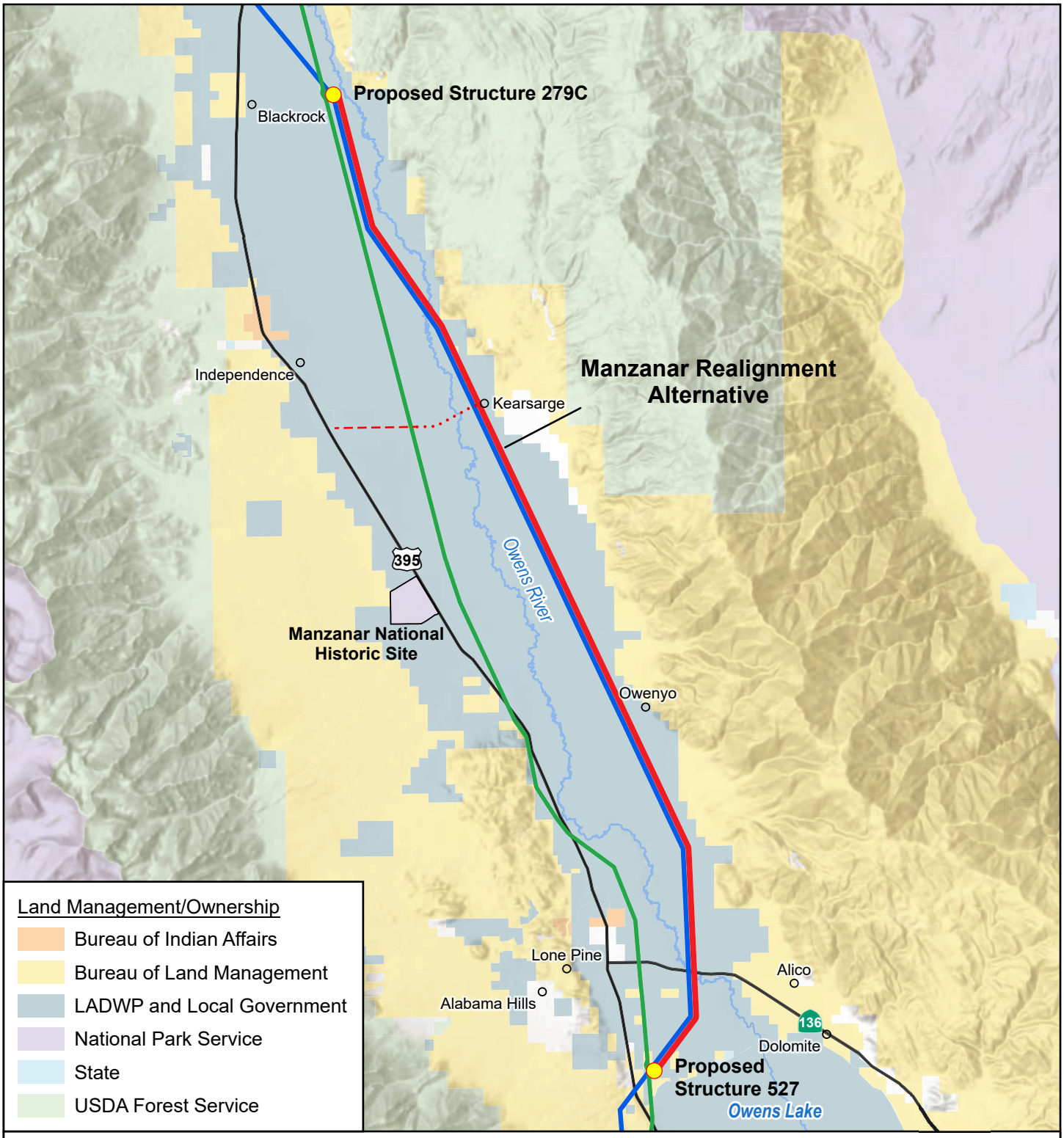
Figure 4-2

Crater Mountain Realignment Alternative

Proposed New Structure
Crater Mountain Realignment Alternative
Existing Ivanpah-Control 115 kV Line
LADWP Transmission Corridor
(Pacific DC Intertie, LADWP Barren Ridge-Inyo 230 kV)

1:120,000

N 0 2 miles



Source: Aspen, 2024; BLM, 2024; CAL FIRE, 2024; ESRI, 2024; SCE, 2024.

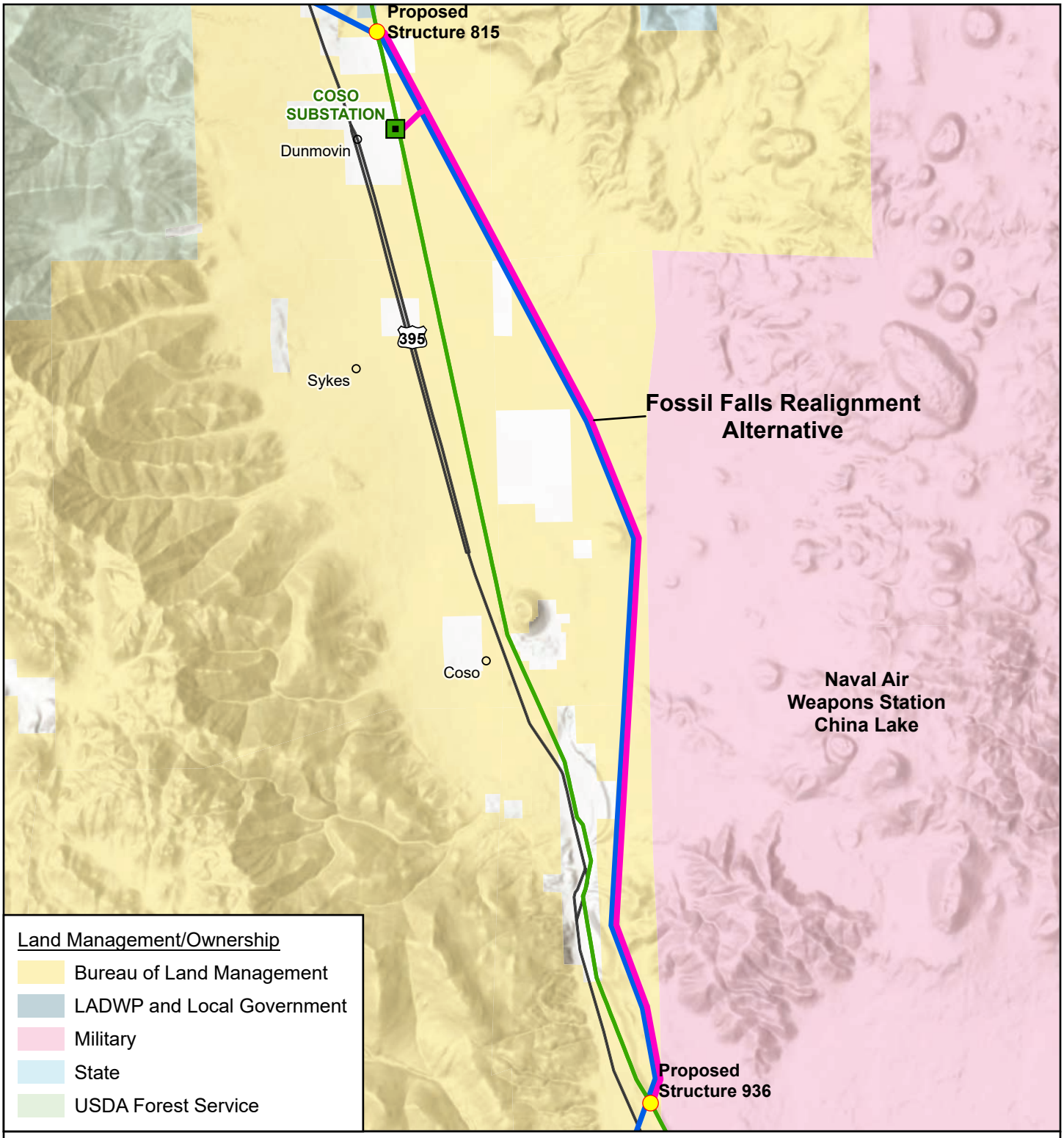
Figure 4-3

Manzanar Realignment Alternative

- Proposed New Structure
- Manzanar Realignment Alternative
- Independence Telecommunications Tap
- Independence Telecommunications Tap: Alternative
- Existing Ivanpah-Control 115 kV Line
- LADWP Transmission Corridor (Pacific DC Intertie, LADWP Barren Ridge-Inyo 230 kV)

1:250,000

N 0 5 miles



Source: Aspen, 2024; BLM, 2024; CAL FIRE, 2024; ESRI, 2024; SCE, 2024.

Figure 4-4

Fossil Falls Realignment Alternative

- Proposed New Structure
- Substation
- Fossil Falls Realignment Alternative
- Existing Ivanpah-Control 115 kV Line
- LADWP Transmission Corridor (Pacific DC Intertie, LADWP Barren Ridge-Inyo 230 kV)

1:120,000

N 0 2 miles



Figure 4-5
Randsburg Underground Alternative

Source: SCE, 2023

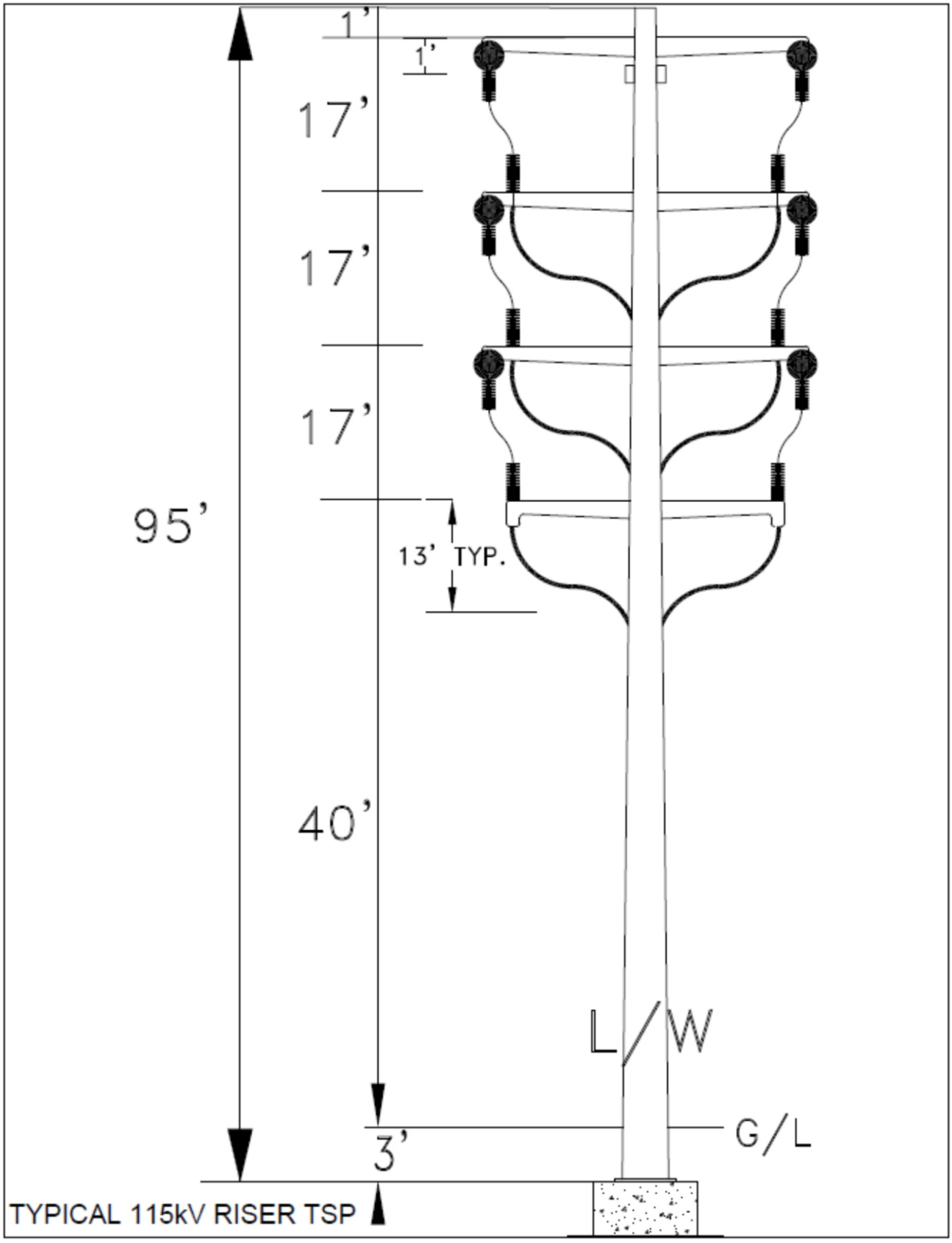


Figure 4-6

Schematic Diagram of Randsburg Riser Structure



Latitude: 35.367778° Longitude: -117.650451°

This image presents the **Existing View** to the north from **KOP 2-4** on Lexington Avenue in Randsburg. This view captures a portion of the residential landscape along Lexington Avenue backdropped by a portion of Segment 2 as it descends an adjacent ridge and passes in close proximity to the historic mining town. The foreground landscape consists of simple, rural residences, backdropped by a sparsely vegetated, angular to rolling ridge, crossed by a visually prominent utility corridor with multiple power lines.	**KOP 2-4** **Lexington Ave. Randsburg** **Existing View**	**Ivanpah-Control Project EIR** **Aesthetics** **Figure 4-7a**



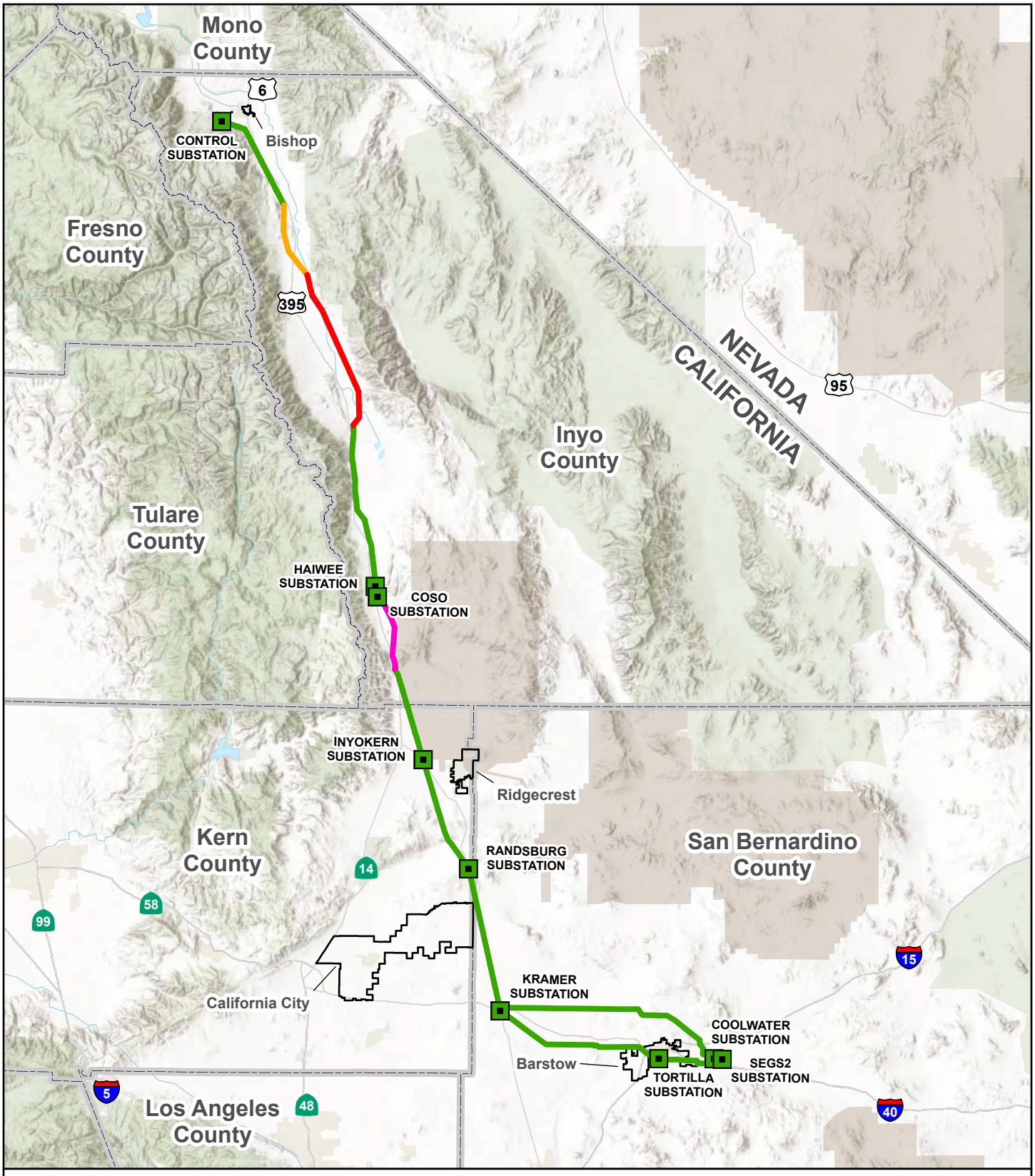
Latitude: 35.367778° Longitude: -117.650451°

This image presents a **Visual Simulation** of the Project having been undergrounded in the vicinity of Randsburg. As shown in the simulation, the only visible evidence of the Project would be the cleared right of way for the buried transmission line. The right of way is a noticeable feature in the landscape and exhibits a low to moderate degree of form and line contrast due to the unnatural linear demarcation in the vegetation, and color contrast between the right of way soils and adjacent undisturbed soils and vegetation.

KOP 2-4
Lexington Ave. Randsburg
Underground Sim.

Ivanpah-Control Project EIR

Figure 4-7b



Sources: Aspen, 2025; ESRI, 2025; SCE, 2025.

Substation
City Boundary
County

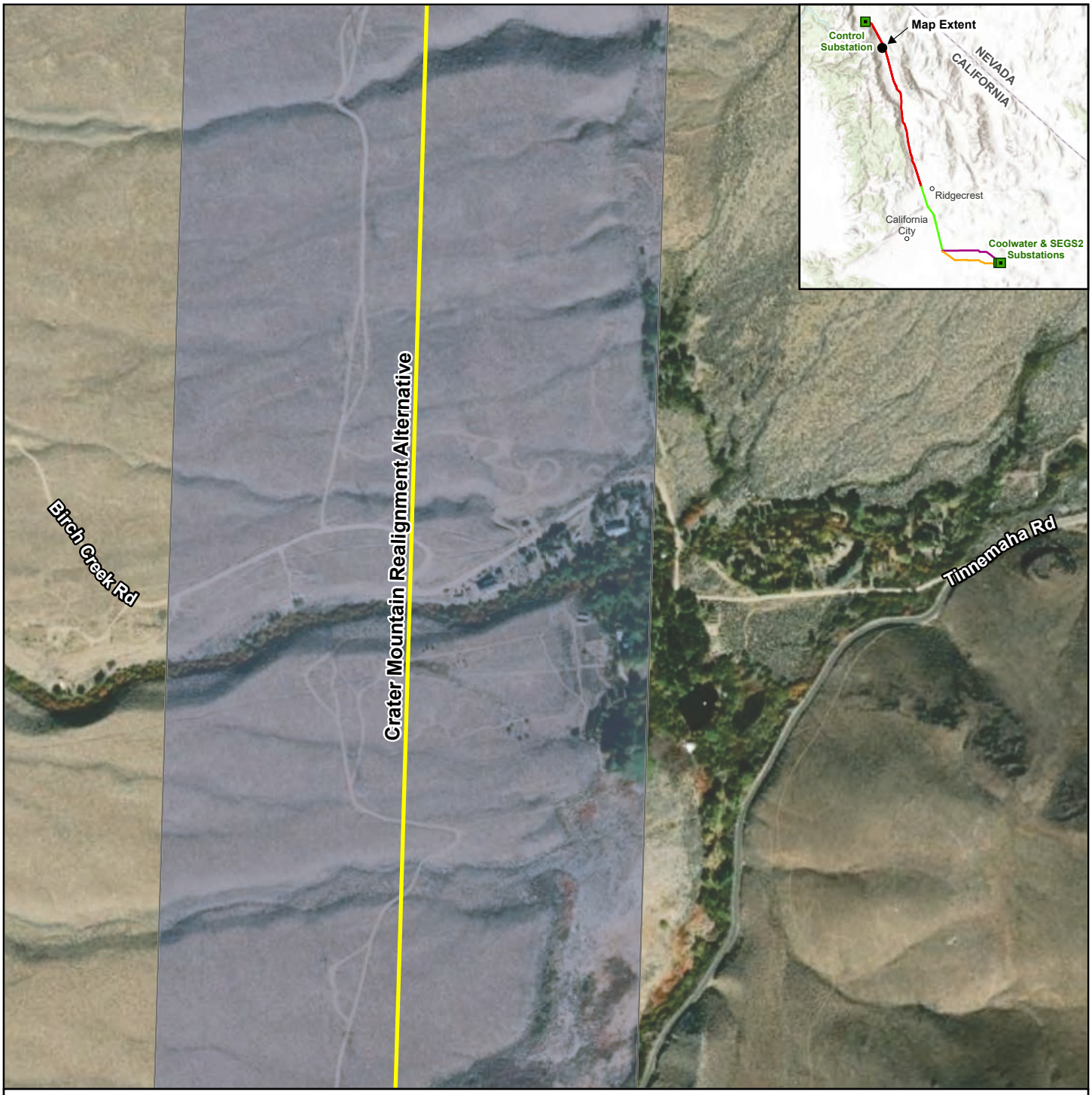
Existing Ivanpah-Control 115 kV Line
Crater Mountain Realignment Alternative
Manzanar Realignment Alternative
Fossil Falls Realignment Alternative

Figure 4-8

Environmentally Superior Alternative

1:1,584,000

N 0 25 Miles



Source: Aspen, 2024; Esri, 2024; SCE, 2024.

Figure 4-9
Noise-Sensitive Receptors
Birch Creek Road

Crater Mountain Realignment Alternative

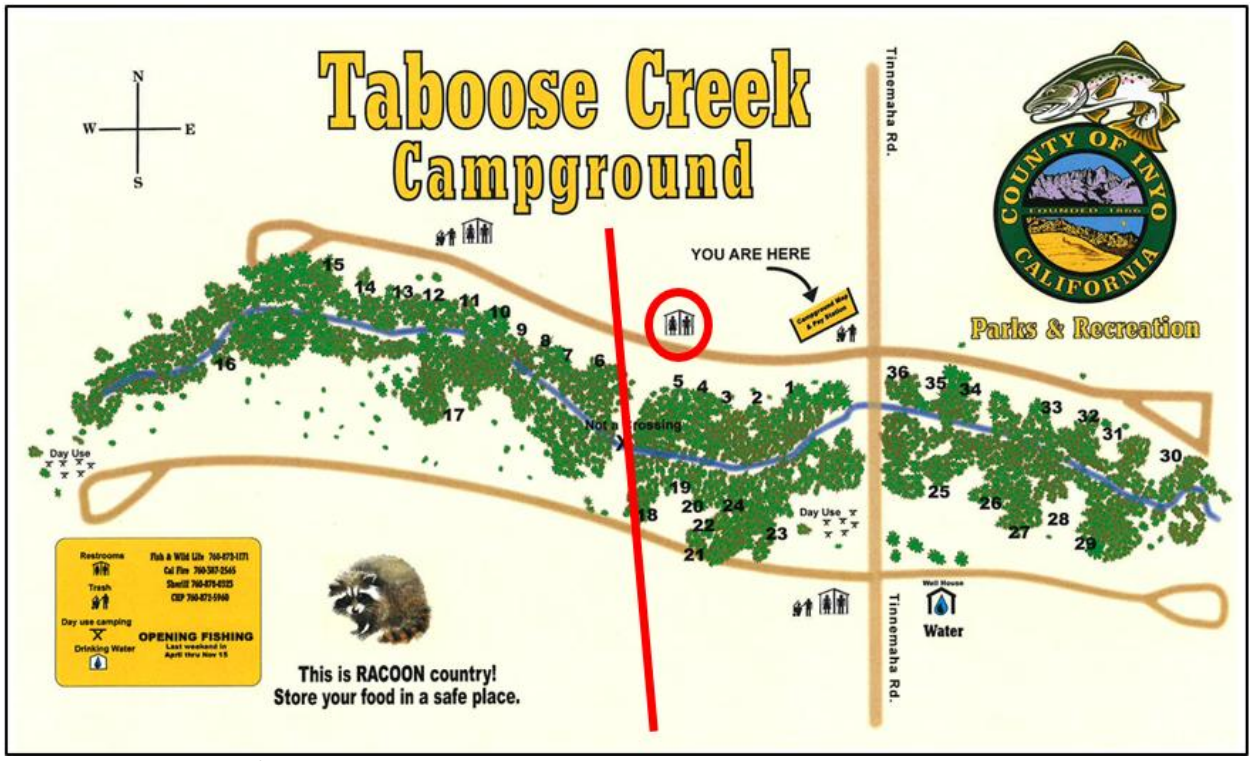
1,000-ft Buffer

1:7,200

N 0 600 feet

*Disclaimer: Alternative not engineered to scale.

Figure 4-10. Taboose Creek Campground



Source: Inyo County, 2025b

5. CUMULATIVE SCENARIO AND CUMULATIVE IMPACTS ANALYSIS

5.1. Introduction

This chapter discusses cumulative impacts in accordance with State CEQA Guidelines 14 CCR §15130, where an EIR must discuss cumulative impacts if the incremental effect of a project, combined with the effects of other projects is "cumulatively considerable" (14 CCR §15130(a)). As defined in CEQA Guidelines 14 CCR §15355, cumulative impacts "refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." "An EIR should not discuss impacts which do not result in part from the project evaluated in the EIR." (14 CCR §15130(a)(1).) However, "[c]umulative impacts can result from individually minor but collectively significant projects taking place over a period of time." (14 CCR §15355(b).) Such incremental effects are to be "viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects" (14 CCR §15164(b)(1)). Together, these projects comprise the cumulative scenario for the cumulative analysis.

Both the severity of impacts and the likelihood of their occurrence are to be reflected in the discussion, "… but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion of cumulative impacts shall be guided by standards of practicality and reasonableness, and shall focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact" (14 CCR §15130(b)).

There are two different methodologies for identifying what would constitute the cumulative scenario. One is to use a "list of past, present, and probable future projects producing related or cumulative impacts" (14 CCR §15130(b)(1)(A)). An alternate method of establishing the cumulative scenario for the analysis is to use a "summary of projects contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area-wide conditions contributing to the cumulative impact" (14 CCR §15130(b)(1)(B)).

The approach used in this EIR is the project list approach. In addition, analysts considered general plans and other documents but did not rely on them to establish the cumulative scenario for the analysis.

The project list includes those projects found within a geographic area sufficiently large to provide a reasonable basis for evaluating cumulative impacts. The area over which the cumulative scenario is evaluated may vary by resource, because the nature and range of potential cumulative effects vary by resource. This area is identified as the geographic scope for the analysis of cumulative impacts related to a particular resource.

The analysis of cumulative effects must consider a number of variables. These include geographic (spatial) limits, time (temporal) limits, and the characteristics of the resource being evaluated. The geographic scope of the analysis is based on the nature of the geography surrounding the Proposed Project and the characteristics and properties of each resource and the region to which they apply. In addition, each project in a region will have its own implementation schedule, which may or may not coincide with the Proposed Project's schedule.

5.2. Cumulative Projects

Projects included in the cumulative effects analysis were assembled from a wide range of sources, including SCE and public agency websites. Table 5-2, Cumulative Projects, presents the list of projects considered relevant for the I-C Project analysis. For each project, the table presents an identification number, a brief description, the jurisdiction in which it is located, distance from the I-C Project alignment, status, and anticipated construction schedule (if known). These projects are also depicted in Figure 5-1a through Figure 5-1d, Cumulative Projects. The map shows the locations of projects contributing to the cumulative scenario and their geographic relationship to the Proposed Project.

The general study area for cumulative projects is a three-mile radius around project features. The cumulative effects analysis prepared for each discipline (presented in Section 5.3) defines the area appropriate to that discipline where there is the potential for impacts to combine.

Collectively, these projects represent known and anticipated activities that may occur in the project vicinity and that have the potential to contribute to a cumulative impact. Because the I-C Project is 262 miles long with occasional nodal facilities along its length, no single project in Table 5-1 interacts with the Proposed Project along its entire route.

5.2.1. SCE Projects and Programs

The entire I-C Project is within SCE's service territory, so there are a number of other ongoing SCE efforts in proximity to the Proposed Project.

5.2.1.1. SCE Projects

SCE identified the following projects that are in planning or permitting phases and are in proximity to the Proposed Project. These projects are included in Table 5-2, Cumulative Projects; their project ID numbers in Table 5-2 are shown in parentheses.

- SCE Control-Silver Peak 55 kV Project (1-1): This proposed project originates at the Control Substation, and heads east out of the substation on a different set of structures.
- SCE Cal City 115 kV Upgrade Project (2-3): This proposed SCE project would result in construction of a new 115 kV line, installed west of the Proposed Project along US 395 for 18.5 miles (between 20 Mule Team Parkway and the Kramer Substation just south of SR 58). The cumulative analysis considers the Cal City proposed project, which would result in construction of a new single-circuit 115 kV subtransmission line, with a new access road, between 200 and 230 feet west of the I-C Project alignment for approximately 18.5 miles along US 395 (between 20 Mule Team Parkway and SR 58; see Figure 2-2). In addition, as described in EIR Section 2.2.1, three options are considered for the I-C Project; the options would place a different length of the Cal City 115 kV conductor on the structures constructed for the I-C Project and in slightly different locations. The analysis of the impacts of the shared structures is considered in each section within Chapter 3. The analysis of potential cumulative effects and the projects' potential to create combined effects on the environment is based on the design of the Cal City Project as proposed by SCE.
- SCE Aratina 230 kV Gen-Tie Project at Kramer Substation (3S-1): Construct gen-tie to solar project.
- SCE Accelerate Substation in southwest Barstow (3S-5): Dedicated for Brightline West High-Speed Train.

5.2.1.2. SCE Deteriorated Pole Program

The Deteriorated Pole Program (DPP) is an ongoing SCE system-wide program created over a decade ago to address the inspection and maintenance requirements of CPUC's General Order 165 and General Order 95. The Transmission Line Rating Remediation (TLRR) and DPP are independent programs.

Reconductoring of 42 miles within Segment 1 was scheduled for 2019-2020 but did not occur as planned. SCE states that there is continual review of SCE facilities within High Fire Risk Area (HFRA) and reconductor work for Segment 1 is not currently expected to occur prior to the start of this Proposed Project. Regardless of whether reconductoring within HFRA occurs before construction of the Proposed Project, the Proposed Project will include rebuilding and reconductoring of Segment 1 to remediate discrepancies along the Control-Haiwee-Inyokern and Control-Coso-Haiwee-Inyokern 115 kV subtransmission line.

SCE has been implementing the DPP pole replacements prior to implementation of the I-C Project and reconductoring of the I-C line segments. All poles replaced in the DPP in Segments 1 and 2 will require

replacement as part of the Proposed Project; however, poles replaced in Segments 3N and 3S are not anticipated to require further replacement.[1]

A total of 464 poles have been replaced under the DPP since 2020, and an additional 76 poles are scheduled for replacement under this program through 2025. Table 5-1 (Deteriorated Pole Program Pole Replacements) summarizes the poles replaced and planned for replacement under the DPP for each segment. [2]

Table 5-1. Deteriorated Pole Program – Poles Installed by Year

	2020	2021	2022	2023	2024	2025	Grand Total
Segment 1	**-**	**2**	**4**	**3**	**9**	**-**	**18**
Installed	-	2	4	3	2	-	11
Planned Installation	-	-	-	-	7	-	7
Segment 2	-	**-**	**2**	-	-	-	**2**
Installed	-	-	2	-	-	-	2
Planned Installation	-	-	-	-	-	-	-
Segment 3N	**123**	**40**	**84**	**6**	**5**	**34**	**292**
Installed	123	40	84	6	5	-	258
Planned Installation	-	-	-	-	-	34	34
Segment 3S	**113**	**18**	**57**	**19**	**6**	**-**	**213**
Installed	113	18	57	19	**6**	**-**	213
Planned Installation	-	-	-	-	**-**	**-**	0
Grand Total	**236**	**60**	**147**	**28**	**20**	**34**	**525**

Source: SCE Response to CPUC DR 7 (9/30/24)

[1] PEA Deficiency Data Request Set ED, SCE-006, Question 02, Response Date: 9/11/19
[2] PEA Deficiency Data Request Set ED, SCE-013, Questions 13-1 and 13-2, Response Date 4/19/23

Table 5-2. Cumulative Projects

Project ID; Project Name	Description	Jurisdiction (Source of Data)	Distance from I-C Route	Status *Proposed (P), Under Construction (C)*	Anticipated Schedule
I-C Segment 1					
1-1 SCE Control-Silver Peak Subtransmission Line	SCE is proposing to demolish segments of their existing rights-of-way and build a new alignment to remediate discrepancies (proposed action) across approximately 61 miles of two existing 55 kilovolt (kV) subtransmission lines, collectively referred to as the Control Silver Peak subtransmission line. Segment 1 of the Proposed Project involves removing existing groundwire and installing optical groundwire at the Control Substation.	BLM (BLM, 2024a)	Project overlap at the Control Substation.	P: EIS	NOI/Scoping Period initiated. Construction estimated to end mid-2029
1-2 Manzanar Pavement Project	Project will repave nearly 11 miles of pavement on US 395 from about 2.5 miles south of the Manzanar National Historic Site Visitor Center, through the town of Independence, to 0.3 miles north of Fish Hatchery Road.	Caltrans District 9	Parallel for 11 miles and 0.5 to 3.5 miles to west	P: Contract Approval	March 2026: Tentative Begin Construction
1-3 North Lone Pine Pavement Project	Project will restore the pavement of approximately 4.2 lane miles of US 395 from Locust Street to 0.2 miles north of Cemetery Drive near the town of Lone Pine.	Caltrans District 9	Approximately 1 mile to west	P: IS/ND	October 2026: Begin Construction
1-4 Owens River Water Trail Project	Development of recreational access to a 6.3-mile section of the newly re-watered Lower Owens River. The proposed project would develop facilities for recreational users to enter and exit the river and allow unimpeded navigation for non-motorized watercrafts.	Inyo County (CEQAnet)	Between 0.4 to 1.0 miles	P: DEIR	May 2019: DEIR published
1-5 Cartago Wildlife Area Fence Extension Project	The California Department of Fish and Wildlife ("CDFW") proposes to extend already existing barbed-wire fencing at Cartago Wildlife Area to enclose the northern and eastern portions of the property. The proposed extension will result in approximately 1.5 miles of new fencing. The new fence will prevent trespass cattle grazing on the property and protect listed and Endangered plant species that occur on the property.	CDFW (CEQAnet)	Adjacent to project	P NOE	April 2024: NOE published
1-6 LADWP Right of Way (ROW) Dust Mitigation Project	Amend the existing BLM ROW grant (CACA 055470) held by LADWP for the Owens Lake Dust Mitigation Program Phase 9/10 Project. ROW as amended includes approx. 84 acres of public land.	LADWP/BLM	Approximately 0.5 miles east	Ongoing	Ongoing

KCPW = Kern County Planning Website; ICPW = Inyo County Planning Website; SBCPW = San Bernardino County Planning Website; California Department of Transportation = CADOT

Project ID; Project Name	Description	Jurisdiction (Source of Data)	Distance from I-C Route	Status *Proposed (P), Under Construction (C)*	Anticipated Schedule
1-7 California Broadband Cooperative (CBC) Haiwee North Optical Line	CBC requests authorization to install two access vaults, one on the east side of US 395 and the other near the LADWP parcel. CBC also requests authorization to trench a buried optical line.	BLM	The I-C project crosses the proposed buried optical line 0.3 miles east of US 395 (via southern access route)	P: Analysis & Document Preparation	May 2022: National Historic Preservation Act Review published
1-8 North Haiwee Dam No. 2	This Project involves construction of North Haiwee Dam (NHD) No. 2 components; realignment of Cactus Flat Road; realignment of the Los Angeles Aqueduct and construc-tion of a diversion structure and a bridge; construction of the diversion channel and NHD modifications; and excavation of materials from BLM disturbance area.	BLM/LADWP	0.3 miles	C: January 2021	January 2021 – July 2027
1-9 CBC Haiwee South Optical Line	CBC proposes to install one access vault on the east side of US 395 (near the LADWP parcel) and install a buried optical line 4,680 feet long between US 395 and the South Haiwee Dam.	BLM	The I-C project crosses the proposed buried optical line 0.85 miles east of US 395	C: December 2021	December 2021-unknown completion
1-10 Little Lake Aqueduct Crossover Project	Connect the First Los Angeles Aqueduct (LAA 1) and Second Los Angeles Aqueduct (LAA2) through installation of approximately 183 feet of 60-inch diameter pipe.	Los Angeles Dept Water & Power (LADWP)	Approx. 1.4 miles west of Segment 1. Approx. 1.75 miles SW of Fossil Falls Trailhead	C: NOD May 2024	Start Fall 2025
1-11 East Line Street Bridge Replacement Project	The project would replace the existing East Line Street Bridge with reinforced concrete box culvert sections and a new sidewalk.	City of Bishop	Approx. 3 miles NE of Segment 1. NE of Control Substation	P: NOD May 2024	Unknown
1-12 Big Pine Wastewater Treatment Facility Expansion	Construction of a new rapid infiltration pond as 5-acre expansion to an existing 10.3-acre existing wastewater treatment facility.	Inyo County Planning Department	Approx. 0.6 miles east of junction of US 395 and SR 168	P: NOD 02/07/2025	Unknown
1-13 Fish Springs Pavement Project	Repave nearly 9 miles of US 395 from 0.2 miles north of Elna Road, through the town of Big Pine, to the junction of State Route 168 E, including street and sidewalk improvements.	Inyo County (Caltrans District 9)	On US 395, parallels the Project for approximately 9 miles between Big Pine and the junction of US 395 and SR 168 E	C: September 2025	Begin construction September 2025

KCPW = Kern County Planning Website; ICPW = Inyo County Planning Website; SBCPW = San Bernardino County Planning Website; California Department of Transportation = CADOT

Project ID; Project Name	Description	Jurisdiction (Source of Data)	Distance from I-C Route	Status *Proposed (P), Under Construction (C)*	Anticipated Schedule
I-C Segment 2					
2-1 Kramer South Solar Farm	130 MW photovoltaic (PV) solar energy generating facility that includes 130 MW of energy storage located on approximately 342 acres.	San Bernardino County	1-mile west in Kramer Junction vicinity	P: Conditionally approved June 2020	Extension of Time approved until 6/16/2026
2-2 Ridgecrest-Inyokern Pavement Project	Rehabilitate approximately 24 lane miles of pavement on State Route 178 E in eastern Kern County from just east of the junction with State Route 14 to the San Bernardino County line.	Kern County (Caltrans District 9)	Intersects with project at SR 178	P: IS/MND dated March 2024	Begin construction August 2030
2-3 SCE California City Project	Upgrading the existing Cal City 33/12 kV Substation to 115/33 kV and 115/12 kV. Constructing two new 115 kV source lines. Constructing a new 115 kV subtransmission line segment into Edwards Substation.	SCE	Parallels the I-C Project along US 395 for 18 miles north of the Kramer Substation	P: PTC submitted March 2023	Construction estimated from March 2026 to March 2028
I-C Segment 3N					
3N-1 Overnight Solar Project	A solar PV electricity generation and energy storage facility producing up to 150 MW of solar power and 150 MW battery energy storage system (BESS) on approxi-mately 822 acres, plus a 1.1 mile gen-tie. The project would connect to the existing SCE Kramer Substation.	San Bernardino County	Southern boundary of the project is located 1.0 miles north of the I-C Project, in close vicinity to the Mojave Solar Project.	C: Approved by Board of Supervisors on August 18, 2025.	Approximately 2-year construction from 2025 to 2027.
3N-2 Haney Brown Quarry	A Revised Reclamation Plan to combine the Reclamation Plans for Haney Brown Rock #1 and Haney Brown Rock #2 Quarries. The proposed revision is to extract up to 25,000 tons per year of decorative and construction rock for the next 30 years.	San Bernardino County	San Bernadino County, City of Barstow. Approx. 2.5 miles SE of Segment 3N. Approx. 1.5 miles N of Marin Corps Logistics Base, Barstow	P: MND September 2023	N/A
3N 3 Jazmin Solar Energy Project	Conditional Use Permit to construct and operate an 8 MW PV solar power generating facility with battery storage capabilities on approximately 40 acres in the community of Hinkley.	San Bernardino County	Approx. 0.56 miles south of Segment 3N. Approx. 2.2 miles SE of Harper Lake Wildlife Viewing Area	P: MND January 2021	Conditionally approved 07/08/2021

KCPW = Kern County Planning Website; ICPW = Inyo County Planning Website; SBCPW = San Bernardino County Planning Website; California Department of Transportation = CADOT

Project ID; Project Name	Description	Jurisdiction (Source of Data)	Distance from I-C Route	Status *Proposed (P), Under Construction (C)*	Anticipated Schedule
I-C Segment 3S					
3S-1 SCE Aratina Gen-Tie Project	Interconnecting SCE's Kramer Substation to customer's Aratina 230 kV Substation supporting solar generating facilities	San Bernardino County (SCE)	Connection from Kramer Substation to Aratina Substation	P: Filed with EAFB	N/A
3S-2 Lenwood Ave EV Charging and Logistic Facility	The project would include development of an EV Charging station to serve light duty/passenger vehicles and medium and heavy-duty trucks, and on 100 acres.	San Bernardino County	Approx. 0.56 miles South of Segment 3S. Approx. 0.45 miles south of junction of Lenwood Rd & Agate Rd.	P: NOP of DEIR May 2024	Unknown
3S-3 Solar 33 National Trails Solar Facility	Conditional use permit to construct and operate a 4.8 MW PV solar power generating facility with battery storage capabilities on approximately 35 acres.	San Bernardino County	Approx. 1.6 miles SE of Coolwater Substation	P: MND dated 7/28/2021	Conditionally Approved November 18, 2021- No permits issued.
3S-4 Solar 66 Energy Project	Conditional use permit to construct and operate a 7 MW PV solar power generating facility on approximately 142 acres.	San Bernardino County	Approx. 0.57 miles north of Segment 3S. East of Nebo Street and both north and south of National Trails Highway (Route 66) in the community of Daggett	P: MND March 2021	Conditionally Approved November 4, 2021- No permits issued.
3S-5 SCE Accelerate Substation	115 kV customer-dedicated Substation to be called Accelerate Substation, located between I-15 and Rimrock Road in southwestern Barstow. Involves a new 115 kV switchrack to loop Coolwater-Tortilla 115 kV line and separate telecommunications lines.	San Bernardino County (SCE)	Approx. 0.07 miles NE of Segment 3S. Approx. 0.15 miles NW of junction of P St and Azurite Rd in the city of Barstow	Unknown	Unknown

KCPW = Kern County Planning Website; ICPW = Inyo County Planning Website; SBCPW = San Bernardino County Planning Website; California Department of Transportation = CADOT

5.3. Cumulative Effects of the Proposed Project

5.3.1. Introduction

Sections 5.3.2 through 5.3.21 present the cumulative effects analysis for each resource area in the same order as presented for the impact analysis for the Proposed Project in Section 3. The cumulative effects analysis for each resource area first defines the geographic area in which the effects of other projects may combine with those of the Proposed Project and then explains the cumulative effects themselves.

5.3.2. Aesthetics

As discussed in Section 3.2, the Proposed Project is in a region comprised of diverse, natural scenery as well as a variety of built features that include infrastructure associated with a regional highway, electrical utility, and railway corridors. Existing utility elements include lattice structures, steel poles, and wood poles supporting overhead transmission and distribution power lines; substations; and telecommunication towers. Most of the Proposed Project passes through undeveloped land that is sparsely populated.

The Proposed Project would consist of the removal of existing subtransmission structures and conductors and their replacement with new structures and conductors within the same ROW. The Proposed Project study area is not located within any designated scenic vista, although an approximately 9-mile portion of Segment 1 parallels and crosses a segment of US 395 that is an Officially Designated State Scenic Highway (approximately 20.1-mile segment of the highway between Fish Springs Road and Fort Independence).

The overall levels of change from the Proposed Project would range from low to moderate. As discussed in Section 3.2, the Proposed Project would have no impact to designated scenic vistas (Impact AE-1) and would not conflict (have no impact) with applicable zoning and/or other regulations governing scenic quality in urbanized areas (Impact AE-4). Therefore, the Proposed Project would not result in cumulatively considerable impacts regarding these criteria, and in accordance with CEQA Guidelines 15130(a)(1), no further analysis is required.

5.3.2.1. Geographic Scope

The geographic scope of potential cumulative impacts on aesthetics encompasses the locations from which a viewer could see Proposed Project construction or operation, along with views of other visible cumulative projects. For the cumulative impact analysis for aesthetics, Table 5-2 and Figures 5-1a through 5-1f (Cumulative Projects) identify 24 cumulative projects for consideration. Of those 24 cumulative projects, only two projects would be visible within the same field of view as the Proposed Project at the locations where the Proposed Project would result in significant aesthetics impacts (and, thus, have potential to contribute cumulatively considerable aesthetics impacts in combination with relevant cumulative projects). The cumulative projects (and their locations) include:

- 1-13: Fish Springs Pavement Project (US 395 Officially Designated State Scenic Highway Segment)
- 2-3: SCE California City Project (North of Kramer Junction)

5.3.2.2. Cumulative Analysis

Impact AE-2: Substantially damage scenic resources within a state scenic highway.

LESS THAN CUMULATIVELY CONSIDERABLE. An approximately 9-mile portion of Segment 1 parallels and crosses a segment of US 395 that is an Officially Designated State Scenic Highway. As analyzed in Section 3.2, during construction, the Proposed Project would have temporary significant and unavoidable impacts as a result of using Material Yard 1-7, which would occupy approximately five acres located approximately 400 feet east of US 395 on the north side of Aberdeen Station Road.

One project, the Fish Springs Pavement Project (1-13)[3], is located within the scenic portion of US 395 that has potential to result in cumulative impacts when considered with the Proposed Project. The Fish Springs Pavement Project (1-13) proposes repaving US 395 and is expected to begin construction during the fourth quarter of 2025, as shown on Table 5-2. The incremental effects of construction activities attributable to the Proposed Project have potential to become cumulatively considerable if construction activities associated with the Fish Springs Pavement Project were to occur simultaneously with the Proposed Project's use of Material Yard 1-7, or immediately before or after construction of the Proposed Project. Based on the Fish Springs Pavement Project construction schedule compared with the Proposed Project's construction start during the second quarter of 2027, construction of the Proposed Project will not likely overlap with the Fish Springs Pavement Project. As a result, there would be no cumulative scenario where the construction impacts from the Proposed Project would contribute incremental effects that would result in significant cumulative impacts.

With respect to Proposed Project operation, as discussed in Section 3.2, the Proposed Project converges on, spans, and then parallels the scenic highway segment of US 395 between Proposed Project Mileposts 24 and 26 (approximately 8 to 9 miles south of the community of Big Pine), with the span of US 395 occurring just west of Tinemaha Reservoir and approximately 0.4 mile north of the intersection with East Elna Road. Within this portion of the Proposed Project, 11 existing monopoles would be replaced with 18 slightly larger and more visually prominent poles imparting greater industrial character and adverse visual contrast. The collection of new structures would also further impair public views of the background scenic resources (valley landscape and Inyo Mountains) from the State Scenic Highway, as analyzed in Section 3.2.

However, there are no cumulative projects that would: 1) be visible within the same field of view as this two-mile segment of the Proposed Project when viewed from the scenic highway segment of US 395 and 2) exhibit sufficiently similar visual characteristics and industrial character (to the Proposed Project) to result in a cumulatively significant impact when combined with the Proposed Project under Impact AE-2. Project 1-13 is a repaving project, which would not exhibit visual characteristics similar to the Proposed Project, nor would it be visually noticeable to motorists in the longer term. Therefore, it is not expected to result in a significant cumulative aesthetics effect under Impact AE-2 during Proposed Project operation. Because the cumulative impact would be less than significant, the incremental contribution from the Proposed Project would not result in cumulative considerable effects that would substantially damage scenic resources within a State scenic highway.

Impact AE-3: In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings.

LESS THAN CUMULATIVELY CONSIDERABLE. Construction of the Proposed Project would cause temporary visual effects due to the presence of equipment, vehicles, materials, and workforce. These effects would occur throughout the Proposed Project area, including the scenic views within The Narrows. While these temporary construction effects would be less than significant, they could potentially combine with the construction impacts of other projects to result in a significant cumulative impact. However, there is no cumulative project's construction that would overlap with the Proposed Project construction or that would occur immediately before or after construction of the Proposed Project within the Narrows. Therefore, substantial degradation of the existing visual character or quality of public views of the site and its surroundings in the Narrows would not occur from a cumulative impact.

With respect to Proposed Project operation, of the two cumulative projects that could potentially cause aesthetics impacts in combination with the Proposed Project's operation (which would result in replacement

[3] While a portion of the Manzanar Pavement Project (1-2), as shown on Figure 5-1b, is located along the scenic portion of US 395, this project's location is roughly 3 miles from the Proposed Project, and outside of the field of view of the Proposed Project; therefore, the Manzanar Pavement Project is not assessed in the cumulative visual impacts analysis.

of the existing facilities), neither of the projects are located within the vicinity of The Narrows. Therefore, the new, significant aesthetics effect that would be contributed by the Proposed Project (within The Narrows, as addressed in Section 3.2) would not be cumulatively considerable in the absence of any cumulative projects in the vicinity of The Narrows.

Segment 2. The southernmost 18 miles of Segment 2, along US 395, would share a ROW with the proposed SCE Cal City Project 115 kV line, which would be installed immediately west of the Proposed Project. Along this entire segment, the Proposed Project closely parallels the SCE Coso-Kramer 220 kV line, which is closer to US 395, larger, and more visually prominent than the 115 kV line. The Proposed Project would be rebuilt in nearly the same place that it is currently located, and while the structure types would be different from the existing ones, its continued presence along the highway and in an occupied transmission corridor would not contribute considerably to degradation of the visual character of the area. Specifically, the addition of the SCE Cal City Project conductors would not be noticeable to the casual observer on US-395 because the double-circuit conductor scenario would be similar to what already exists and what is being replaced. The additional 30-foot height increase and increased structural complexity associated with the underbuild would be noticeable but would occur over a relatively short (2-mile) distance and would appear consistent with the existing, taller SCE Coso-Kramer 220 kV line that would also parallel the majority (14.5 miles) of the 18.5-mile segment. Therefore, when considered within the existing structural context, the resulting cumulative impact would be less than significant.

Impact AE-5: Create a new source of substantial light or glare that would adversely affect day or nighttime views.

LESS THAN CUMULATIVELY CONSIDERABLE. As described in the Proposed Project analysis (Section 3.2), most construction activities would take place during daylight hours, and no new permanent lighting is proposed for Proposed Project operation or maintenance. Also, to reduce the potential for glare impacts from the Proposed Project, SCE has committed to the use of non-specular conductors and galvanized steel poles with a dulled finish to replace the existing components. Therefore, cumulatively considerable aesthetics impacts are not expected to occur in combination with relevant cumulative projects, and the resulting cumulative impact would be less than significant.

5.3.3. Agriculture and Forestry Resources

As discussed in Section 3.3, the Proposed Project would install three new structures and remove four existing structures (with slightly larger footprints than the new structures) in areas designated as Unique Farmland and would involve construction and new structures in areas that are zoned for agricultural use. The Proposed Project would install one structure in Fremont Cottonwood Forest vegetation community. The Proposed Project would interfere with active agricultural operations where the transmission line would be installed across an active agricultural field and construction could damage infrastructure, but the impact would be less than significant with mitigation.

The Proposed Project would not impact lands under a Williamson Act contract and would not involve other changes in the environment that would convert Farmland to nonagricultural use; therefore, no cumulative impact on Williamson Act contracts or conversion of Farmland to a nonagricultural use due to other changes in the environment would occur. The Proposed Project would have no impact on forest land, timberland, or a Timberland Production zone and thus no cumulative impact on areas zoned forest land, timberland or a Timberland Production Zone would occur.

5.3.3.1. Geographic Scope

The geographic scope of analysis for agriculture is within one mile of the Proposed Project.

5.3.3.2. Cumulative Analysis

Impact AF-1: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural use.

LESS THAN CUMULATIVELY CONSIDERABLE. Unique Farmland is located within 1 mile of Segment 1 of the Proposed Project and Prime Farmland and Unique Farmland are located within 1 mile of Segment 3S of the Proposed Project. Cumulative projects such as the Control-Silver Peak Transmission Line, Longboat Solar, 66 Energy Project, and 33 National Trails Solar Facility could impact FMMP designated agricultural land. The cumulative impact from development of multiple projects on Prime Farmland, Unique Farmland, or Farmland of Statewide Importance agricultural land would be potentially significant.

The Proposed Project would result in 4.5 acres of temporary disturbance and would install a total of three structures while removing four existing structures (with slightly larger footprints than the new structures) within FMMP designated Unique Farmland. The temporary disturbance of Unique Farmland during construction would not convert the Farmland a nonagricultural use as the area would be returned to its existing use after construction is complete; therefore, impacts would not be considered cumulatively consideration. Furthermore, the permanent impacts from three new structures in Unique Farmland would be offset by removal of a greater number of structures within Unique Farmland, thereby resulting in a slight increase of Unique Farmland. In summary, the Proposed Project's incremental contribution to a cumulative impact on Farmland would be less than cumulatively considerable.

Impact AF-2: Conflict with existing zoning for agricultural use or a Williamson Act contract.

LESS THAN CUMULATIVELY CONSIDERABLE. Areas zoned as extensive agriculture and limited agriculture within Kern County and areas zoned for agricultural use in San Bernardino County are located within 1 mile of the Proposed Project in segments 1, 2, 3N, and 3S. The California Broadband Cooperative Haiwee North Optical Line, Inyokern Solar Project, Overnight Solar Project Jazmin Solar Energy Project, Kramer South Solar Farm, California City Project are located in or near areas zoned for agricultural use. The cumulative development of the projects would potentially convert agricultural zoned land to nonagricultural uses and may result in a cumulatively significant impact.

The Proposed Project would temporarily disturb areas zoned as agricultural use but would not convert areas of temporary construction to a nonagricultural use. While the Proposed Project would install structures in areas zoned for agricultural use, agricultural activities would remain in areas surrounding the new structures and the impact of the new structures would be offset by removal of the existing structures. As a result, the Proposed Project impact on areas zoned for agricultural use would be less than cumulatively considerable.

Impact AF-6: Substantially interfere with active agricultural operations, or convert land used for active agricultural operations to an incompatible use.

LESS THAN CUMULATIVELY CONSIDERABLE WITH MITIGATION. There are agricultural operations in proximity to Segment 1 of the Proposed Project. Cumulative projects such as the Control-Silver Peak Transmission Line could also affect active agricultural operations, and the cumulative impact of these projects in combination with the Proposed Project could be potentially significant.

Like the project cited above, the Proposed Project could damage irrigation infrastructure and crops during construction and could affect operation of the irrigation infrastructure, which could affect the ability to maintain agricultural use. As identified in Section 3.3, the proposed Project would implement Mitigation Measure AF-6a, which requires SCE to identify crops and irrigation infrastructure where construction access roads and work areas are located within active agricultural areas, and to avoid them to the extent possible. SCE would be required to coordinate the timing of overhead conductor installation activities with

farm operators to reduce the potential for disrupting the watering schedule. SCE would also be required to compensate owners for crops that may be impacted by construction activities, as well as repair or replace any irrigation infrastructure that is damaged by construction activities. Mitigation Measure AF-6b requires SCE to avoid operational conflicts with agricultural irrigation infrastructure. With implementation of Mitigation Measure AF-6a and Mitigation Measure AF-6b, the Proposed Project's impact on existing agricultural operations would be negligible; therefore, the proposed Project's incremental contribution to cumulative impacts would be less than significant.

5.3.4. Air Quality

As discussed in Section 3.4, the Proposed Project would have a less than significant impact on conflicting with or obstructing the implementation of the applicable air quality plans. The Proposed Project would have less than significant impacts with mitigation from a cumulatively considerable net increase of criteria pollutant for which the project region is in non-attainment under Federal or State ambient air quality standards. The Proposed Project would have a less than significant impact with mitigation on exposing sensitive receptors to substantial pollutant concentrations. The Proposed Project would have a less than significant impact on generating other emissions that would adversely affect a substantial number of people.

5.3.4.1. Geographic Scope

The geographic area of analysis for cumulative air quality impacts is the Great Basin Valleys Air Basin and the Mojave Desert Air Basin because the majority of Proposed Project emissions and cumulative project emissions would be confined to these regions. Cumulative effects may also be experienced within the immediate vicinity of the sources.

Section 5, Cumulative Projects, discusses and lists relevant similar projects within the geographic vicinity of the Proposed Project. These include approved and planned development projects along and near the proposed Project alignment. Projects within the region considered for the cumulative impact analysis include a variety of activities, including development related to transmission facilities, transportation projects, managing BLM recreation, recreational projects, fencing, geothermal projects, quarry projects, water resource projects, solar projects, and an oil and gas pipeline.

5.3.4.2. Cumulative Analysis

Cumulative air quality impacts would include the effects of the cumulative projects identified above in Table 5-2. Emissions from cumulative projects would contribute to the air quality impacts when cumulative project emissions occur concurrently with those of the proposed Project and near sensitive receptors. The potential for cumulative air quality impacts would be greatest for any sensitive receptors located in close proximity to two or more work sites that are active at the same time. The analysis of Impact AQ-1 in Section 3.4 demonstrates that the proposed Project would conform with applicable air quality management plans.

not include any notable sources of odors, AQ-1 and AQ-4 would not have the potential to be cumulatively considerable. The analysis of Project impacts from Impact AQ-2 considers the cumulative effects of past projects as contributing to existing nonattainment conditions and addresses whether the Project would result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is in nonattainment under an applicable federal or state ambient air quality standard. GBUAPCD is in non-attainment for state ozone and PM, and EKAPCD and MDAQMD are in nonattainment for state and federal ozone and PM10. The GBUAPCD, EKAPCD, and MDAQMD provide project-level thresholds of significance for pollutants in which they are in nonattainment. Construction emissions from the Proposed Project would not exceed GBUAPCD, EKAPCD, and MDAQMD thresholds with the implementation of Mitigation Measure AQ-2a and Mitigation Measure AQ-2b, and as such, the incremental contribution of the Proposed Project construction emissions to the cumulative air quality impacts would not be cumulatively considerable.

In accordance with CEQA Guidelines 15130(a)(1), no further analysis is required regarding cumulative impacts with respect to criteria pollutants.

Cumulative projects that may be located within one mile of the Proposed Project and are considered for potential cumulative impacts related to air quality include the following:

- 1-1: SCE Control Silver Peak Subtransmission Line
- 1-2: Manzanar Pavement Project
- 1-4: Owens River Water Trail Project
- 1-5: Cartago Wildlife Area Fence Extension Project
- 1-6: LADWP Right of Way (ROW) Dust Mitigation Project
- 1-7: California Broadband Cooperative (CBC) Haiwee North Optical Line
- 1-8: North Haiwee Dam No. 2
- 1-9: CBC Haiwee South Optical Line
- 1-12: Big Pine Wastewater Treatment Facility Expansion
- 1-13: Fish Springs Pavement Project
- 2-1: Kramer South Solar Farm*[4]
- 2-2: Ridgecrest-Inyokern Pavement Project
- 2-3: SCE California City Project
- 3N-1: Overnight Solar Project
- 3N-3: Jazmin Solar Energy Project
- 3S-1: Aratina Gen-Tie Project
- 3S-2: Lenwood Ave EV Charging and Logistic Facility
- 3S-4: Solar 66 Energy Project
- 3S-5: SCE Accelerate Substation

Impact AQ-3: Expose sensitive receptors to substantial pollutant concentrations.

LESS THAN CUMULATIVELY CONSIDERABLE WITH MITIGATION. Project would implement Mitigation Measure AQ-2a to reduce and control VOC and NOx emissions with Tier 4 Engines and Mitigation Measure AQ-2b for fugitive dust control during construction, which would reduce construction-related emissions to be below GBUAPCD, EKAPCD, and MDAQMD thresholds. The Proposed Project's construction emissions would be short-term and dispersed across the region and would not be anticipated to occur at rates causing substantial localized pollutant concentrations for sensitive receptors. Because construction at each location along the Project alignment would be temporary and intermittent and unlikely to directly overlap with construction from other projects occurring simultaneously at any one location near a sensitive receptor, construction emissions from cumulative projects would not be expected to combine with Proposed Project in a manner that would expose sensitive receptors to substantial pollutant concentrations. As such, the duration of exposure at any one sensitive receptor along the proposed Project would be limited, and the potential for the incremental contribution of emissions from the proposed Project that any one sensitive receptor would be exposed to would not be cumulatively considerable. With implementation of these Mitigation Measures AQ-2a and AQ-2b, the Proposed Project would not result in cumulatively considerable effects to air quality. No additional mitigation is required, and cumulative impacts would be less than significant.

5.3.5. Biological Resources

Cumulative effects for biological resources include both plant and wildlife species, sensitive habitats, wildlife corridors, and jurisdictional waters. Cumulative impacts analyses must consider incremental effects from cumulative projects to the distribution, habitat availability, designated critical habitat, local rarity or commonness, and likely responses to projects' effects that when considered together, may result in cumulatively considerable impacts. The Project has the potential to contribute to cumulative effects to biological resources starting with the initiation of on-site activities and continuing throughout operations and maintenance.

As the number of transmission line projects, renewable energy projects, water and gas pipeline projects, geothermal projects, and other development and land use changes increase in the region, the cumulative

[4] Projects with asterisks are likely to be located within approximately 0.5 miles of a material yard or helicopter landing zone.

impacts to biological resources, such as habitat degradation and loss, and species displacement, also increase. This analysis considers the current and foreseeable future projects identified in the cumulative scenario, as presented in Section 5.2.

This analysis presumes that biological resources APMs (Section 3.5.3, Table 3.5-1) and mitigation measures (Section 3.5.5, Table 3.5-2), would be implemented.

5.3.5.1. Geographic Scope

The geographic extent of the cumulative analysis covers the vicinity of the Project alignment because it consists of similar habitats and encompasses the ranges of species that would be directly or indirectly affected by the Proposed Project and other projects in the vicinity (Figure 5-1a). In Segment 1, other projects considered are located within 5 miles of the Proposed Project, within the narrow corridor of the Owens Valley, which is constricted by the Sierra Nevada Mountains to the west and the White and Inyo Mountains to the east. In Segments 2, 3N, and 3S, other projects considered are located up to 30 miles away as some of them are transmission or pipeline projects that span many miles, similar to the Proposed Project, and they are located within the larger Mojave desert area, which consists of similar habitats and species.

5.3.5.2. Cumulative Analysis

Impact BIO 1: 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 Wildlife or U.S. Fish and Wildlife Service.

LESS THAN CUMULATIVELY CONSIDERABLE WITH MITIGATION. Special-status plants and wildlife, as presented in Section 3.5.1, are present along the entirety of the Project alignment and throughout the Owens Valley and Mojave Desert, therefore all cumulative projects listed in Table 5-2 (Cumulative Projects) could contribute to cumulative impacts. Based on the proximity of the cumulative projects to the Proposed Project, the cumulative projects are expected to impact similar habitats and special-status plants and wildlife as the Proposed Project, as described in detail in Sections 3.5.1.3, 3.5.1.4, and 3.5.1.6. These projects would have the potential to result in direct disturbance, injury, or mortality of special-status species or disturbance, degradation, modification, or removal of habitat.

The cumulative projects have the potential to disturb, modify, or remove habitat during ground disturbing activities. Ground disturbance may result in trimming, cutting, crushing, burying or uprooting vegetation, damaging roots, or disturbing the existing seed bank of native habitats. Soils may be affected, which may result in subsequent erosion, compaction, altered runoff, loss of soil nutrients, and introduction and spread of non-native weeds. Fugitive dust from construction activities may inhibit photosynthesis and impact plant growth. Habitats may be contaminated with herbicides and equipment fuels and oils.

Individual special-status wildlife species may be directly and indirectly impacted by the cumulative projects. Ground disturbance and clearing would impact habitat used by wildlife for shelter, nesting and reproduction, and foraging. Habitat degradation could result in excluding wildlife from portions of their territories. Wildlife that flush from cover during site clearing could be at increased risk of predation and crushing by vehicles and equipment. Construction equipment and site conditions could present hazards to wildlife, such as collisions, vehicle strikes, entrapment, drowning, or encounters with hazardous chemicals, which may result in injury or mortality. Wildlife may be indirectly impacted by increased noise, dust, vibration, and human presence from cumulative projects, which may alter normal behaviors or cause wildlife to vacate and/or avoid otherwise suitable habitat nearby.

The Proposed Project incorporates a number of APMs, as presented in Section 3.5.3.1 (Table 3.5-1), into the project design to minimize and avoid impacts to habitat and special-status species and mitigation measures, as identified in Section 3.5.4 (Table 3.5-2), which would reduce significant impacts to less than significant levels.

For all other protected species impacted by the Proposed Project, SCE would also be required to comply with conditions included in any ITPs issued from CDFW and/or USFWS. Mitigation measures are also recommended to ensure that effects are less than significant. The Proposed Project would implement Mitigation Measures BIO-1a through BIO-1n, AQ-2b, and HW-1a, as described in Section 3.5.4 and 3.5.5.

While APMs and mitigation measures are specific to the Proposed Project, it is expected that the cumulative projects would also be subject to environmental laws and permitting, including CEQA and/or NEPA and federal and/or State Endangered Species Acts (Section 3.5.2), which would require the cumulative projects to obtain relevant permits, comply with agency issued permit conditions, and implement similar measures to minimize and avoid impacts to special-status species and their habitat.

The Proposed Project would result in temporary impacts to habitat, plants, and wildlife during construction and disturbed habitats would be restored. Since the Proposed Project is an in-kind replacement of the existing subtransmission lines with new, modern subtransmission lines, impacts would occur within ROW areas and the Proposed Project would generally result in no net permanent loss of habitat. Most regular operations and maintenance of overhead facilities would be performed from existing access roads with no surface disturbance. The Project would not create a barrier to movement, where most birds would be expected to fly over or under the power lines, while ground dwelling wildlife would be expected to move freely under the lines or move around work areas. Compensatory mitigation would offset any permanent impacts. Therefore, impacts resulting from the Proposed Project would not significantly add to the impacts of the cumulative projects.

Furthermore, in the event that the Proposed Project's California City Option is selected, co-locating the California City Project with the Proposed Project's facilities would reduce the California City Project construction and operational footprints, thereby reducing the cumulative impacts to sensitive biological resources.

By complying with permit conditions and with implementation of APMs and mitigation measures, the Proposed Project's incremental contribution would not result in cumulatively considerable effects to special status species. Therefore, cumulative impacts would be less than significant.

Impact BIO-2: 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 Wildlife or U.S. Fish and Wildlife Service.

LESS THAN CUMULATIVELY CONSIDERABLE WITH MITIGATION. Riparian habitats and Sensitive Natural Communities are present along the Owens River and Mojave River, and throughout the Owens Valley and Mojave Desert, therefore all cumulative projects listed in Table 5-2 (Cumulative Projects) could contribute to cumulative impacts. These projects would have the potential to result in disturbance, degradation, modification, or removal of these habitats.

Based on the proximity of the cumulative projects to the Proposed Project, the cumulative projects are expected to impact similar habitats and sensitive natural communities as the Proposed Project, as described in detail in Sections 3.5.1.3 and 3.5.1.6.

As discussed previously for the cumulative projects under Impact BIO-1, the cumulative projects would result in direct and indirect impacts to habitat, including riparian and sensitive habitats. Ground disturbance could modify or remove habitat and vegetation may be trimmed, cut, crushed, buried or uprooted, roots could be damaged, or the existing seed bank of native habitats could be disturbed. Soils could be

affected by ground disturbance, which may result in subsequent erosion, compaction, altered runoff, loss of soil nutrients, and introduction and spread of non-native weeds. Fugitive dust during construction of cumulative projects may inhibit photosynthesis and impact plant growth. Habitats may be contaminated with herbicides and equipment fuels and oils.

The Proposed Project incorporates APMs, as presented in Section 3.5.3.1 (Table 3.5-1), into project design to minimize and avoid impacts to riparian and sensitive habitats. APMs that reduce the impacts to riparian habitat and sensitive natural communities include APM BIO-RES-1 (Develop and Implement Habitat Restoration Plan (HRP)), APM BIO-RES-2 (Develop Invasive Plant Management Plan (IWMP)), and APM HAZ-1 (Prepare a Hazardous Materials and Waste Management Plan).

SCE would also be required to comply with permits to maintain air and water quality and to implement specific requirements to minimize impacts to habitat from fugitive dust, runoff, erosion, and sedimentation in and around work areas. Mitigation measures are recommended to ensure that effects are less than significant. The Proposed Project would implement mitigation measures BIO-1a through BIO-1d, AQ-2b, and HW-1a as described in Sections 3.5.4 and 3.5.5.

While these APMs and mitigation measures are specific to the Proposed Project, it is expected that the cumulative projects would also be subject to environmental laws and permitting, including CEQA and/or NEPA (Section 3.5.2), which would require the cumulative projects to obtain relevant permits, comply with agency issued permit conditions, and implement similar measures to minimize and avoid impacts to riparian habitats and sensitive natural communities.

The Proposed Project would result in temporary impacts to vegetation and habitat. Since the Proposed Project is an in-kind replacement of the existing subtransmission lines with new, modern subtransmission lines, impacts would occur within ROW areas and the Proposed Project would generally result in no net permanent loss of habitat. Compensatory mitigation would offset any permanent impacts. Therefore, impacts resulting from the Proposed Project would not significantly add to the impacts of the cumulative projects.

By complying with permit conditions and with implementation of mitigation measures, and considering the permit and mitigation requirements for the cumulative projects, the Proposed Project would not result in cumulatively considerable effects to riparian habitat or sensitive natural communities. Therefore, cumulative impacts would be less than significant.

Impact BIO-3: Substantially affect jurisdictional wetlands, waters of the U.S., or waters of the state.

LESS THAN CUMULATIVELY CONSIDERABLE WITH MITIGATION. Potential jurisdictional waters are present along the entirety of the Proposed Project alignment (Section 3.5.1.5). All cumulative projects listed in Table 5-2 (Cumulative Projects) could contribute to cumulative impacts as jurisdictional waters are present along the Owens River; at surface waters in Little Lake and Haiwee Reservoir; in emergent freshwater wetlands, scrub-shrub wetlands, and forested/woodland wetlands; along the Mojave River; and throughout the Mojave Desert in non-vegetated rivers, streams, and washes that consist of ephemeral waters. These projects could result in disturbance, degradation, modification, or filling of potentially jurisdictional waters.

The cumulative projects could result in direct and indirect impacts to jurisdictional waters, which may include disturbance and compaction of soils; altered runoff and site hydrology; filling, rutting, sedimentation, or erosion in and around surface waters; direct crushing, burial, or uprooting of wetland vegetation; disturbance of seed banks and underground dormant plants; loss of plant nutrients; incidental introduction and spread of invasive weeds that reduce habitat quality; spillage of hazardous materials and contamination of waters and habitats; and introduction and suspension of sediment in waters, which would reduce water quality in the vicinity of projects and downstream.

The Proposed Project incorporates APMs, as presented in Section 3.5.3.1 (Table 3.5-1), into project design to minimize and avoid impacts to riparian and sensitive habitats. APMs that reduce the impacts to jurisdictional wetlands and waters include APM BIO-RES-1 (Develop and Implement Habitat Restoration Plan (HRP)), APM BIO-RES-2 (Develop Invasive Plant Management Plan (IWMP)), APM HAZ-1 (Prepare a Hazardous Materials and Waste Management Plan), and APM BIO-WET-1 (Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats).

SCE would be required to comply with conditions included in permits from USACE, CDFW, and RWQCB to maintain water quality and to implement specific requirements to minimize impacts to wetlands from runoff, erosion, and sedimentation in and around work areas. Permits would define compensation ratios for unavoidable impacts to jurisdictional waters. Mitigation measures are recommended to ensure that effects are less than significant. The Proposed Project would implement Mitigation Measures BIO-1a through BIO-1d, AQ-2b, and HW-1a, as described in Sections 3.5.4 and 3.5.5.

While these APMs and mitigation measures are specific to the Proposed Project, it is expected that the cumulative projects would also be subject to environmental laws and permitting, including but not limited to CEQA and/or NEPA, Clean Water Act, California Porter-Cologne Water Quality Control Act, and California Fish and Game Code Sections 1600-1616 (Section 3.5.2). These laws and regulations would require the cumulative projects to obtain relevant permits, comply with agency issued permit conditions, and implement similar measures to minimize and avoid impacts to jurisdictional waters and wetlands.

The Proposed Project would result in temporary impacts to jurisdictional waters. Since the Proposed Project is an in-kind replacement of the existing subtransmission lines with new, modern subtransmission lines, impacts would occur within ROW areas and the Proposed Project would generally result in no net permanent loss of habitat, including jurisdictional waters. Furthermore, compensatory mitigation would offset any permanent impacts. Therefore, impacts resulting from the Proposed Project would not significantly add to the impacts of the cumulative projects.

By complying with permit conditions and with implementation of mitigation measures, and considering the permit and mitigation requirements for the cumulative projects, the Proposed Project would not result in cumulatively considerable effects to jurisdictional wetlands, waters of the U.S., or waters of the state. Therefore, cumulative impacts would be less than significant.

Impact BIO-4: 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.

LESS THAN CUMULATIVELY CONSIDERABLE WITH MITIGATION. Suitable habitat for wildlife movement and migration, as described in Section 3.5.1.3, and a variety of wildlife species, as described in Section 3.5.1.4, are present along the entirety of the Project alignment, which is primarily in an undeveloped landscape. Similarly, suitable wildlife movement habitat and wildlife species are present throughout the Owens Valley and Mojave Desert, therefore all cumulative projects listed in Table 5-2 (Cumulative Projects) could contribute to cumulative impacts. These projects would have the potential to result in disturbance, degradation, modification, or removal of movement and migration habitat. Construction of the projects may result in built facilities or structures that could impede wildlife movement or interfere with established movement patterns.

Cumulative projects could result in temporary disruption of movement by resident or migratory wildlife or wildlife behavior due to increased noise, vibration, light, dust, equipment, human presence, vehicle traffic, and opportunistic predators in work areas. Habitat used for wildlife movement could be temporarily or permanently impacted by ground disturbance and clearing, degraded by spread of non-native invasives, or polluted or contaminated by use of equipment fuels. Cumulative projects that construct built

facilities, encompass large areas, incorporate fencing, or add or improve roads could result in permanent barriers to wildlife movement.

The Proposed Project incorporates APMs, as presented in Section 3.5.3.1 (Table 3.5-1), into project design to minimize and avoid impacts to wildlife movement. SCE would also be required to comply with conditions included in ITPs from CDFW and USFWS for threatened and endangered species and candidates for listing. Mitigation measures are recommended to ensure that effects are less than significant. The Proposed Project would implement Mitigation Measures BIO-1a through BIO-1n, AQ-2b, and HW-1a, as described in Sections 3.5.4 and 3.5.5.

While these APMs and mitigation measures are specific to the Proposed Project, it is expected that the cumulative projects would also be subject to environmental laws and permitting, including but not limited to CEQA and/or NEPA, federal and/or State Endangered Species Acts, and the Migratory Bird Treaty Act (Section 3.5.2). These laws and regulations would require the cumulative projects to obtain relevant permits, comply with agency issued permit conditions, and implement similar measures to minimize and avoid impacts to riparian habitats and sensitive natural communities.

Since the Proposed Project is an in-kind replacement of the existing subtransmission lines with new, modern subtransmission lines, impacts would occur in dispersed and discrete areas; therefore, terrestrial wildlife connectivity conditions would be similar to existing conditions, and the Proposed Project would not create a long-term barrier to movement. Most birds would be expected to fly over or under the power lines, while ground dwelling wildlife would be expected to move freely under the lines or move around work areas. Compensatory mitigation would offset any permanent impacts to wildlife and movement habitat. Therefore, impacts resulting from the Proposed Project would not significantly add to the impacts of the cumulative projects.

Birds migrating near the project area or flying locally, or birds flying near other cumulative projects involving subtransmission or gen-tie lines may collide with the lines, which is discussed in detail in Impact BIO-6.

By complying with permit conditions and with implementation of mitigation measures, and considering the permit and mitigation requirements for the cumulative projects, the Proposed Project would not result in cumulatively considerable effects to wildlife movement. Therefore, cumulative impacts would be less than significant.

Impact BIO-5: Cause take of protected nesting birds, including nestlings or eggs, through direct impacts to the nest or substantial nearby disturbance which could cause nest abandonment.

LESS THAN CUMULATIVELY CONSIDERABLE WITH MITIGATION. Suitable nesting bird habitat, as described in Section 3.5.1.3, and numerous bird species, as described in Section 3.5.1.4, are present along the entirety of the Project alignment, which is primarily in an undeveloped landscape. Similarly, suitable nesting habitats and a variety of bird species are present throughout the Owens Valley and Mojave Desert, therefore all cumulative projects listed in Table 5-2 (Cumulative Projects) could contribute to cumulative impacts. These projects would have the potential to result in loss of nesting habitat, active nests or burrows, eggs and nestlings, foraging habitat, food sources, and prey items due to vegetation clearing and ground disturbance. Cumulative project could also cause disruption of nesting and foraging behavior due to increases in human presence, traffic, noise, vibration, dust, and opportunistic predators.

Cumulative projects would result in loss of nesting habitat, and if constructed during the nesting season, could result in destruction of bird nests, including eggs or nestling birds. Some birds could nest in the project areas during construction, nesting on the ground, on built structures, on construction trailers, or close to or on idle vehicles or equipment left overnight or during long absences. In areas where construction may be phased, birds may quickly use these features as nest sites between active construction phases.

However, the Proposed Project incorporates APMs, as presented in Section 3.5.3.1 (Table 3.5-1), into the project to minimize and avoid impacts to wildlife. Specifically, APM BIO-AVI-1 requires a Nesting Bird Management Plan (NBMP) in coordination with CPUC, BLM, CDFW, and USFWS, which would avoid potential for unauthorized take. Pre-construction nest surveys during the breeding season (January 1 through August 31), demarcation of nest buffers, monitoring of nests, and coordination with resource agencies on buffer modifications would avoid destruction and disturbance of nests and direct mortality or injury of birds, nestlings, or eggs.

SCE would also be required to comply with conditions included in ITPs from CDFW and USFWS for threatened and endangered species and candidates for listing. Mitigation measures are recommended to ensure that effects are less than significant. The Proposed Project would implement Mitigation Measures BIO-1a through BIO-1f and BIO-1n, AQ-2b, and HW-1a (Sections 3.5.4 and 3.5.5).

While these APMs and mitigation measures are specific to the Proposed Project, it is expected that the cumulative projects would also be subject to environmental laws and permitting, including but not limited to CEQA and/or NEPA, federal and/or State Endangered Species Acts, the Migratory Bird Treaty Act, and California Fish and Game Code Sections 3503 and 3513 (Native Birds) (Section 3.5.2). These laws and regulations would require the cumulative projects to obtain relevant permits, comply with agency issued permit conditions, and implement similar measures to minimize and avoid impacts to nesting birds.

While construction of the Proposed Project may result in the temporary loss of nesting habitat, impacts to vegetation would be in discrete, distributed locations, and would not disturb large contiguous areas of habitat. Since the Proposed Project is an in-kind replacement of the existing subtransmission lines with new, modern subtransmission lines, impacts would occur within ROW areas and the Proposed Project would generally result in no net permanent loss of habitat. Compensatory mitigation would offset any permanent impacts to habitat. Therefore, impacts resulting from the Proposed Project would not significantly add to the impacts of the cumulative projects.

By complying with permit conditions and with implementation of mitigation measures, and considering the permit and mitigation requirements for the cumulative projects, the Proposed Project would not result in cumulatively considerable effects to nesting birds. Therefore, cumulative impacts would be less than significant.

Impact BIO-6: Create a substantial collision and electrocution risk for birds or bats.

LESS THAN CUMULATIVELY CONSIDERABLE WITH MITIGATION. Collision with subtransmission lines and risk of electrocution would primarily occur during operations and maintenance of transmission line projects and renewable energy projects, after towers, transmission lines, and electrical infrastructure are installed and operational. Birds migrating near the project area or flying locally, or birds flying near other cumulative projects involving subtransmission or gen-tie lines may collide with the lines. Numerous bird and bat species, as described in Section 3.5.1.4, are present along the entirety of the Project alignment, which is primarily in an undeveloped landscape. Similarly, a variety of bird and bat species are present throughout the Owens Valley and Mojave Desert.

Cumulative projects listed in Table 5-2 (Cumulative Projects) that are related to subtransmission lines or renewable energy development could contribute to cumulative impacts. These could include the SCE Projects listed in Section 5.2.1, and the following projects described in Table 5-2:

- Segment 1: 1-1, SCE Control Silver Peak Subtransmission Line
- Segment 2: 2-1 Kramer South Solar Farm; 2-3 SCE California City Project
- Segment 3N: 3N-1 Overnight Solar Project; 3N 3 Jazmin Solar Energy Project
- Segment 3S: 3S-1 Aratina Gen-Tie Project; 3S-3 Solar 33 National Trails Solar Facility; 3S-4 Solar 66 Energy Project; 3S-5 SCE Accelerate Substation

These projects would have the potential to result in bird or bat collision with or electrocution from transmission lines. As described in detail in Section 3.5.3.3 (Impact BIO-6), collision occurs when birds or bats fly into overhead wires. Electrocution occurs when a bird simultaneously contacts two energized phase conductors or an energized conductor and grounded hardware. This happens most frequently when a large bird attempts to perch on a transmission structure with insufficient clearance between these elements. Ongoing studies have shown that bats are susceptible to collisions with moving structures such as wind turbines, but infrequently collide with stationary structures (WEST, 2020). However, bat mortality could occur if individuals became trapped in other project equipment or infrastructure.

Birds in the vicinity of the cumulative project built facilities may be at risk of injury from collision with or electrocution from the transmission lines; however, for projects where transmission lines are upgraded or replaced, these lines would not introduce a new hazard in the project vicinity.

For the Proposed Project, SCE would be required to comply with conditions included in ITPs from CDFW and USFWS for threatened and endangered species and candidates for listing. Mitigation measures are recommended to ensure that effects are less than significant. The Proposed Project would implement Mitigation Measure BIO-6a (Bird and Bat Collision) to ensure that transmission lines are marked and sufficient spacing between lines is maintained, in accordance with APLIC guidelines. The recommendations from APLIC are primarily focused on avoiding and minimizing impacts to birds, however the recommendations and best practices would also benefit bats.

While mitigation measures are specific to the Proposed Project, it is expected that the cumulative projects would also be subject to environmental laws and permitting, including but not limited to CEQA and/or NEPA, federal and/or State Endangered Species Acts, and the Migratory Bird Treaty Act (Section 3.5.2). These laws and regulations would require the cumulative projects to obtain relevant permits, comply with agency issued permit conditions, and implement similar measures to minimize and avoid impacts to birds and bats from collision with and electrocution from transmission lines.

The Proposed Project would upgrade and replace existing facilities (e.g., transmission structures and conductors) without adding to the overall numbers of towers or conductors. The Proposed Project would not introduce new transmission facilities into locations where none existed previously; however, the heights of transmission lines would increase as described in Section 3.5.3.3. Impacts resulting from the Proposed Project would not significantly add to the impacts of the cumulative projects.

By complying with permit conditions and with implementation of mitigation measures, and considering the permit and mitigation requirements for the cumulative projects, the Proposed Project would not result in cumulative considerable effects on creating a collision and electrocution risk for birds or bats. Therefore, cumulative impacts would be less than significant.

Impact BIO-7: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

LESS THAN CUMULATIVELY CONSIDERABLE. All cumulative projects are subject to environmental review and approval by federal, State, or local agencies. During that process, the agencies review the applicable polices and ensure that each project complies with policies and ordinances, and impose conditions as appropriate to ensure compliance. Therefore, there is no significant cumulative conflict with local policies and ordinances.

Further, pursuant to General Orders 131-D and 131-E, the Proposed Project is not subject to local land use authority because the CPUC has exclusive jurisdiction over the siting, design and construction of electric power line projects constructed by public utilities subject to CPUC jurisdiction. Section 88.01.030 (Exempt Activities) of the San Bernardino County Development Code states that the provisions of the

County's Plant Protection and Management ordinances (Chapter 88.01) shall not apply to the "removal [of regulated trees or plants] by a public utility subject to jurisdiction of the Public Utilities Commission."

The Proposed Project has no conflict with local policies or ordinances and would not result in cumulatively considerable effects to local policies or ordinances. Therefore, cumulative impacts would be less than significant.

Impact BIO-8: Conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.

LESS THAN CUMULATIVELY CONSIDERABLE WITH MITIGATION. Throughout the Owens Valley and Mojave Desert, where the cumulative projects are located, there are a variety of native and non-native vegetation and habitat types, numerous special-status plants and wildlife, perennial and ephemeral riparian habitats and jurisdictional waters, a diversity of sensitive natural communities, and suitable habitat and corridors for wildlife movement and migration. Therefore, all cumulative projects listed in Table 5-2 (Cumulative Projects) can be considered in the cumulative analysis for biological resources. Together, these projects have the potential to result in disturbance, degradation, modification, or removal of habitat, vegetation, and plants; disturbance, injury, or mortality of wildlife species; and degradation and contamination of waters. The construction and development attributable to past projects and relevant cumulative projects would disturb, degrade, and destroy biological resources, similar to the impacts of the Proposed Project. All cumulative projects are subject to environmental review and approval by federal, State, or local agencies. During that process, the agencies review each project to ensure they do not conflict with adopted habitat conservation plans and impose conditions as appropriate to ensure compliance. Therefore, there is no significant cumulative conflict with local, regional, or State habitat conservation plans.

The Proposed Project traverses the BLM DRECP Plan area. The DRECP identified detailed Conservation Management Actions (CMAs) that must be implemented on BLM-administered lands to avoid and minimize impacts to environmental resources, and that are incorporated into the CDCA and Bishop RMP (see Section 3.5.3.1). As part of SCE's Plan of Development (POD) submitted to the BLM, SCE included the APMs listed in Table 3.5-1 to comply with DRECP CMAs. No other Habitat Conservation Plans (HCP), Natural Community Conservation Plans (NCCP), or other approved local, regional, or State habitat conservation plans overlap the Proposed Project area. As the Proposed Project would result in no impact to this regards, the Proposed Project would have no effect to result in cumulative impacts.

The discussion for Impact BIO-1 through Impact BIO-6 indicates that the Proposed Project will incorporate APMs, acquire required permits from resource agencies, and implement recommended mitigation measures to minimize and avoid impacts. Overall, the disturbance footprint for the Proposed Project would be small, as it would replace existing subtransmission lines, impacts would occur within an existing ROW, and proposed tower construction sites would be in discrete and distributed locations. Compensatory mitigation would offset any permanent impacts. Although cumulative projects could worsen impacts, the contribution of the Proposed Project to cumulative impacts at each segment would not be cumulatively considerable.

While APMs and mitigation measures are specific to the Proposed Project, it is expected that the cumulative projects would also be subject to environmental laws and permitting, including but not limited to CEQA and/or NEPA (Section 3.5.2). These laws and regulations would require the cumulative projects to obtain relevant permits, comply with agency issued permit conditions, and implement similar measures to minimize and avoid impacts to biological resources.

By complying with permit conditions and with implementation of mitigation measures, and considering the permit and mitigation requirements for the cumulative projects, the Proposed Project would not result in cumulatively considerable effects to habitat conservation plans. Therefore, cumulative impacts would be less than significant.

5.3.6. Cultural Resources

As discussed in Section 3.6, the Proposed Project impacts would be significant and unavoidable due to direct effects on a large number of known archaeological resources. Eight mitigation measures are recommended to minimize significant impacts, but the Proposed Project would occur in an area of exceptionally high archaeological sensitivity and continuing cultural importance to descendant communities, specifically, California Native American tribes and communities that are traditionally and culturally affiliated with the geographic area of the Proposed Project. As a result, ground disturbance in this highly sensitive area with a high density of known resources has a high likelihood of impacting known archaeological resources and encountering significant buried deposits.

5.3.6.1. Geographic Scope

The geographic scope for the analysis of cumulative impacts on cultural resources is the entire Owens Valley (where Segment 1 of the Proposed Project is proposed), as well as the areas within about a 5 mile radius of the Project alignment in Segments 2, 3N, and 3S. The proximity of cultural resources to the Proposed Project would be of interest only to the extent that the proximity would considerably affect the context or integrity of the resource. This wide geographic scope is appropriate because it is likely that cultural resources similar to those in the Proposed Project's Area of Potential Impact (API) are present throughout this project region.

As discussed in further detail in Section 3.6, while the Proposed Project region is largely undeveloped, the Proposed Project traverses highly sensitive cultural resources areas with high densities of known resources. Projects whose effects are anticipated to combine with those of the Proposed Project are those that would require new ground disturbance in Segment 1, and especially those in proximity to Owens Lake. These include the Big Pine Wastewater Treatment Facility Expansion, the North Haiwee Dam No. 2, the Cartago Wildlife Area Fence Extension Project, the LADWP ROW Dust Mitigation Project (for Owens Lake), the Owens River Water Trail Project, and the SCE Control-Silver Peak Subtransmission Line Project.

Each of these projects results in ground disturbance, which if conducted in an area of sensitive cultural resources, has the potential to result in residual impacts that could combine with the Proposed Project. In the case of the Big Pine Wastewater Treatment Facility Expansion and Cartago Wildlife Area Fence Extension projects, both projects would occur within existing disturbed areas and the environmental analyses have indicated no presence of cultural resources and that no disturbance to known cultural resources would occur; therefore, these two projects are not anticipated to contribute to the cumulative scenario.

The remaining four projects, however, have the potential to contribute to the cumulative scenario. The North Haiwee Dam No. 2 project covers 393 acres and is anticipated to result in significant unavoidable impacts to cultural resources. The LADWP ROW Dust Mitigation Program (Owens Lake) is an ongoing dust mitigation effort over nearly 3,000 acres, including both new and previously disturbed areas; the selected alternative avoids 350 acres to protect significant cultural sites, and concludes with less than significant impact with mitigation for the selected alternative on cultural resources. The Owens River Water Trail Project proposes construction along 6.3 miles of river, disturbing 40 acres and impacts to cultural resources and considered less than significant with mitigation. Finally, the SCE Control-Silver Peak Subtransmission Line rebuild will disturb nearly 2,000 acres temporarily and 37 acres permanently within the same right-of-way, with significant and unavoidable impacts to cultural resources.

Impact CUL-1: Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines §15064.5.

SIGNIFICANT, CUMULATIVELY CONSIDERABLE AND UNAVOIDABLE, EVEN WITH MITIGATION. Construction of the Proposed Project has a high likelihood of impacting known archaeological resources and encountering significant buried deposits whose scientific and cultural values extend beyond the recoverable data alone.

As a result, the Proposed Project would have a significant impact prior to mitigation and require implementation of the following seven measures:

- Mitigation Measure CUL-1a (Retain a Cultural Resources Specialist)
- Mitigation Measure CUL-1b (Develop Data Recovery Plans for Known Historical Archaeological Resources)
- Mitigation Measure CUL-1c (Implement Cultural Resources Environmental Awareness Training)
- Mitigation Measure CUL-1d (Prepare and implement a Cultural Resources Management Plan; *supersedes APM CUL-1*)
- Mitigation Measure CUL-1e (Cultural Resources Monitoring)
- Mitigation Measure CUL-1f (Tribal Monitoring)
- Mitigation Measure CUL-1g (Remove Structures by Helicopter in Culturally Sensitive Areas)
- Mitigation Measure CUL-1h (Leave All Foundations in Place for Structures Removed in Culturally Sensitive Areas)
- Mitigation Measure CUL-1i (Avoid Disturbance Within Environmentally Sensitive Areas)
- Mitigation Measure CUL-1j (Mitigate Loss from Dismantling of Historic Era "Tower Line" Transmission Lines)
- Mitigation Measure CUL-1k (Avoid and/or Mitigate Loss from Direct Impacts to Historic Era Archaeological Resources Contributing to the Rand Mining District (P-15-007069))
- Mitigation Measure CUL-1l (Avoid Damage to Manzanar Airfield)

Although mitigation measures are proposed to reduce the Project's impact on cultural resources, these measures are not sufficient to fully avoid adverse effects. The Proposed Project's individual impacts would remain significant after mitigation.

Within the cumulative scenario, four reasonably foreseeable projects are identified in the geographic scope for cultural resources that proposed new ground disturbance. The Proposed Project also identifies a significant and unavoidable impact to historical resources, even after implementation of all feasible mitigation measures. Although mitigation would reduce the severity of the impact, it would not eliminate it. Therefore, when considered together with other projects that have significant cultural resource impacts, the Proposed Project's contribution is cumulatively considerable. As a result, the cumulative impact on historical resources is significant and unavoidable.

Impact CUL-2: Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to CEQA Guidelines §15064.5.

LESS THAN CUMULATIVELY CONSIDERABLE WITH MITIGATION. No unique archaeological resources, as defined in Public Resources Code section 21083.2(g), have been identified within the Direct API, and therefore, the Proposed Project is not expected to affect any known unique archaeological resources. However, the construction of the Proposed Project could potentially uncover and damage previously unknown buried archaeological resources. If such resources are later determined to be unique under CEQA, their disturbance could cause a substantial adverse change in their significance. Thus, absent mitigation, the Proposed Project could result in a significant impact if unknown buried unique archaeological resources were encountered. With the exception of the Owens River Water Trail Project, no unique archaeological resources have been identified by the cumulative projects. In the case of the Owens River Water Trail Project, several unique sites have the potential of being indirectly affected by the project; however, the project identifies several avoidance and minimization measures to reduce potential impacts to insignificant levels.

Nonetheless, similar to the Proposed Project, the identified cumulative projects may also disturb previously unknown buried unique archaeologist resources. Therefore, the Proposed Project effects may combine with those from the cumulative projects to result in cumulatively significant impacts. In the case of the Proposed Project, Mitigation Measures CUL-1a through CUL-1l (summarized above for Impact CUL-1)

would be implemented to evaluate and protect any unanticipated discoveries of unique archaeological resources, thereby reducing the Proposed Project's impacts to less than cumulatively considerable.

Impact CUL-3: Disturb human remains, including those interred outside of formal cemeteries.

LESS THAN CUMULATIVELY CONSIDERABLE WITH MITIGATION. Of the over 500 known archaeological resources within the Direct API, two are known to contain human remains and could be impacted by Proposed Project ground disturbing construction activities. In addition to the known resources that contain human remains, there is the possibility that previously unknown burials or human remains could be identified during the Proposed Project's ground disturbing construction activities. The disturbance of human remains would constitute a significant impact. However, the Proposed Project includes APM CUL-4 (Properly Treat Human Remains; see Table 3.6-10), which defines the process to be implemented should human remains be discovered. APM CUL-4 is considered adequate to ensure that impacts to unknown buried human remains would not be significant.

Of the identified cumulative projects, the Control-Silver Peak Project has one potential burial within the Project area that is undergoing testing to determine whether the deposits are significant and whether avoidance is possible. Otherwise, no other cumulative projects have identified impacts to human remains. However, the potential exists that given the areas' dense cultural history and the knowledge of many precontact village sites containing burials in the area unknown human remains may be encountered during the cumulative projects' ground disturbance activities. While the Proposed Project's individual impact would be less than significant, the Proposed Project effects may combine with those from the cumulative projects to result in cumulatively significant impacts.

As provided in Section 3.6, Mitigation Measures CUL-1a through CUL-1i would supplement APM CUL-4 to further ensure protection to human remains. Mitigation Measures CUL-1a through CUL-1i require worker environmental awareness training and development of a CRMP that outlines feasible measures and procedures to follow in the event of the discovery of unanticipated human remains. Additionally, these mitigation measures would require archaeological and tribal monitoring and reduce the level of ground disturbance in culturally sensitive areas. With the implementation of Mitigation Measures CUL-1a through CUL-1i, the Proposed Project's incremental impacts to known and unknown human remains would result in less than significant cumulative impacts.

5.3.7. Tribal Cultural Resources

As discussed in Section 3.7, consultation with Native American tribes resulted in the identification of a new and very large Tribal Cultural Resource: the Owens Valley Landscape (OVL). The OVL offers critical insight into California's historic landscape and the traditional lifeways of Native American communities. Under CEQA, the OVL qualifies as a TCR under Criterion 4 of the CRHR and due to its ongoing significance to local Native American communities.

Impact TCR-1: Cause a substantial adverse change in the significance of a tribal cultural resource that is either listed or eligible for listing in the California Register of Historical Resources, or is not listed or eligible for the register but has been identified as a tribal cultural resource by the CPUC.

SIGNIFICANT, CUMULATIVELY CONSIDERABLE, AND UNAVOIDABLE, EVEN WITH MITIGATION. As described in Section 3.7.1.6 (Summary of AB 52 Native American Consultation), one new TCR was identified during formal consultation: the OVL, which is situated within both the Direct and Indirect API. The OVL is not only a place of historic and archaeological value but also a living cultural landscape where traditional practices are actively maintained. The OVL offers critical insight into California's historic landscape and the traditional lifeways of Native American communities. It holds ongoing cultural, spiritual, and educational value, as local Native American groups continue to engage with the OVL to sustain and revitalize their cultural

practices. Any direct or indirect impacts within the OVL could adversely affect its integrity. These impacts would not only diminish its potential to yield important information about Native American heritage (Criterion 4 of the CRHR) but could disrupt the cultural and spiritual relationships that Native communities maintain with the land.

In addition to the potential impacts to the OVL, a known TCR, there is the potential for construction activities to result in the exposure of unknown buried archaeological resources that could be considered TCRs under CEQA, especially in Segment 1 (the most archaeologically dense area of the Proposed Project). If construction resulted in damage to unknown buried TCRs, as described in more detail below, a significant impact would occur.

The Proposed Project includes six APMs that SCE has proposed to address the protection of cultural and Tribal Cultural Resources (see Table 3.7-4). Of these, APMs TCR-1, TCR-2, and CUL-4 provide valuable protection to resources and allow for Native American engagement and monitoring. APMs CUL-1, CUL-2, and CUL-3 lack important details: they do not present performance standards, staff qualifications, defined roles and responsibilities, buffer zones, reporting standards, and other information that is needed to ensure that TCRs are adequately protected and managed.

Even with implementation of the applicable APMs, the Proposed Project would have a significant impact on TCRs prior to mitigation. Direct construction-related impacts to known and unknown buried TCRs would be reduced in severity with implementation of two mitigation measures (TCR-1a and TCR-1b) as well as the nine cultural resources measures (CUL-1a through CUL-1i).

Direct construction-related impacts to known and unknown buried TCRs would be reduced in severity with implementation of Mitigation Measures TCR-1a and TCR-1b (see Section 3.7, Tribal Cultural Resources for full text), and CUL-1a through CUL-1i (see Section 3.6, Cultural Resources for full text). The mitigation measures are summarized as follows:

- Mitigation Measure TCR-1a (Conceal Exposed Tribal Cultural Resources After Construction)
- Mitigation Measure TCR-1b (Provide Funding to Tribes for Research, Education, and Interpretation)
- Mitigation Measure CUL-1a (Retain a Cultural Resources Specialist)
- Mitigation Measure CUL-1b (Develop Data Recovery Plans for Known Historical Archaeological Resources)
- Mitigation Measure CUL-1c (Implement Cultural Resources Environmental Awareness Training)
- Mitigation Measure CUL-1d (Prepare and implement a Cultural Resources Management Plan; *supersedes APM CUL-1*)
- Mitigation Measure CUL-1e (Cultural Resources Monitoring)
- Mitigation Measure CUL-1f (Tribal Monitoring)
- Mitigation Measure CUL-1g (Remove Structures by Helicopter in Culturally Sensitive Areas)
- Mitigation Measure CUL-1h (Leave All Foundations in Place for Structures Removed in Culturally Sensitive Areas)
- Mitigation Measure CUL-1i (Avoid Disturbance Within Environmentally Sensitive Areas)

While these mitigation measures would substantially reduce the potential for unmitigated loss of information value, it is important to recognize that, from the perspective of consulting tribes, any disturbance to precontact archaeological resources, regardless of scientific intent, constitutes a contribution to a significant cumulative impact to the OVL as a TCR under CEQA. These impacts are not solely about data loss but also about the disruption of cultural and spiritual connections to the land.

As discussed, Mitigation Measures TCR-1a, CUL-1c, and CUL-1d (as described above) would continue to be implemented during project operation and would substantially reduce the potential for unmitigated loss of information value; however, the significant indirect impacts of the Proposed Project would still persist and continue to affect the integrity and cultural value of the OVL. Thus, the Proposed Project's impact would be significant and unavoidable.

Regarding the impact of past, present, and reasonably foreseeable future projects, the OVL has been subjected to adverse cumulative effects due to existing development, including Highway 395 and utility infrastructure (powerlines and water conveyance systems). The effects on this TCR have been increased by the numerous previous ground disturbing projects, as well as the cumulative projects within the Proposed Project region, which also propose new ground disturbance in an archaeologically sensitive area. Therefore, the cumulative impact of the Proposed Project on the OVL in combination with other past, present, and reasonably foreseeable future projects is cumulatively significant.

Although the recommended mitigation measures would reduce adverse effects to the extent feasible, the construction and operation of the Proposed Project would nonetheless result in a direct and indirect significant impact to the OVL. As such, the Project's incremental contribution to the impact to TCRs is cumulatively considerable, even after implementation of all feasible mitigation.

5.3.8. Energy

As discussed in Section 3.8, the Proposed Project would have a less than significant impact in regard to wasteful, inefficient, or unnecessary consumption of energy resources. The Proposed Project would have a less than significant impact on conflicting or obstructing a state or local plan for renewable energy or energy efficiency.

5.3.8.1. Geographic Scope

The geographic scope of the cumulative scenario-impact analysis for energy would span the State of California, including all projects listed in Table 5-2. This geographic scope of analysis is appropriate because the construction and operation activities associated with the Proposed Project, and all other cumulative projects have the potential to use energy resources temporarily or permanently.

5.3.8.2. Cumulative Analysis

Impact EN-1: Result in wasteful, inefficient, or unnecessary consumption of energy.

LESS THAN CUMULATIVELY CONSIDERABLE WITH MITIGATION. As discussed in Section 3.8, the Proposed Project would require short-term consumption of energy resources, primarily petroleum-based transportation fuels during construction to replace the existing 262-mile subtransmission lines located in Inyo, Kern, and San Bernardino counties. Development activities associated with the cumulative projects would require the use of fossil fuels, similar to the fossil fuel demands of the Proposed Project during construction. The incremental energy consumption from these projects may result in potentially significant cumulative impacts.

However, as analyzed in Section 3.8, the total quantity of the Proposed Project's construction fuel consumption is a fraction of the State's daily fuel production. Additionally, SCE would further reduce energy consumption by implementing APM-AQ-1 to properly maintain the equipment and use engines certified to current standards and APM-NOI-1 to limit the idling of equipment (APM-NOI-1). Further, APM AQ-1 is superseded by the more stringent Mitigation Measure AQ-2a, which controls off-road equipment emissions with the use of Tier 4 engines. With implementation of the proposed APM-NOI-1 and MM AQ-2a, the incremental effects of the proposed Project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resource and would not conflict with any plans for renewable energy or energy efficiency. Thus, the effects of the proposed Project related to energy resources and energy efficiency would not be cumulatively considerable. No additional mitigation is required.

Impact EN-2: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

NO IMPACT. As discussed in Section 3.8, the proposed Project would not conflict with any plans for renewable energy or energy efficiency. By remediating existing discrepancies and providing conductors with higher ratings, the Proposed Project would pose no conflict with California's plans to accommodate greater access to renewable resources. The proposed Project would neither conflict with nor obstruct state or local plans for renewable energy or energy efficiency. This would not result in a cumulatively significant impact. Therefore, no further discussion of the impact is required. (14 CCR §15130(a)(2).)

5.3.9. Geology, Soils, and Paleontology

As discussed in Section 3.9, the Proposed Project would not exacerbate any existing geologic and soil hazards. Therefore, the analysis is primarily focused on how existing environmental hazards would affect the risk of damage to the proposed structures. The Proposed Project would have a less than significant impact on exposing people or structures to adverse effects from rupture of a known earthquake fault, strong seismic ground shaking, or seismically induced ground failures or liquefaction. The Proposed Project would have a less than significant impact with mitigation on triggering substantial soil erosion or the loss of topsoil. The Proposed Project would have a less than significant impact on being located on a geological unit that is unstable or would be become unstable as a result of the Project, and result in or off-site landslide subsidence, liquefaction, or collapse. The Proposed Project would have no impact on being located on expansive soil, therefore in accordance with 14 CCR §15130(a)(2), the analysis of potential cumulative impacts pertaining to expansive soils will not be further analyzed.

The Proposed Project would have a less than significant impact on destroying or disturbing significant paleontological resources.

5.3.9.1. Geographic Scope

The geographic scope of the cumulative analysis for geology, soils, and paleontology encompasses the boundaries of the Project's disturbance footprint, work areas, staging areas, access routes, and pull tension sites.

5.3.9.2. Cumulative Analysis

Within Table 5-2, the following cumulative projects are located within approximately 0.25 miles of the Proposed Project and are considered for potential cumulative impacts related to geology, soils, and paleontology due to the potential concurrent construction activities:

- 1-1: SCE Control Silver Peak Subtransmission Line
- 1-5: Cartago Wildlife Area Fence Extension Project
- 1-7: CBC Haiwee North Optical Line
- 1-8: North Haiwee Dam No. 2
- 1-13: Fish Springs Pavement Project
- 2-2: Ridgecrest-Inyokern Pavement Project
- 2-3: SCE California City Project
- 3S-1: Aratina Gen-Tie Project
- 3S-5: SCE Accelerate Substation

Impact GSP-1: Expose people or structures to adverse effects, including the risk of loss, injury, or death, due to rupture of a known earthquake fault, seismic ground shaking, or liquefaction.

LESS THAN CUMULATIVELY CONSIDERABLE AND BENEFICIAL. As discussed in Section 3.9 (Geology, Soils, and Paleontology), the Proposed Project crosses numerous active and potentially active faults considered to be potential seismic sources by the USGS. The cumulative projects discussed above would also be located within the vicinity of the same active faults considered to be potential seismic sources. As discussed in Section 5.3, the Proposed Project's replacement structures would be located in the near vicinity of the existing structures that would be removed and would not result in an increased risk from fault rupture compared with the existing baseline. Most of the Proposed Project's new and modified structures are

located in areas not conducive to liquefaction (i.e., with groundwater levels greater than 50 feet bgs). All proposed structure locations, including those proposed in other locations along the ROW, would be required to undergo investigation and be designed in accordance with GO 95 and 128 and SCE's design standards. These practices and requirements would avoid placement of structures within active fault crossings, protect against seismic shaking, and furthermore, would result in stronger and safer subtransmission facilities than the existing old facilities. For these reasons, the Proposed Project's incremental contribution to cumulative impacts would not only be less than significant, but also beneficial.

Impact GSP-2: Result in substantial soil erosion or the loss of topsoil.

LESS THAN CUMULATIVELY CONSIDERABLE WITH MITIGATION. Within the cumulative projects listed above and similar to the Proposed Project, any construction activities that disturb one acre or more of land would be required to develop a SWPPP which would include erosion control measures. Implementation of a SWPPP would substantially reduce impacts related to soil erosion. Additionally, as detailed in Section 3.9, SCE's measures include implementing APM BIO-RES-1 requiring revegetation and Mitigation Measure HW-1a to implement a Drainage, Erosion, and Sedimentation Control Plan, which would effectively manage erosion during construction and operation. As a result, the Proposed Project's incremental contribution to cumulative impacts to soil erosion and loss of topsoil would be less than significant.

Impact GSP-3: Be located on a geologic unit or soil that is unstable, or would become unstable as a result of the Project, and result in on- or off-site landslide, subsidence, liquefaction or collapse.

LESS THAN CUMULATIVELY CONSIDERABLE. As discussed in Section 3.9, the Proposed Project components are primarily underlain by relatively flat to gently sloping terrain that lack landslide conditions. However, some areas near the El Paso and Rand Mountains (Segment 2), the Waterman Hills (Segment 3N), and Daggett Ridge (Segment 3S) have steeper slopes mapped as having moderate to high landslide susceptibility. The identified cumulative projects in these areas have the potential to be exposed to geologic instability. However, in the case of the Proposed Project, SCE would conduct geotechnical investigations, implement recommendations for the final design, and engineer the replacement structures to higher standards than baseline conditions. These practices would reduce the Proposed Project's incremental contribution to cumulative effects such that the Proposed Project would not result in cumulatively consideration impacts.

As detailed in Section 3.9, the subsidence potential of the basins underlying the Proposed Project are low for the Indian Wells Valley basin (Segments 1 and 2), medium-to-high for the Fremont Valley basin (Segment 2), high for the Harper Valley basin (Segments 2, 3N, and 3S), high for the Lower Mojave River Valley basin (Segment 3S). The cumulative projects located within the same basins as the Proposed Project would be subject to the same identified subsidence potential. However, as described in Chapter 2 and analyzed in Section 3.12, while the Proposed Project would require water for dust mitigation and other uses during temporary construction activities, operation of the Proposed Project (i.e., as a subtransmission line) would not consume water. As discussed in Section 12, construction water would be obtained in accordance with the respective groundwater sustainability plans (GSP) and UWMP, which consider long-term sustainability of the groundwater basin, including prevention of subsidence. In summary, the Proposed Project's impact would not be cumulatively considerable.

Impact GSP-5: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

LESS THAN CUMULATIVELY CONSIDERABLE WITH MITIGATION. As discussed in Section 3.9, while portions of the Project footprint area are already disturbed and would be unlikely to contain significant paleontological resources, Project construction activities may also occur in previous undisturbed areas with moderate to

very high potential of encountering significant paleontological resources. Specifically, the potential to encounter sensitive paleontological resources along the Proposed Project segments are the following:

- Segment 1: Moderate to high
- Segment 2: Moderate to very high
- Segment 3N: Moderate
- Segment 3S: Moderate to very high

As a result, cumulative impacts on paleontological resources could potentially occur when the cumulative projects require earth disturbance activities in areas located in the same paleontologically sensitive areas with the Proposed Project. However, the Proposed Project would require compliance with APMs PAL-1 to PAL-4, and Mitigation Measure GSP-5a, which include implementation of a Paleontological Resources Mitigation Monitoring Plan, construction monitoring for paleontological resources and a final report on monitoring, and a training program for construction personnel. Incorporation of these APMs and mitigation measures would avoid destruction and promote preservation of paleontological resources, thereby reducing the Proposed Project's incremental contribution to cumulative paleontological resources impacts. As a result, the Proposed Project's impact would not be cumulatively considerable.

5.3.10. Greenhouse Gas Emissions

As discussed in Section 3.10, the Proposed Project would have a less than significant impact on generating greenhouse gas (GHG) emissions that may have a significant impact on the environment. The Proposed Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions.

5.3.10.1. Geographic Scope

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 analysis presented here is based on a determination of whether the GHG emissions from the Proposed Project represent a cumulatively considerable contribution to climate change.

5.3.10.2. Cumulative Analysis

Impact GHG-1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

LESS THAN CUMULATIVELY CONSIDERABLE. The analysis quantifies and discloses GHG emissions consistent with a commonly used threshold of significance for individual project GHG emissions of 10,000 $MTCO_2e$ per year, as adopted by the local air districts in the project area. Because construction-related GHGs would occur early in the overall project lifespan, total GHG emissions from construction were amortized over a typical project lifespan of 30 years for comparison to the significance threshold of 10,000 $MTCO_2e$ per year. The proposed Project's construction-phase amortized GHG emissions would equate to a rate of 610 $MTCO_2e$/yr. The Proposed Project's GHG emissions created by operations and maintenance activities would not substantially change from baseline levels. At this level, the combined effects of construction and operation would not represent a cumulatively considerable contribution to the global atmosphere, and no additional mitigation is required.

5.3.11. Hazards and Hazardous Materials

As discussed in Section 3.11, the Proposed Project would have a less than significant impacts with respect to creating significant hazards to the public or the environment or otherwise result in a safety hazard through: the transport, use, disposal, or accidental release of hazardous materials; reasonably foreseeable upset and accident conditions involving the release of hazardous materials; being located on a site included on a list of hazardous materials sites; and being located within an airport land use plan area or within 2 miles of a public use airport. The Proposed Project would have a less than significant impact with mitigation on creating a hazard to the public or environment through mobilization of contaminants or hazards; creating a hazard to the public or workers due to the discovery of military munitions and unexploded ordnance; creating an interference with radio, television, communications, electronic equipment, or pacemakers; and creating a hazard to the public through induced currents or shocks.

5.3.11.1. Geographic Scope

The geographic scope of analysis for the cumulative impacts of hazards and hazardous materials is one mile from the Proposed Project.

5.3.11.2. Cumulative Analysis

Impact HH-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

LESS THAN CUMULATIVELY CONSIDERABLE. As discussed in Section 3.11 (Hazards and Hazardous Materials), the Proposed Project would require hazardous materials such as gasoline, diesel fuel, oil, and lubricants associated with general construction equipment and vehicle use. The projects listed above could handle, transport, or accidentally release hazardous materials. The Proposed Project would combine with the projects listed above and create a significant hazard to the public or environment through the handle, transport, or accidental release of hazardous materials. Should hazardous materials not be properly managed, the resulting effect would be potentially cumulatively significant. However, as analyzed in Section 3.11, use of hazardous materials is subjected to federal, state, and local regulations. Additionally, SCE would implement APM HAZ-1, which requires implementation of a Hazardous Materials Management Plan (HMMP) and a Spill Prevention, Control, and Countermeasures (SPCC) Plan. The HMMP and SPCC Plan would outline hazardous material use, storage, transport, disposal and fueling and maintenance produce rues, sand contain safety data sheets, worker training, and emergency response procedures. As a result of compliance with regulations and these hazardous materials management plans, the Proposed Project's incremental contribution would be less than cumulatively considerable.

Impact HH-2: Create a significant risk to human health or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials.

LESS THAN CUMULATIVELY CONSIDERABLE. Construction and operations and maintenance activities for the Proposed Project have the potential to result in leaks and accidental spills of hazardous materials at staging yards and construction sites. It is reasonable to assume that the identified cumulative projects, which also involve general construction and maintenance activities would similarly have the potential to result in leaks and accidental spills of hazardous materials. When considered together, the Proposed Project, along with the cumulative projects may potentially result in cumulatively considerable effects should accident conditions simultaneously occur. However, as mentioned above, all projects are subjected to applicable federal, state, and local regulations. Additionally, SCE would implement APM HAZ-1, which requires implementation of a HMMP and SPCC, and requires workers be trained on site-specific spill prevention, emergency response, and safe handling of hazardous materials. As a result of compliance with

regulations and these plans, the Proposed Project's incremental contribution would be less than cumulatively considerable.

Impact HH-3: Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.

LESS THAN CUMULATIVELY CONSIDERABLE. A review of hazardous material databases identified three hazardous material sites with 0.5 miles of the Proposed Project that were on a list compiled pursuant to Government Code Section 65962.5[5] - the former Jorgensen Reduction Plant site located adjacent to Segment 1, the Rand Historic Mining Complex is located adjacent to Segment 2, and the Coolwater Generating Station located adjacent to Segment 3S. While some cumulative projects listed above may be in close proximity to these listed sites, ground disturbance activities at listed sites are site- and project-specific, and managed by each project.

In accordance with APM HAZ-2, SCE would be required to develop and implement a Soil Management Plan which would include identification, sampling, management, and disposal of potentially contaminated soils in proximity to the listed hazardous material sites. If the soil is classified as hazardous, the soil would be properly profiled, manifested, and transported to a Class I landfill or other appropriate soil treatment or recycling facility. As a result, the Proposed Project's impact would be less than cumulatively considerable.

Impact HH-4: Create a hazard to the public or the environment through mobilization of contaminants or hazards, including pesticides, herbicides, and Valley Fever spores.

LESS THAN CUMULATIVELY CONSIDERABLE WITH MITIGATION. Active agricultural occurs adjacent to the Proposed Project's ROW along Segments 1 and 3S, and historic agricultural areas are in proximity to all segments. As such, there exists potential residual pesticide and herbicide contamination of the soil along the entirety of the Proposed Project and in proximity to the cumulative projects listed above. In the event that the Proposed Project's construction ground disturbing activities in the agricultural areas occur simultaneously with and in close proximity to ground disturbance required for the cumulative projects listed above, the Proposed Project may result in cumulatively significant effects through mobilizing potentially contaminated soil.

However, as analyzed in Section 3.11, the Proposed Project would be required to implement Mitigation Measures HH-4a (Identify Pesticide/Herbicide Contamination) and AQ-2b (Control Fugitive Dust Emissions). Mitigation Measure HH-4a (Identify Pesticide/Herbicide Contamination) would require collection, testing, handling, and disposal procedures of soil in areas of current or historical agriculture use that require ground disturbance. Mitigation Measure AQ-2b (Control Fugitive Dust Emissions) would require SCE to implement procedures that prevent visible particulate matter from becoming airborne. With implementation of these mitigation measures, the Proposed Project's impact would be less than cumulatively considerable.

Impact HH-5: Result in a safety hazard or excessive noise where the Project is located within an airport land use plan area or within 2 miles of a public use airport.

LESS THAN CUMULATIVELY CONSIDERABLE. The Proposed Project would be located within an airport land use plan or within two miles of an airport in both Segment 1 and 2. Section 2.4.2 (Federal Aviation Administration [FAA] Requirements) defines the process for evaluation of potential airport hazards. As required by the FAA Regulation, Title 14 CFR, part 77, SCE and developers of any cumulative projects listed above that are within an airport land use plan or within two miles of an airport would be required to receive FAA

[5] Section 65962.5(a) requires that DTSC maintain a list of all hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code.

approval prior to construction and operations and maintenance. As a result of both the Proposed Project and cumulative projects requiring FAA approval, there would be no significant cumulative impact.

Impact HH-6: Create a hazard to the public or workers due to discovery of military munitions and unexploded ordnance (UXO).

LESS THAN CUMULATIVELY CONSIDERABLE WITH MITIGATION. As discussed in Section 3.11 (Hazards and Hazardous Materials), there are two formerly used defense sites (FUDS) adjacent to Segments 3N and 3S. The cumulative projects listed above that are in proximity to Segments 3N and 3S would be at similar risk to the Proposed Project to create a hazard due to discovery of military munitions and UXO. Ground disturbing activities for both the Proposed Project and cumulative projects in Segments 3N and 3S could result in discovery of military munitions and UXO. As a result, the impact would be cumulatively significant.

The Proposed Project would be required to implement Mitigation Measure HH-6a (UXO Identification, Training and Reporting Plan). The mitigation measure would require SCE to survey areas of with potential UXOs, training construction personnel, develop a work plan to recover and remove discovered UXO. With implementation of this mitigation measure, the Proposed Project's impact would be less than cumulatively considerable.

Impact HH 7: Expose workers or the public to excessive shock hazards.

LESS THAN CUMULATIVELY CONSIDERABLE WITH MITIGATION. After the Proposed Project is energized, induced currents and voltages on conducting objects like pipelines and metal fences located near the proposed subtransmission lines would create a potential adverse impact because they can shock people if they come in contact with these conducting objects.

As analyzed in Section 3.11, the Proposed Project would be required to implement Mitigation Measure HH-7a (Implement grounding measures to avoid shocks), which would require SCE to identify objects that have the potential for induced voltages and implement electrical grounding of metallic objects. However, these are project-specific effects and would not cumulatively combine with other projects to create a cumulative condition. As a result, the Proposed Project would have no incremental impact to contribute to cumulative impacts.

5.3.12. Hydrology and Water Quality

As discussed in Section 3.12, the Proposed Project would not violate water quality standards or waste discharge requirements. The Proposed Project would have a less than significant impact on substantially decreasing groundwater supplies or interfering with groundwater recharge. The Proposed Project would have a less than significant impact with mitigation on altering the existing drainage pattern of the site resulting in substantial erosion or siltation, flooding, or contributing to runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

5.3.12.1. Geographic Scope

The geographic extent of the cumulative analysis for hydrology and water quality includes the water sheds that the Project crosses or is adjacent to, which are the Bishop Creek, Rawson Creek, Baker Creek, Big Pine Creek, Lone Pine Creek, Birch Creek, and Mojave River. Additionally, the Owens Valley, Rose Valley, Indian Wells Valley, Fremont Valley, Cuddeback Valley, Harper Valley, and Lower Mojave Valley groundwater basins.

Within Table 5-2 the following projects have the potential to be constructed at the same time as the Proposed Project and are within the watersheds listed above and, therefore, these projects have the potential to contribute to cumulative hydrology and water quality impacts:

- 1-1: SCE Control Silver Peak Subtransmission Line
- 1-2: Manzanar Pavement Project
- 1-3: North Lone Pine Pavement Project
- 1-7: CBC Haiwee North Optical Line
- 1-8: North Haiwee Dam No. 2
- 1-9: CBC Haiwee South Optical Line
- 1-13: Fish Springs Pavement Project
- 2-1: Kramer South Solar Farm
- 2-2: Ridgecrest-Inyokern Pavement Project
- 2-3: SCE California City Project
- 3N-3: Jazmin Solar Energy Project
- 3S-3: Solar 33 National Trail Solar Facility
- 3S-4: Solar 66 Energy Project

5.3.12.2. Cumulative Analysis

Impact HW-1: Violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.

LESS THAN CUMULATIVELY CONSIDERABLE WITH MITIGATION. Ground disturbing activities required for the Proposed Project and the cumulative projects listed above could expose soils to erosion and subsequent transport downstream. Disturbed sediment could enter surface water and increase turbidity and alteration of channel characteristics. Additionally, hazardous materials such as vehicle fuel and hydraulic fluid required for the Proposed Project and cumulative projects could spill or be discharged and contaminate surface or groundwater. Contamination could also result due to flooding within the Project area. This could result in violations to water quality standards or waste discharge requirements. However, the Proposed Project and cumulative projects listed above that disturb greater than one acre would be required to obtain NPDES permits through the State Water Resources Control Board, which oversees regional surface water quality. Each NPDES permit holder is required to prepare and implement a project-specific SWPPP, which would include water quality BMPs and measures to protect water bodies from erosion, increased runoff and sedimentation, and the accidental release of hazardous materials to maintain water quality objectives and standards.

Further, the Proposed Project would be required to implement Mitigation Measure HW-1a (Drainage, Erosion, and Sediment Control Plan [DESCP]). This plan would include site management activities and erosion and sediment control BMPs. With implementation of required water quality permitting and Mitigation Measure HW-1a (Drainage, Erosion, and Sediment Control Plan [DESCP]), the Proposed Project's incremental contribution to water quality impacts would be less than cumulatively considerable.

Impact HW-2: Substantially decrease groundwater supplies or interfere with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

LESS THAN CUMULATIVELY CONSIDERABLE. The Proposed Project would have short-term construction water demands primarily for dust control. Given the proximity of the cumulative projects listed above to the Proposed Project, it is anticipated that these projects would similarly require construction water and that water may also be obtained from the same regional sources as the Proposed Project. As analyzed in Section 3.12, the Proposed Project would obtain water from local water districts in regions managed by groundwater sustainability plans (GSPs) and Urban Water Management Plans (UWMPs), which are overseen by the respective administering agency. As analyzed, the Proposed Project would not be conflict with the water supply and groundwater sustainability programs which manage the basin-wide region. It is also reasonable to expect that cumulative projects would similarly be subjected to the same sustainable groundwater management practices required by the respective administering agencies. In summary, through compliance with the respective GSPs and UWMPs, the Proposed Project's incremental contribution to cumulative groundwater impacts would be less than significant.

The Proposed Project may encounter shallow groundwater during excavations required to install new subtransmission structures. Groundwater dewatered would be discharged to land or used for dust control would then infiltrate into the existing groundwater system, which would not substantially decrease groundwater. Additionally, daily water demand for the project would be temporary and cease at the completion of construction. As a result, the Proposed Project's impact would be less than cumulatively considerable.

Impact HW-3: 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, increase surface runoff, exceed stormwater drainage capacity, or redirect flood flows.

LESS THAN CUMULATIVELY CONSIDERABLE WITH MITIGATION. As analyzed in Section 3.12, the Proposed Project route crosses drainages as well as the Owens River and Mojave River and involves construction earthwork activities that have the potential to result in erosion and siltation, increased surface runoff, change drainage, or redirect flows. Similarly, construction of the cumulative projects, which are located in the same region and conditions as the Proposed Project could also result in similar effects that may potentially result in cumulative impacts to drainage and erosion.

However, as analyzed in Section 3.12, the Proposed Project would be required to implement Mitigation Measure HW-1a (Drainage, Erosion, and Sediment Control Plan [DESCP]). This plan would include site management activities and erosion and sediment control BMPs. With implementation of Mitigation Measure HW-1a (Drainage, Erosion, and Sediment Control Plan [DESCP]), the Proposed Project's impact would be less than cumulatively considerable.

5.3.13. Land Use and Planning

NO IMPACT. As discussed in Section 3.13, the Proposed Project would have no impact from conflicting with a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. As the Proposed Project would have no impact on land use and planning, no cumulative impact would occur. In accordance with CEQA Guidelines 15130(a)(1), no further analysis is required.

5.3.14. Mineral Resources

As discussed in Section 3.14, the Proposed Project would have a less than significant impact on the loss of availability of a known mineral resource due to construction in Segments 1 and 2 within federally designated High Potential Mineral Areas and State-classified MRZs in Segments 2, 3S and 3N. The Proposed Project would have a less than significant impact with mitigation on loss of availability of a locally important mineral resource due to impacts on access to the Red Hill Quarry and Rand Mining Complex.

5.3.14.1. Geographic Scope

The geographic scope of analysis for mineral resources is 1 mile from the Proposed Project, which is the study area used to identify known mineral resources in the Proposed Project vicinity. This distance conservatively accounts for the limits of potential indirect effects on mineral resource areas.

5.3.14.2. Cumulative Analysis

Impact MR-1: 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.

LESS THAN CUMULATIVELY CONSIDERABLE. Significant cumulative impacts could occur if the cumulative projects overlap within the same known mineral resource areas or prevent access to such areas. None of the cumulative projects would overlap with the Proposed Project, including the Inyokern Solar Project,

Mojave Solar Project, Lockhart Solar Project, Overnight Solar Project, Jazmin Solar Energy Project, Kramer South Solar Farm, California City Project. The Proposed Project would both install new structures and remove existing structures in areas that contain known mineral resources. Temporary construction impacts would not result in the loss of availability of a known mineral resource. Permanent impacts from installation of structures within a mineral resource zone would be offset by the removal of existing structures. Due to the restoration of temporary impacts and offset of permanent impacts, the Proposed Project would not combine with any of the cumulative projects in a way that would affect access to known mineral resources areas. Therefore, the Proposed Project's contribution to a potentially significant cumulative impact would be less than cumulatively considerable.

Impact MR-2: 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.

LESS THAN CUMULATIVELY CONSIDERABLE. None of the cumulative projects are located within the Red Hill Quarry or Rand Mining Complex or would affect access to the Red Hill Quarry and Rand Mining Complex, which are the only two mineral resource recovery sites that would be impacted by the Proposed Project. As a result, impacts on access to the Red Hill Quarry and Rand Mining Complex would not be cumulative and would only be project specific.

5.3.15. Noise

As discussed in Section 3.15, the Proposed Project would have a less than significant impact with mitigation from generation of a substantial temporary increase in noise levels due to helicopter use during construction. The Proposed Project construction would be conducted during daytime hours when construction noise is exempt under local noise ordinances. The Proposed Project vibration levels would be less than the thresholds for structural damage at a distance of 9 feet and less than the threshold for annoyance at a distance of 22 feet from construction. The Proposed Project would have a less than significant impact from generation of vibration during construction.

The Proposed Project would not be located within the vicinity of a private air strip or airport land use plan and would have no impact from exposure to excessive airport noise. As a result, the Proposed Project would make no contribution to cumulative impacts from location within the vicinity of a private air strip or airport land use plan.

5.3.15.1. Geographic Scope

The geographic scope for cumulative analysis of noise and vibration is generally localized. Noise sources attributable to cumulative projects may cause adverse effects within approximately one mile of a project site including truck routes, but the region of greatest influence is typically within 0.5 miles from the boundary of a project site. Similarly, vibration sources that typically occur with construction activity or vehicle traffic have a region of influence that is limited to approximately 200 feet. Projects and other noise-generating activities near Proposed Project activities could create the potential for noise from nearby sources to combine with that of the Proposed Project, resulting in an exceedance of noise standards. This geographic scope of analysis is appropriate because noise attenuates rapidly with distance. Cumulative impacts on noise could occur if other projects, in conjunction with the Proposed Project, would have impacts on noise that, when considered together, would be significant.

5.3.15.2. Cumulative Analysis

Noise from construction is typically a local impact that would affect sensitive receptors in the immediate vicinity of the Proposed Project site. Local projects that have the potential to be constructed at the same time as the Proposed Project have the potential to contribute to cumulative noise impacts in combination with the Proposed Project. The noise and vibration effects of the equipment used for construction of other

present and future cumulative projects would depend on the site-specific needs and schedules, and the impacts may or may not overlap spatially and temporally with those of the proposed Project.

Limited areas of cumulative project construction activities could be within 0.5 mile of the Proposed Project. The construction timing of the Proposed Project and the cumulative projects are estimated, so the potential for overlap is roughly estimated as any project listed in Table 5-2 that has the potential to be constructed in the future. Cumulative projects that may be located within 0.5 miles of the Proposed Project and are considered for potential cumulative impacts related to noise include:

- 1-1: SCE Control Silver Peak Subtransmission Line
- 1-2: Manzanar Pavement Project*[6]
- 1-4: Owens River Water Trail Project*
- 1-5: Cartago Wildlife Area Fence Extension Project*
- 1-6: LADWP Right of Way (ROW) Dust Mitigation Project*
- 1-7: California Broadband Cooperative (CBC) Haiwee North Optical Line*
- 1-8: North Haiwee Dam No. 2*
- 1-13: Fish Springs Pavement Project*
- 2-1: Kramer South Solar Farm
- 2-2: Ridgecrest-Inyokern Pavement Project
- 2-3: SCE California City Project
- 3S-13: S-1 Aratina Gen-Tie Project*
- 3S-2: Lenwood Ave EV Charging and Logistic Facility
- 3S-5: SCE Accelerate Substation*

Impact N-1: Expose persons to or generate a substantial temporary or permanent increase in noise levels in excess of established standards.

LESS THAN CUMULATIVELY CONSIDERABLE WITH MITIGATION. Active pieces of construction equipment normally cause no more than 85 dBA when measured 50 feet from the source. Construction-phase noise impacts would be short-term and limited in nature, with construction activities for all cumulative projects normally being limited to the daytime. Simultaneous cumulative project construction activity would have the potential to cause overlapping construction noise impacts with construction of the proposed Project, though the potential for overlap depends on the distance and timing of the future projects.

Noise associated with construction of the Proposed Project would temporarily increase ambient noise levels in the project vicinity. Construction activities along the entire Proposed Project would last for approximately 39 months; however, construction would proceed along the 262-mile-long line, and construction at each location would last a few days and would be completed over multiple phases. The total duration of all work activities at each location along the line would be a couple of weeks, with the exception of material yards and helicopter landing zones where activities would occur for several months. As such, the potential for construction activities from the Proposed Project to occur at the same location along the Proposed Project line as construction of any cumulative projects in the same location would be further limited. The construction noise levels would be intermittent and highly variable, depending on the proximity of the construction equipment to any noise-sensitive receptor and the intensity of the construction activity.

In Segments 1 and 2, the maximum noise level at the nearest sensitive receptor (35 feet) would be 91 dBA Leq, however, peak construction noise exposure would not be continuous over the day and would last for a few days during each phase of construction. Peak noise levels at locations within 50 feet of activities would experience an Lmax of approximately 86 dBA, while receptors over 1,200 feet away would be subject to sustained noise levels under 55 dBA. The nearest sensitive receptors in Segments 3N and 3S could reach a maximum noise level ranging from 74 to 86 dBA. SCE would implement APM NOI-1, which requires construction equipment to use noise reduction features (e.g., mufflers and engine shrouds) and minimizes unnecessary idling times. Because construction at each location along the Proposed Project alignment would be temporary and intermittent and unlikely to directly overlap with construction from a cumulative project at any one location near a sensitive receptor, construction noise from cumulative projects would

[6] Projects with asterisks are likely to be located within approximately 0.5 miles of a material yard or helicopter landing zone.

not be expected to combine with project construction noise in a way that would substantially or permanently increase noise levels experienced by sensitive receptors.

Noise from helicopter activities at a distance of 100 feet from sensitive receptors ranges from 85 to 92 dBA and would be intermittent and for brief periods during the day but would be substantial noise to the receptors adjacent to the material yards and landing zones where helicopter use would be continuous for months. Noise from helicopter activities would have a higher chance of overlapping with noise from cumulative project construction, both due to the intensity of noise, as well as the length of time that receptors near material yards and landing zones would be subject to helicopter noise. Mitigation Measure N-1a (Helicopter Noise Control Strategy) requires SCE to develop and implement a helicopter noise control strategy to mitigate this impact to less than significant, and avoid noise-sensitive receptors on the ground and prohibit hovering within 250 feet of residences, as the noise level at this distance would be similar to the proposed construction activities which are less than significant.

As described above, cumulative noise impacts would not be significant with implementation of Mitigation Measure N-1 (Helicopter Noise Control Strategy). These impacts would be further reduced through compliance with local laws and regulations and implementation of typical mitigation to protect sensitive receptors from noise and implement feasible noise controls. Cumulative projects and other development that is subjected to the environmental permitting process would have a detailed analysis of noise and land use conflicts as part of the project-level environmental review. The permitting process normally requires each project to comply with local standards and to avoid noise-related land use conflicts. This means that all projects, even if unrelated to the proposed Project, would need to comply with the local community noise standards.

The noise impact of cumulative project operations could also occur simultaneously with proposed Project construction, although no cumulative project operation noise would be likely to occur at a location that substantially influences the localized noise levels experienced by residences nearest to the proposed Project permanent noise sources. As a result, the Proposed Project would not make a cumulatively considerable contribution to cumulative impacts from temporary or permanent increases in excess of established standards.

Impact N-2: Generate or expose persons to excessive groundborne vibration.

LESS THAN CUMULATIVELY CONSIDERABLE WITH MITIGATION. Cumulative effects due to ground-borne vibration would occur only if there were sources of the vibration within approximately 200 feet from the boundaries between the proposed Project site and cumulative project sites. Boundaries of cumulative projects occur within 200 feet of the proposed Project site, but these shared boundaries are not within 200 feet of existing residences. As a result, the areas of potential overlap of cumulative project construction-related vibration would not be likely to create a cumulative vibration impact at residences near the proposed Project, and no cumulative effects would be likely from ground-borne vibration.

Noise sources attributable to past projects and relevant cumulative projects would contribute to increased noise and vibration levels in the vicinity of the sources. The Proposed Project's contribution to cumulative impacts would be less than cumulatively considerable with implementation of Mitigation Measure N-1a. Mitigation Measure N-1a, Implement Helicopter Noise Control Strategy, would help lower the Proposed Project's contribution to cumulative impacts by reducing the adverse effects of helicopter flight near noise-sensitive receptors. With implementation of these mitigation measures, the Proposed Project would not result in cumulatively considerable effects to noise. Therefore, cumulative impacts would be less than significant.

5.3.16. Population and Housing

As discussed in Section 3.16, the Proposed Project would have no impact on directly or indirectly inducing substantial population growth in the project area, nor would it displace a substantial number of existing people or housing. As the Proposed Project would have no impact on population and housing, no cumulative impact would occur. In accordance with CEQA Guidelines 15130(a)(1), no further analysis is required.

5.3.17. Public Services

As discussed in Section 3.17, the Proposed Project would have a less than significant impact with mitigation on fire and emergency response due to road closures, project use of fire roads, and potentially blocking property entrances during construction. During operations, the Proposed Project would have no impacts, because the Proposed Project would operate the replacement lines in the same manner as existing conditions, and does not involve building new housing or require staff to relocate; therefore, result in no permanent population growth. In accordance with CEQA Guidelines 15130(a)(1), no further analysis regarding population growth is required. The Proposed Project would have a less than significant impact on law enforcement, ambulance services, medical facilities, and schools.

5.3.17.1. Geographic Scope

The geographic scope of analysis for cumulative public service impacts includes a three-mile radius around the project area. This geographic scope is appropriate because cumulative projects within this radius would be served by the same public services.

5.3.17.2. Cumulative Analysis

Impact PS-1: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives.

LESS THAN CUMULATIVELY CONSIDERABLE WITH MITIGATION. Cumulative projects listed in Table 5-2 are located in Inyo, Kern, and San Bernardino counties. These projects would be served by the same public services as the Proposed Project. These projects have the potential to increase demand on public services in these counties such that new or alternate governmental facilities are required, in the event that construction activities overlap increasing demand on public services. Furthermore, construction of these projects could result in road closures that could impede emergency or law enforcement access. The Manzanar Pavement Project, North Lone Pine Pavement Project, Olancha Cartago 4 Lane Project, East Line Street Bridge Replacement Project, Fish Springs Pavement Project, and Ridgecrest-Inyokern Pavement Project would involve lane closures that could impede emergency or law enforcement access. Construction of the Proposed Project would also require road closures that could impede emergency access. Therefore, the cumulative impacts of these projects and the Proposed Project would be potentially significant.

However, the Proposed Project would be required to implement Mitigation Measure T-1b (Prepare Traffic Control Plans). The traffic control plans would be required to be approved by the affected jurisdictions. Additionally, SCE would be required to inform emergency service agencies of road closures. Detours, and delays. Implementation of Mitigation Measure T-1b (Prepare Traffic Control Plans) would ensure that emergency service providers are able to plan around construction and maintain their response times. With implementation of Mitigation Measure T-1b (Prepare Traffic Control Plans), the Proposed Project contribution to a significant cumulative impact would be less than cumulatively considerable.

5.3.18. Recreation

As discussed in Section 3.18, in segments 1 and 2, the Proposed Project would have a less than significant impact with mitigation on the disruption of recreational activities and blocking or reducing access and visitation to recreational areas. In Segments 3N and 3S, the Proposed Project would have a less than significant impact on the disruption of recreational activities and blocking or reducing access and visitation to recreational areas. The Proposed Project would have no impact on damage to recreational trails or facilities.

5.3.18.1. Geographic Scope

The geographic scope of analysis for cumulative impacts of recreation is a three-mile radius around project features.

5.3.18.2. Cumulative Analysis

Impact R-1: Disrupt recreational activities, temporarily blocking or reducing access and visitation to recreational areas.

LESS THAN CUMULATIVELY CONSIDERABLE WITH MITIGATION. The recreational facilities discussed in Section 3.18 (Recreation) occur within three miles of the Proposed Project, as such all cumulative projects listed in Table 5-2 (Cumulative Projects) would apply to the cumulative analysis. These projects would also have the potential to directly or indirectly disrupt, block, or reduce access to recreational areas in combination with the Proposed Project. This would result in a cumulatively significant impact.

The Proposed Project would temporarily disrupt recreation activities and visitation to recreational areas due to dust, noise, and restriction of access, absent mitigation this would result in a cumulatively considerable impact. The Proposed Project would be required to implement mitigation measures AQ-2b (Control Fugitive Dust Emissions), N-1a (Helicopter Noise Control), and REC-1a (Coordinate construction schedule and activities and identify alternative recreation areas). These mitigation measures would reduce noise and dust disturbance effects from helicopters and allow recreation facility owners to coordinate with SCE to plan potential closures and allow recreationists to plan alternative recreational areas to avoid disturbances. With implementation of these mitigation measures, the Proposed Project contribution to a significant cumulative impact would be less than cumulatively considerable.

Impact R-2: Damage recreational trails or facilities.

NO IMPACT. The Proposed Project would not damage recreational trails or facilities. As the Proposed Project would have no impact, it would not contribute to a cumulative impact.

5.3.19. Transportation

As discussed in Section 3.19, the Proposed Project would not conflict with a program, plan, ordinance, or policy addressing the circulation system after mitigation. The Proposed Project would have a less than significant impact on generation of excessive vehicle miles travelled per CEQA Guidelines section 15064.3, subdivision (b). The Proposed Project would have a less than significant impact with mitigation on requiring closure of lanes or roadways that would substantially restrict the movement of emergency vehicles. The Proposed Project would have a less than significant impact on requiring the temporary closure of lanes or roadways resulting in a substantial increase in roadway hazards. The Proposed Project would have a less than significant impact with mitigation on increasing roadway hazards through damage to road surfaces. The Proposed Project would have a less than significant impact on conflicting with FAA recommendations to reduce hazards to navigable airspace, an airport land use plan, or restriction to airspace related to active military flights. The Proposed Project would have a less than significant impact

with mitigation on the potential to create a hazard to the public or the environment through the transport of heavy loads with helicopters.

5.3.19.1. Geographic Scope

The geographic extent of the cumulative analysis for transportation is the local and regional circulation system, including roadways, transit services, bicycle facilities, and pedestrian facilities that provide circulation within the Project area and access to and from the Project area. The regional and local circulation system in the Project area consists of two-lane local roadways (one lane in each direction), city arterials, State Route (SR) 31, SR-91, SR-58, SR-127, SR-136, SR-168, and SR-190. Two interstate highways (Interstate 15 and 40) and US 395 are also included. Eastern Sierra Transit Authority is the primary public transit agency within Segment 1. Kern Regional Transit is the main public transit operator within Segment 2. The Victor Valley Transit Authority is the primary public transit agency within Segments 3N and 3S. The geographic scope also includes airports and areas that are proposed as helicopter landing zones.

Within Table 5-2 the following projects have the potential to be constructed at the same time as the Proposed Project and, therefore, these projects could contribute to cumulative transportation impacts:

- 1-1: SCE Control Silver Peak Subtransmission Line
- 1-2: Manzanar Pavement Project
- 1-3: North Lone Pine Pavement Project
- 1-7: CBC Haiwee North Optical Line
- 1-8: North Haiwee Dam No. 2
- 1-9: CBC Haiwee South Optical Line
- 1-13: Fish Springs Pavement Project
- 2-1: Kramer South Solar Farm
- 2-2: Ridgecrest-Inyokern Pavement Project
- 2-3: SCE California City Project
- 3N-3: Jazmin Solar Energy Project
- 3S-3: Solar 33 National Trail Solar Facility
- 3S-4: Solar 66 Energy Project

5.3.19.2. Cumulative Analysis

The discussion below addresses all of the following impacts.

Impact T-1: Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

Impact T-2: Conflict or be inconsistent with State CEQA Guidelines Section 15064.3(b) regarding vehicle miles traveled.

Impact T-3: Result in inadequate emergency access.

Impact T-4: Require the temporary closure of lanes or roadways resulting in a substantial increase in roadway hazards.

Impact T-5: Increase roadway hazards through damage to road surfaces.

LESS THAN CUMULATIVELY CONSIDERABLE WITH MITIGATION. The Proposed Project would require temporary road or lane closures that could disrupt bus service, pedestrian or bicycle movement, rail, and operations of emergency service providers and increase roadway hazards. Furthermore, the Proposed Project would require the use of heavy construction equipment that could lead to roadway hazards through damage to road surfaces. The cumulative projects listed above, which have the potential to be constructed at the same time as the Proposed Project, may also require temporary road or land closures. These closures required by cumulative projects could disrupt the circulation system and emergency service providers and increase roadway hazards. When combined with the impacts of the road or lane closures required for the Proposed Project, they could create a significant cumulative impact.

The Applicant would be required to implement Mitigation Measures T-1a (Prepare Construction Transportation Plan), T-1b (Prepare Traffic Controls Plan(s)), T-1c (Obtain Permits or Approvals for Crossing or Working in Railroad Rights-of-Ways), and T-5a (Repair Roadways Damaged by Construction Activities). These measures would include a transportation plan that describes alternate traffic routes and puts parking restrictions on worker vehicles, a traffic control plan that includes measures to ensure road safety, restriction of lane closures and advanced notification to emergency services providers, and approval from rail owners to cross railroad ROW. Implementation of the mitigation measures would reduce the Proposed Project's impact to less than cumulatively considerable.

Impact T-6: Conflict with FAA recommendations to reduce hazards to navigable airspace, an airport land use plan, or restrictions to airspace related to active military flights.

NO IMPACT. Pursuant to FAA guidelines, SCE is required to submit FAA Form 7460–1, Notice of Proposed Construction or Alteration, for project-related features and changes that meet Form 7460–1 height requirements. During FAA review, the FAA would identify which structures pose hazards and will recommend safety devices (e.g., marker balls). FAA will also determine whether any transmission structure heights would be restricted. All cumulative projects would be subject to the same FAA regulations as the Proposed Project (see Section 3.19.2.1). As a result of both the Proposed Project and cumulative projects requiring FAA approval, there would be no significant cumulative impact.

Impact T-7: Create a hazard to the public or the environment through the transport of heavy loads with helicopters.

LESS THAN CUMULATIVELY CONSIDERABLE WITH MITIGATION. Helicopter use for the Proposed Project would be required for transportation of personnel, delivery of equipment, transmission structure place, structure removal, hardware installation, and conductor and cable stringing. The cumulative projects listed above may also require helicopter use and transport of heavy loads. The Proposed Project in combination with the cumulative projects' use of helicopters to transport heavy loads would create a significant cumulative hazard.

The Proposed Project would be required to implement Mitigation Measure T-7a (Prepare and implement a final helicopter use plan). The plan would include measures for compliance with FAA regulations, establishment of designated flight corridors to avoid potential hazards, and daily flight notifications among other requirements. Implementation of the plan would reduce potential hazards created by the Proposed Project's helicopter use and a less than cumulative considerable impact.

5.3.20. Utilities and Service Systems

As discussed in Section 3.20, the Proposed Project would have a less than significant impact on the local water supply and solid waste disposal infrastructure. The Proposed Project would have a less than significant impact on existing pipelines and utilities.

5.3.20.1. Geographic Scope

The geographic scope for cumulative utilities and service systems impacts is an approximately 2 miles radius from the Project site. This geographic scope is appropriate because cumulative projects within the approximately 2 miles radius would be served by the same utilities and service systems.

The following cumulative projects from Table 5-2 are within the geographic scope of analysis for utilities and service system:

- 1-1: SCE Control Silver Peak Subtransmission Line
- 1-2: Manzanar Pavement Project
- 1-3: North Lone Pine Pavement Project
- 1-4: Owens River Water Trail Project
- 1-5: Cartago Wildlife Are Fence Extension Project
- 1-6: LADWP ROW Dust Mitigation Project
- 1-7: CBC Haiwee North Optical Line
- 1-8: North Haiwee Dam No. 2
- 1-9: CBC Haiwee South Optical Line
- 1-10: Little Lake Aqueduct Crossover Project
- 1-12: Big Pine Wastewater Treatment Facility Expansion
- 1-13: Fish Springs Pavement Project
- 2-1: Kramer South Solar Farm
- 2-2: Ridgecrest-Inyokern Pavement Project
- 2-3: SCE California City Project
- 3N-1: Overnight Solar Project
- 3N-3: Jazmin Solar Energy Project
- 3S-1: Aratina Gen-Tie Project
- 3S-2: Lenwood Ave EV Charging and Logistics Facility
- 3S-3: Solar 33 National Trail Solar Facility
- 3S-4: Solar 66 Energy Project
- 3S-5: SCE Accelerate Substation

5.3.20.2. Cumulative Analysis

Impact US-1: Require new water supply entitlements or place demands on local water providers.

LESS THAN CUMULATIVELY CONSIDERABLE. The Proposed Project would require water for construction activities. As discussed in Section 3.20, SCE would obtain water from existing surface water and groundwater supplies through local water purveyors in regions managed by groundwater sustainability plans (GSPs) and Urban Water Management Plans (UWMPs), which are overseen by the respective administering agency. Given the proximity of the cumulative projects to the Proposed Project, it is anticipated that these projects would similarly require construction water that would be obtained from the same regional sources as the Proposed Project. If existing water entitlements, supplies, and reliability are insufficient then the Proposed Project in conjunction with other cumulative project may result in cumulatively considerable impacts. However, as analyzed in Section 3.20, sufficient water supplies are available along the project route alignment, and SCE would purchase temporary construction water through existing programs managed by the appropriate administering agency. The Proposed Project would not be conflict with the water supply and groundwater sustainability programs which manage the basin-wide region. Other cumulative projects would similarly be required to secure their water supply with approval of the respective water management agencies. In summary, through compliance with the respective administering agency programs (GSPs and UWMPs), the Proposed Project's incremental contribution to cumulative water supply impacts would be less than significant. During operations, the Proposed Project would not consume water. Thus, the Proposed Project's impact would be less than cumulatively considerable.

Impact US-2: Generate solid waste in excess of state or local regulations or in excess of the capacity of local infrastructure.

LESS THAN CUMULATIVELY CONSIDERABLE. Construction of the Proposed Project would generate 1,059 cubic yards of solid waste (including approximately 1,003 cubic yards of metal and approximately 56 cubic yards of concrete) and 118.9 cubic yards of treated wood waste. As identified in Section 3.20, existing landfills serving the Project region have combined remaining capacities of 80.92 million cubic yards for standard waste and 79.4 million cubic yards for treated wood waste. It is anticipated that the cumulative projects would also generate construction waste and would be served by the same landfill facilities.

However, SCE expects that much of the existing subtransmission structures (including lattice steel structures and components) and all existing conductor removed during construction would be salvaged or recycled, and therefore diverted from landfill disposal. Additionally, the waste generated from the Project construction represents approximately 0.0013 percent of the capacity for solid waste facilities, if no

materials were recycled or salvaged, and 0.00015 percent of the capacity of treated wood waste facilities. Furthermore, the Proposed Project would not generate waste during operations. As a result, the Proposed Project's incremental contribution to cumulative solid waste generation would be negligible; therefore, impacts would be less than cumulatively considerable.

Impact US-3: Disrupt existing pipelines and utility systems or cause a collocation accident.

LESS THAN CUMULATIVELY CONSIDERABLE. Construction of the Proposed Project could create service interruptions or preclude access to some of the utilities for short periods of time. The cumulative projects listed above may contact or disturb underground utilities and facilities during construction. These cumulative projects, similar to the Proposed Project, would be required to comply with the requirements of the Underground Service Alert (USA) to identify any existing underground utilities in proximity to construction activities. Compliance with the USA would reduce the likelihood of disrupting existing utility systems and causing a collocation accident. Additionally, as described in Chapter 2, because the Proposed Project facilities are under CAISO control, SCE is required to develop a construction sequencing program in coordination with CAISO to minimize potential service interruptions. As a result, the Proposed Project's incremental contribution to cumulative effects during construction would be less than significant. During operations, the Proposed Project would provide long-term electrical service stability, as described in Chapter 2. In summary, the Proposed Project's incremental contribution would not be cumulatively significant.

5.3.21. Wildfire

As discussed in Section 3.21, the Proposed Project would have a less than significant impact on emergency response or emergency evacuation, exacerbating wildfire risks due to slope, prevailing winds, or other factors, installation of infrastructure that may exacerbate fire risk, and exposing people to downslope or downstream flooding or landslides due to post-fire instability.

5.3.21.1. Geographic Scope

The geographic scope of analysis consists of the fire sheds that the Proposed Project is located within, particularly where the Proposed Project is located within a high fire severity zone or fire threat district in the northern portion of Segment 1.

5.3.21.2. Cumulative Analysis

Impact WF-1: Substantially impair emergency response or emergency evacuation.

LESS THAN CUMULATIVELY CONSIDERABLE. As discussed in Section 3.21, no emergency evacuation routes are located in the Proposed Project area; therefore, the cumulative impact on emergency evacuation would be less than significant.

The Proposed Project construction activities may require temporary closure of travel lanes on public roadways, private roads, and driveways, which could affect emergency response vehicles. In the event the construction of the cumulative projects occurs simultaneously with and in close proximity to the Proposed Project, the incremental effect of the Proposed Project in combination with the cumulative projects may potentially result in cumulative impacts to emergency response. However, the Proposed Project would implement APM TRA-1, which requires the coordination with local authorities, including emergency responders, regarding construction schedules and temporary road closures. Similarly, during operations, while the project maintenance activities may infrequently require temporary lane closures, SCE would implement APM TRA-1 to coordinate for safe road closures and maintain the basic standards for safe

movement of traffic, including provisions for emergency response. In summary, the Proposed Project's incremental contribution to cumulative effects would be less than significant.

Impact WF-2: Exacerbate wildfire risks, due to slope, prevailing winds, and other factors, that would thereby expose people to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire.

LESS THAN CUMULATIVELY CONSIDERABLE. As discussed in Section 3.21, portions of the Proposed Project traverse areas designated as high FHSZ and HFTD within Segment 1. The Proposed Project's construction-related activities which may result in ignition sources include sparks from vehicles, equipment, welding or from metal striking metal or stone, which could ignite surrounding vegetation within areas located within or near wildlands. Construction of the cumulative projects may also involve hot work[7] and heavy equipment use, which similarly has the potential to ignite a wildfire. However, because a single ignition event is sufficient to ignite a fire, multiple or cumulative ignition events are not required to result in a wildfire. As analyzed in Section 3.21, SCE would implement a project-specific Fire Prevention and Emergency Response Plan as part of APM HAZ-3, and includes uniform guidelines for prevention, control, and extinguishment of fires, procedures for red flag warning days, worker training to reduce wildfire ignition, and fire response procedures.

During operations, as with current operations and maintenance, SCE would comply with all current federal and State laws related to vegetation clearance and fire prevention. SCE would also implement its WMPs required under SB 901 during operations and maintenance activities of the Proposed Project, including in Segment 1.

As analyzed in Section 3.21 the Proposed Project does not involve other effects to exacerbate wildfire risks. The cumulative impact from exacerbating wildfire risks would be significant. As a result, the Proposed Project contribution to a significant cumulative impact would be less than cumulatively considerable.

Impact WF-3: Require the installation or maintenance of 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.

LESS THAN CUMULATIVELY CONSIDERABLE. As described in Chapter 2, the Proposed Project would replace the existing subtransmission line with stronger and taller steel poles that would increase the clearance with the ground and vegetation, thereby reducing the potential for fire ignition compared to existing conditions. However, the Proposed Project, as well as the identified cumulative projects that include new roads, powerlines, and utility projects including the Control Silver Peak Subtransmission Line, Haiwee North Optical Line, California City Project, and Aratina Gen-Tie Project, would potentially present fire risks from construction or maintenance vehicle or equipment sparks and electrical infrastructure-associated ignitions. However, because a single ignition event is sufficient to ignite a fire, multiple or cumulative ignition events are not required to result in a wildfire. The Proposed Project would implement both SCE's standard fire prevention protocols and a project-specific Fire Prevention and Emergency Response Plan per APM HAZ-3. As a result, the cumulative addition of ignition events is not required to result in a significant fire risk. As analyzed in Section 3.21 the Proposed Project does not involve other effects to exacerbate wildfire risks. In summary, the Proposed Project contribution to a significant cumulative impact from exacerbated fire risk would be less than cumulatively considerable.

[7] Hot work is construction activity involving electric or gas welding, cutting, brazing, or other flame or spark-producing operations that can ignite flammable materials

Impact WF-4: 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.

LESS THAN CUMULATIVELY CONSIDERABLE. The Proposed Project and the cumulative projects are generally located in flat areas. Projects in flat areas would not be expected to expose people or structures to significant risk including downstream flooding or landslides as a result of post-fire slope instability. The proposed Control-Silver Peak Subtransmission Line Project is located within the White Mountains and construction of the project has the potential to exacerbate post-fire slope instability if the project ignited a wildfire. However, this project's location means that these effects would not combine with those of the Proposed Project.

The Proposed Project would implement both SCE's standard fire prevention protocols and a project-specific Fire Prevention and Emergency Response Plan per APM HAZ-3. During operation, the Proposed Project would replace the existing subtransmission line and would not increase fire risk. Due to implementation of APM HAZ-3, the Proposed Project contribution to a significant cumulative impact from post-fire slope instability would be less than cumulatively considerable.

5.4. Cumulative Effects of Alternatives

As illustrated in Figure 4-1, the three alternatives evaluated within Segment 1 all begin and end with connection to the Proposed Project route. Each alterative would result in the installation of the SCE Ivanpah-Control 115 kV subtransmission line in a position immediately adjacent to the existing larger LADWP transmission lines. The alternatives are located up to about 2.5 miles away from the Proposed Project route, in very similar environmental settings. They would require the same construction activities as would the Proposed Project, and the timing would be similar.

The projects presented in Table 5-2 would have similar effects on the alternative segments as they would on the Proposed Project. As a result, the cumulative effects associated with construction and operation of the alternatives would be very similar to the effects defined in Section 5.3 for the Proposed Project.

5.5. References

Following are links to all available projects included in Table 5-2.

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San Bernardino County. 2024a. Lenwood Avenue EV Charging and Logistics Facility. Accessed at https://www.sbcounty.gov/uploads/LUS/Environmental/NOP_EV%20Charging%20Station%20and%20Logistics%20Facility_05.15.2024.pdf. January 9, 2025.

San Bernardino County. 2024b. Overnight Solar Project. SCH 2024010434. Accessed at https://ceqanet.opr.ca.gov/2024010434. January 9, 2025.

San Bernardino County. 2023. Reclamation Plan for the Haney Brown Quarry. SCH 2023090010. Accessed at https://ceqanet.opr.ca.gov/2023090010. January 9, 2025.

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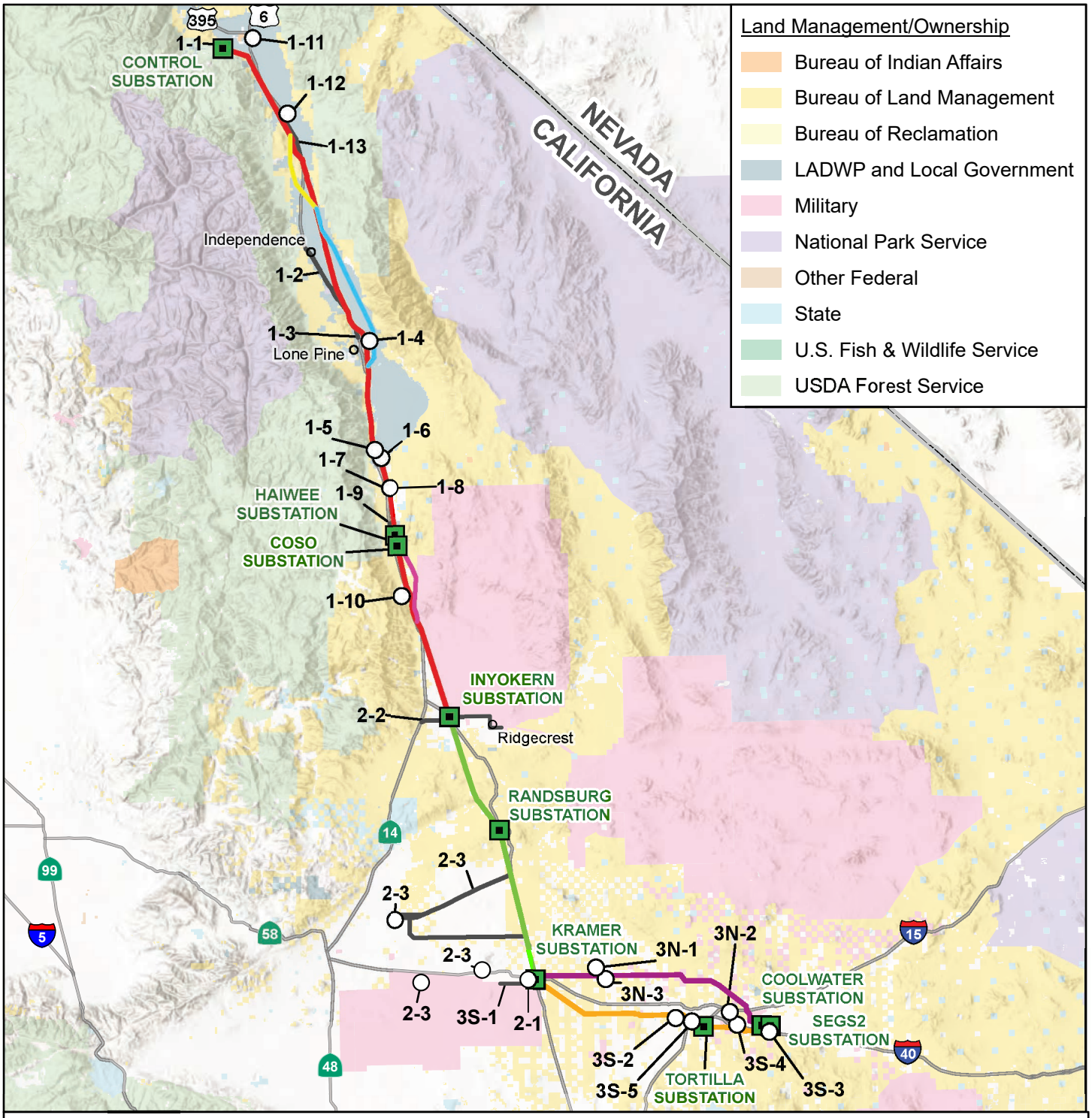


Source: Aspen, 2025; BLM, 2025; CAL FIRE, 2025; Esri, 2025; SCE, 2025.

Figure 5-1a

Overview of All Cumulative Projects

Substation
Cumulative Project
Cumulative Project (Linear)

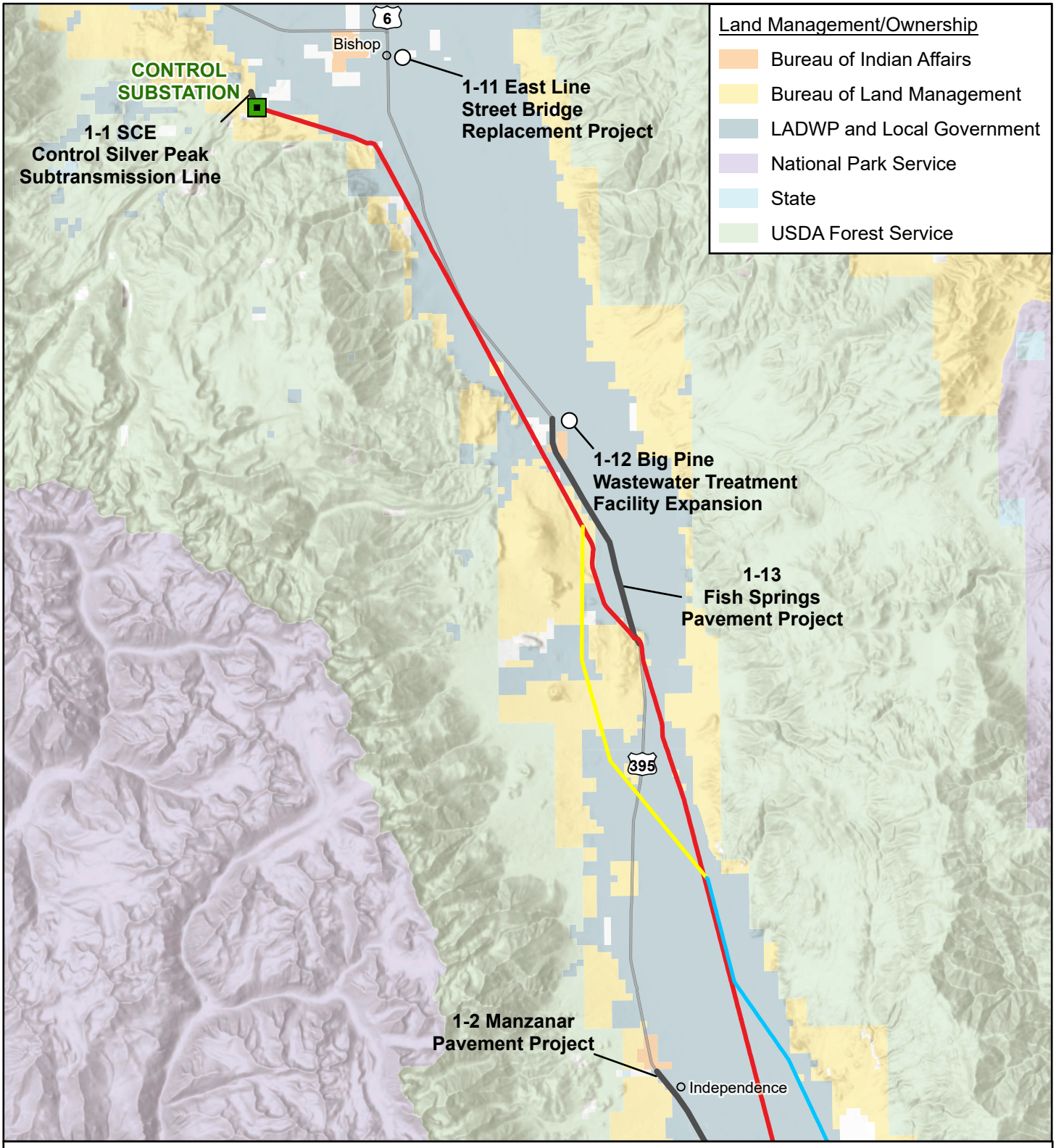
Ivanpah-Control Proposed Project Segments
- Segment 1: Control-Haiwee-Inyokern
- Segment 2: Inyokern-Kramer
- Segment 3N: Kramer-Coolwater
- Segment 3S: Kramer-Tortilla-Coolwater

Ivanpah-Control Project Alternatives
- Crater Mountain Realignment Alternative
- Fossil Falls Realignment Alternative
- Manzanar Realignment Alternative

1:1,584,000

N 0 20 Miles

Cumulative project numbers are defined in Table 5-2.



Source: Aspen, 2025; BLM, 2025; CAL FIRE, 2025; Esri, 2025; SCE, 2025.

Figure 5-1b

Cumulative Projects Segment 1 North

Ivanpah-Control Proposed Project Segments
- Segment 1: Control-Haiwee-Inyokern

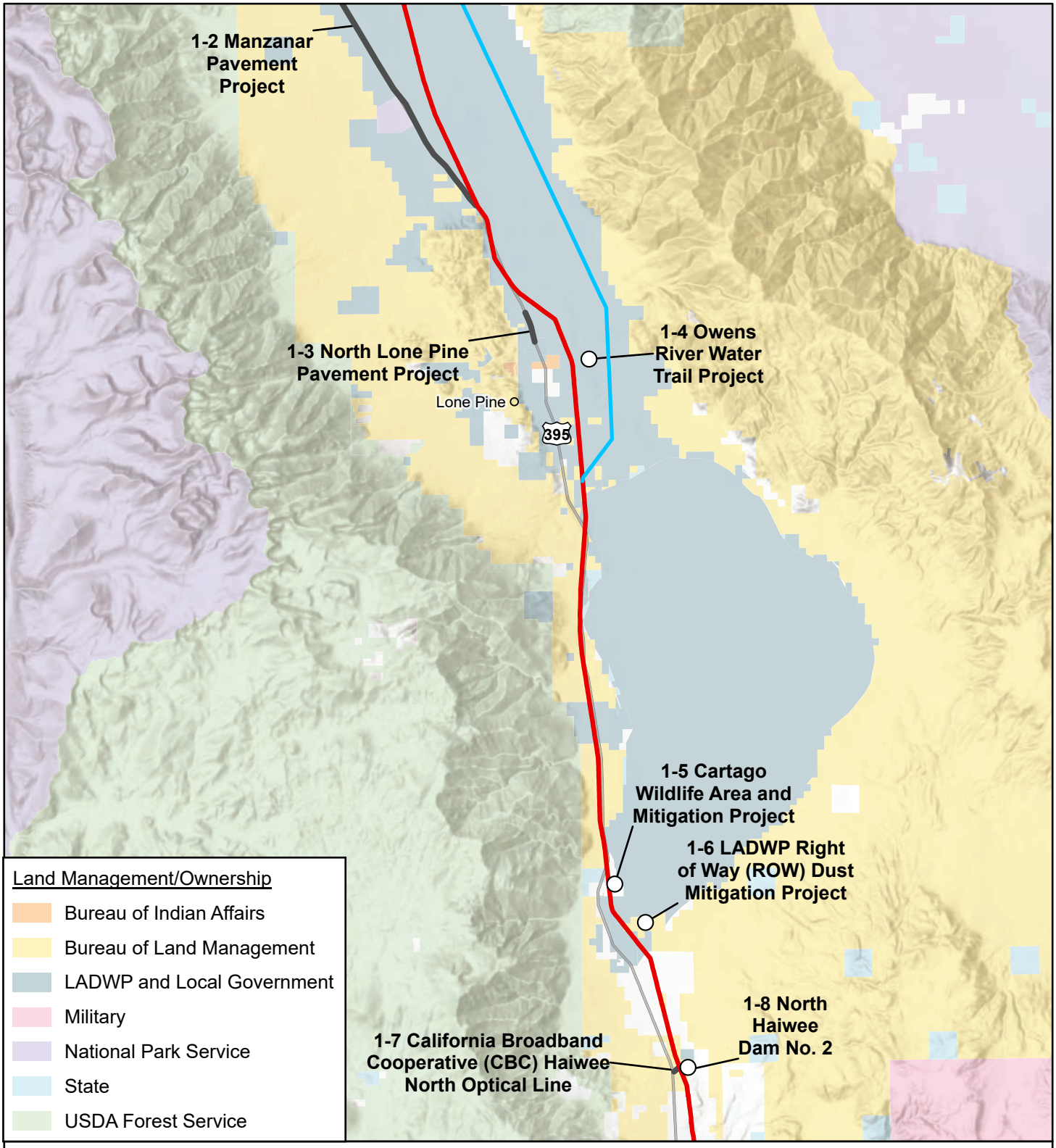
Ivanpah-Control Project Alternatives
- Crater Mountain Realignment Alternative
- Manzanar Realignment Alternative

- Substation
- Cumulative Project
- Cumulative Project (Linear)

1:316,800

N 0 5 Miles

**Cumulative project numbers are defined in Table 5-2.*



Source: Aspen, 2025; BLM, 2025; CAL FIRE, 2025; Esri, 2025; SCE, 2025.

Figure 5-1c

Cumulative Projects Segment 1 Central

Ivanpah-Control Proposed Project Segments
- Segment 1: Control-Haiwee-Inyokern

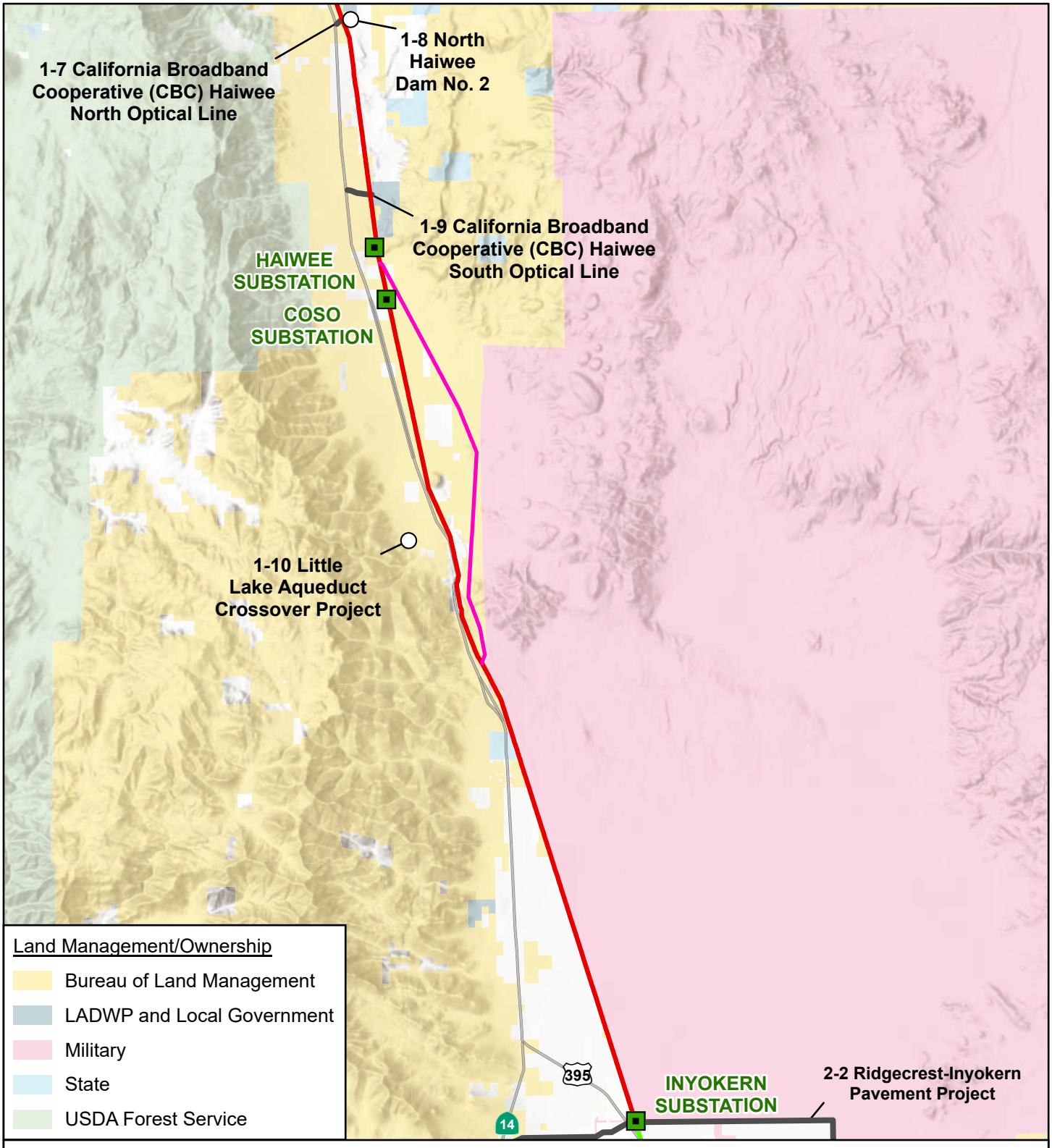
Ivanpah-Control Project Alternatives
- Manzanar Realignment Alternative

- Cumulative Project
- Cumulative Project (Linear)

1:316,800

N 0 5 Miles

**Cumulative project numbers are defined in Table 5-2.*



Source: Aspen, 2025; BLM, 2025; CAL FIRE, 2025; Esri, 2025; SCE, 2025.

Figure 5-1d

Cumulative Projects Segment 1 South

Ivanpah-Control Proposed Project Segments
- Segment 1: Control-Haiwee-Inyokern
- Segment 2: Inyokern-Kramer

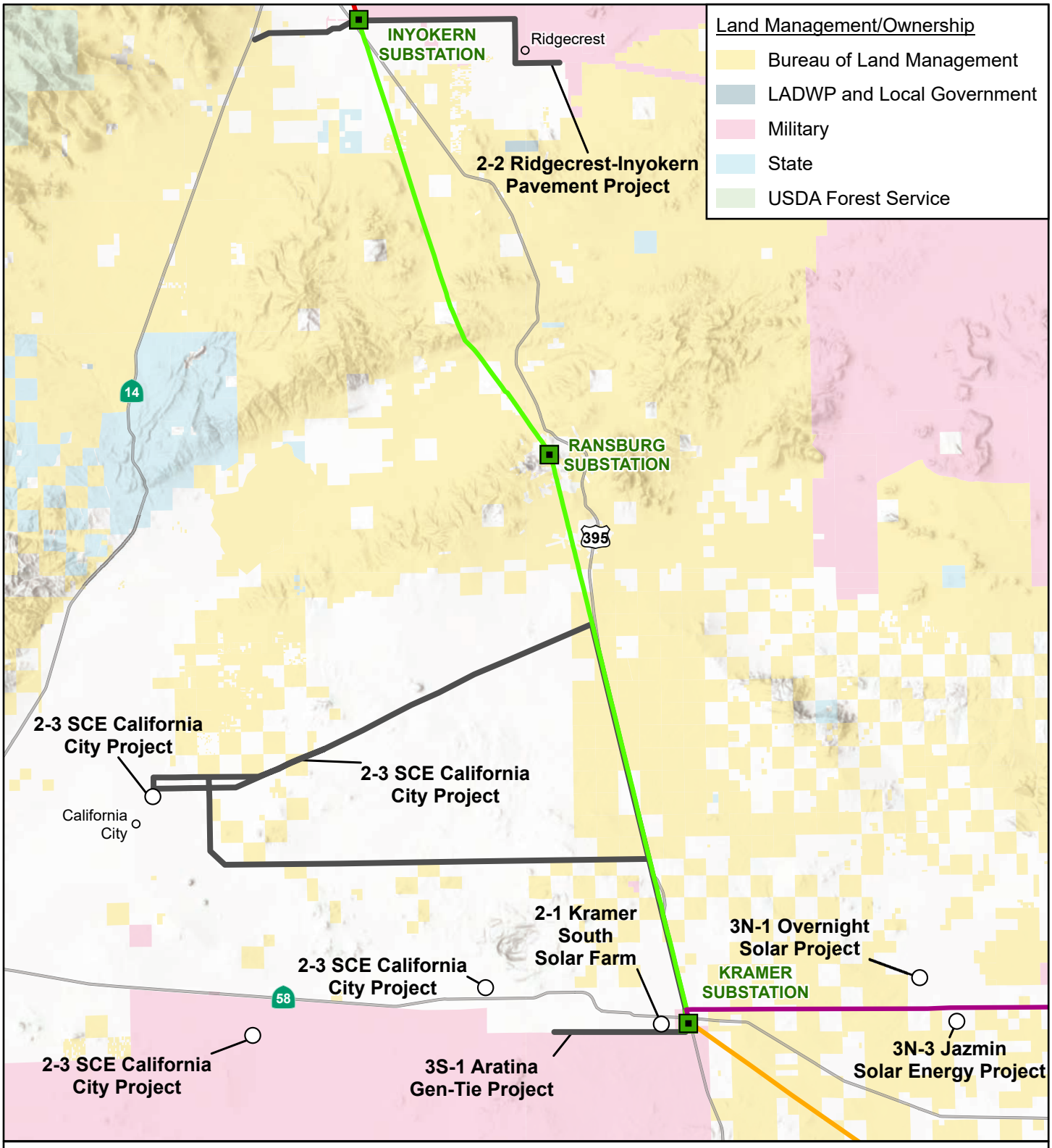
Ivanpah-Control Project Alternatives
- Fossil Falls Realignment Alternative

- Substation
- Cumulative Project
- Cumulative Project (Linear)

1:316,800

N 0 5 Miles

**Cumulative project numbers are defined in Table 5-2.*



Source: Aspen, 2025; BLM, 2025; CAL FIRE, 2025; ESRI, 2025; SCE, 2025.

Figure 5-1e

Cumulative Projects Segment 2

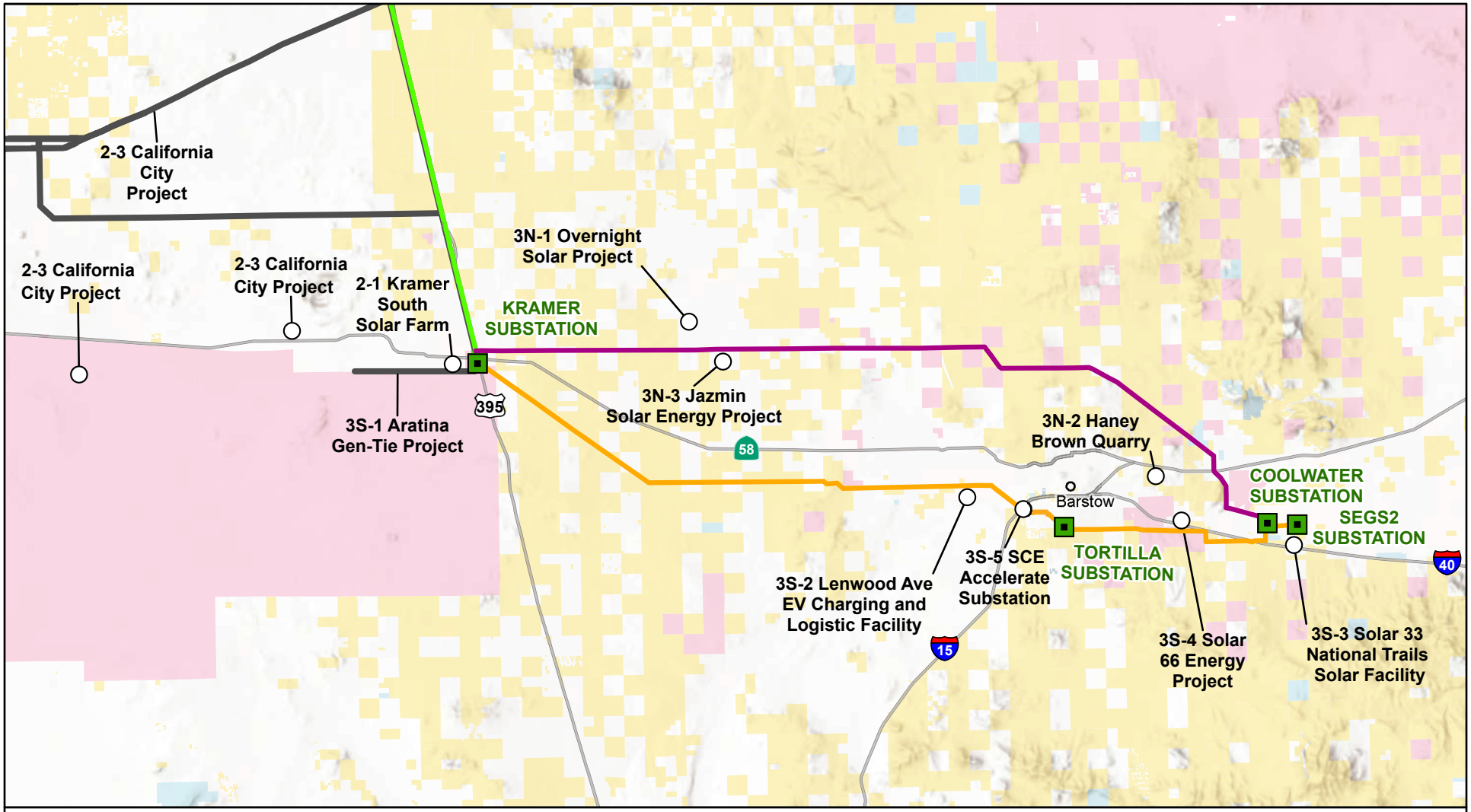
Ivanpah-Control Proposed Project Segments
- Segment 1: Control-Haiwee-Inyokern
- Segment 2: Inyokern-Kramer
- Segment 3N: Kramer-Coolwater
- Segment 3S: Kramer-Tortilla-Coolwater

- Substation
- Cumulative Project
- Cumulative Project (Linear)

1:400,000

N 0 5 Miles

**Cumulative project numbers are defined in Table 5-2.*



Source: Aspen, 2025; BLM, 2025; CAL FIRE, 2025; Esri, 2025; SCE, 2025.

Figure 5-1f

Cumulative Projects Segments 3N and 3S

Ivanpah-Control Proposed Project Segments
- Segment 2: Inyokern-Kramer
- Segment 3N: Kramer-Coolwater
- Segment 3S: Kramer-Tortilla-Coolwater

Land Management/Ownership
- Bureau of Land Management
- LADWP and Local Government
- Military
- State

- Substation
- Cumulative Project
- Cumulative Project (Linear)

1:460,000

N 0 5 Miles

**Cumulative project numbers are defined in Table 5-2.*

6. OTHER CEQA REQUIREMENTS

Chapter 6 presents discussions of several topics that CEQA requires, but that are not specifically discussed elsewhere in this EIR. These topics are:

- Section 6.1: Growth-Inducing Effects
- Section 6.2: Significant Irreversible Environmental Changes
- Section 6.3: Significant Effects That Cannot Be Avoided
- Section 6.4: Energy Conservation.

6.1. Growth-Inducing Effects

The availability of adequate electric power is one of several potential factors affecting population growth. Other factors include water supply, the availability of sewage treatment facilities, the availability of developable land, employment opportunities, housing costs and availability, commuting distances, cultural amenities, climate, and local government growth policies contained in general plans and enacted in zoning ordinances.

CEQA Guidelines Section 15126.2(e) requires that an EIR discuss the ways in which a proposed project may foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. The Guidelines state that an EIR must "...[d]iscuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly in the surrounding environment." The discussion must address how a proposed project may remove obstacles to growth or encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. For purposes of CEQA, a project that accommodates growth by removing an obstacle to growth can be considered growth-inducing.

Growth-inducing effects of a project would be considered significant if the Proposed Project directly causes population growth beyond that considered in local and regional land use plans or another relevant population growth projection. Effects would also be significant if the Proposed Project provided the means to allow for population growth beyond that considered in local and regional land use plans or another relevant population growth projection.

SCE's Proposed Ivanpah-Control Project would upgrade transmission lines between the Control Substation in Inyo County and the Coolwater Substation in San Bernardino County. The Proposed Project would upgrade and rebuild components the existing 115 kV subtransmission system that extends over 262 miles between 9 existing SCE substations across portions of Inyo, Kern, and San Bernardino counties (see Figure 1-1 in Chapter 1).

Because the Ivanpah-Control 115 kV subtransmission lines already exist and would only be replaced or strengthened through this Proposed Project, there would be limited potential for growth-inducing effects to occur. As stated in Section 2.3, the Project is not designed to increase capacity. While the capacity of the line could be somewhat greater than its current electrical capacity, depending on the type of conductor that SCE installs, capacity would be limited by equipment at existing substations. Therefore, no expansion of electricity services would result from the Proposed Project.

The only remaining potential for growth-inducing effects would arise from direct and indirect employment associated with construction of Proposed Project facilities. The Proposed Project would not contribute *directly* to the creation of permanent jobs or housing in the SCE service area. The Project's construction period is of limited duration and, as discussed in Section 6.1.1, would not result in in-migration or long-term job creation.

6.1.1. Growth Caused by Direct and Indirect Employment

As indicated in Section 2.3.8 (Construction Equipment and Workforce) the daily workforce necessary for construction of the Proposed Project is anticipated to be up to a maximum of 200 personnel working on any given day. The actual numbers of personnel would vary from day to day, depending on the tasks being executed and the number of active construction locations.

Removing existing transmission lines and structures and installing new and replacement transmission lines and structures while minimizing power outages will require a complex construction schedule. It is expected that multiple locations would be under construction simultaneously and that different activities will be occurring at different locations. To be conservative, the maximum estimated average daily workforce is assumed for the Proposed Project duration. If a substantial number of workers were to relocate to the project area permanently, this would have the potential to cause population growth. However, as discussed in Section 3.16 (Population and Housing), a large local construction workforce is available within reasonable commute distance of all project components. The construction workforce can be drawn from the large population centers in Kern and San Bernardino counties, with workers also available from Riverside, Orange and Los Angeles counties.

Because few, if any, workers are expected to relocate permanently to the project area; no new demand for local housing is expected to be attributable to the Proposed Project. Personnel are not expected to permanently relocate to support project operation, because the SCE's existing operational staff for the existing subtransmission facility would continue to operate the replacement facilities. Therefore, the project would not result in new demand on local public services or facilities that serve the Proposed Project route and region.

Section 3.16 (Population and Housing) describes the existing labor force within the Proposed Project area. Due to the size of the labor force in the region, it is assumed that much of the labor force required for construction would come from within the region, with specialty tradespersons temporarily relocating from elsewhere during the construction period.

The number of workers in the construction trades locally is indicative of the labor pool that may be available to work on the project. In addition to the labor pool in the immediate vicinity of the project, the larger regional labor pool can be tapped as well, as construction workers typically work throughout the region in which they reside.

At the peak of construction-related activities, the Proposed Project would require an estimated maximum of 200 workers per day. As shown in Table 3.16-1 in Section 3.16, San Bernardino and Kern counties have a combined workforce of nearly 1,300,000 persons. The workforce needed for the project is an exceedingly small portion of the total workforce found in San Bernardino and Kern counties. The majority of these workers would be expected to commute between their homes and individual work sites or assembly points. A limited number of construction personnel may choose to stay at existing local hotels during construction in lieu of commuting.

Transmission line, fiber optic, and substation construction require a mix of skills. Many skills are available locally; other skills are specialized and specific to the electrical industry. Workers with the required specialized skills often relocate temporarily from elsewhere to work on a project for a series of months. If workers moved to the area from out of state, they would require housing. The vacancy rate in rental units in the project vicinity (provided in Table 3.16-1) indicates there is a sufficient supply of housing available for transient workers. There is an adequate supply of hotels and other short-term and long-term rental situations within the Proposed Project area to accommodate out-of-town (non-commuting) personnel. Some workers temporarily relocating to the area may also bring or acquire trailers in which to live. Therefore, no growth in residential housing or services would occur. Activities associated with construction of the

Proposed Project would not increase demand for housing, induce population growth, or be considered growth-inducing.

Operation of SCE's transmission line upgrades would require routine and ongoing maintenance. These activities would be similar in nature and extent to those currently occurring on the existing transmission line. This work is typically completed by existing SCE staff. No increase in duration, intensity, or frequency is expected. Therefore, operation and maintenance activities would not result in a permanent increase to the local population, increase demand for housing, or be considered growth-inducing.

6.1.2. Conclusions Regarding Growth-Inducement

The construction and operation of the Proposed Project would not result in a permanent increase in the local population or demand for housing or be considered growth inducing from a community growth perspective. Construction of the Proposed Project would not result in a significant in-migration of workers or create long-term jobs; therefore, the construction phase of the project is not considered to be growth inducing.

6.2. Significant Irreversible Environmental Changes

Pursuant to Section 15126.2 (c) of the CEQA Guidelines, an EIR must address significant irreversible and irretrievable environmental changes that would be caused by a Proposed Project. These changes include uses of nonrenewable resources during construction and operation, long-term or permanent access to previously inaccessible areas, and irreversible damages that may result from project-related accidents.

Destruction of or Damage to Cultural and Tribal Cultural Resources. The Owens Valley (Segment 1) portion of the Proposed Project would occur in an area of exceptionally high archaeological sensitivity and continuing cultural importance to descendant communities. Ground disturbance in this highly sensitive area with a high density of known resources has a high likelihood of impacting known archaeological resources and encountering significant buried deposits whose scientific and cultural values extend beyond the recoverable data alone. While recommended mitigation measures would reduce adverse effects to the extent feasible, the construction of the Proposed Project would nonetheless result in the permanent loss of portions of resources within a culturally rich and sensitive archaeological area.

Energy Consumption. Implementation of the Proposed Project would result in the consumption of energy in the form of fuel needed for vehicles and equipment used during construction. Additional energy would be required for the manufacture of new materials for the project, some of which would not be recyclable at the end of the Proposed Project's lifetime. The energy required for the production of these materials also would result in an irretrievable commitment of natural resources. The anticipated equipment, vehicles, and materials required for construction of the Proposed Project are detailed in Section 2.4 (Project Construction). Maintenance and inspection of the Proposed Project would not change appreciably from SCE's existing activities in project area and thus would not cause a substantial increase in the consumption or use of nonrenewable resources.

Habitat Loss. Implementation of the Proposed Project would additionally result in the permanent loss of over 1,000 acres of vegetation and habitat, which is approximately 84 percent of the total land disturbed for construction. As discussed in Section 3.5 (Biological Resources), the mitigation measures for biological resources recommended in this EIR would reduce impacts from project-induced loss of vegetation and habitat to below the level of significance.

Use of Hazardous Materials. Construction and operation of the Proposed Project would require the use of a limited amount of hazardous materials such as fuel, lubricants, and solvents. Additionally, during project construction and operation preexisting soil or groundwater contamination potentially could be encountered. All hazardous materials would be stored, handled, and used in accordance with the

mitigation measures recommended in this EIR and applicable federal, State, and local regulations, including a construction-phase Storm Water Pollution Prevention Plan (SWPPP) and operational-phase Hazardous Materials Business Plan and Storm Water Management Plan. Assuming appropriate implementation of these plans and practices, as well as the mitigation measures recommended in Section 3.11 (Hazards and Hazardous Materials), potential environmental accidents associated with the Proposed Project would be less than significant

6.3. Significant Effects that Cannot be Avoided if the Proposed Project is Implemented

Section 15126.2(b) of the CEQA Guidelines requires that an EIR identify significant environmental effects which cannot be avoided by the project, even with implementation of mitigation measures. The environmental impacts of the Proposed Project are described in the environmental analysis sections in Chapter 3. Impacts that are significant and cannot be reduced to less than significant levels through the application of feasible mitigation measures have been characterized as significant and or unavoidable impacts. The three significant and unavoidable impacts resulting from the Proposed Project are summarized below. Complete descriptions of these impacts are presented in Chapter 3.

Impact AE-2: Substantially damage scenic resources within a State scenic highway.

Impact AE-2 is found to be significant and unavoidable for aesthetics impacts in two areas:

- First, for Material Yard 1-7 and between Mileposts 24 and 26, the impact is significant due to its location about 400 feet east of the Designated Scenic Highway segment of US 395. The material yard would induce visual contrast and industrial character.
- Second, between Mileposts 24 and 26, the Proposed Project would replace 11 existing monopoles with 18 larger and more visually prominent poles. The additional structures and their increased height would further impair public views of the valley landscape and Inyo Mountains from the State scenic highway.

Impact CUL-1: Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines §15064.5.

The Owens Valley (Segment 1) portion of the Proposed Project would occur in an area of exceptionally high archaeological sensitivity and continuing cultural importance to descendant communities. Ground disturbance in this highly sensitive area with a high density of known resources has a high likelihood of impacting known archaeological resources and encountering significant buried deposits whose scientific and cultural values extend beyond the recoverable data alone. While recommended mitigation measures would reduce adverse effects to the extent feasible, the construction of the Proposed Project would nonetheless result in the permanent loss of portions of resources within a culturally rich and sensitive archaeological area.

In addition to the Proposed Project's impacts, the contribution of the Project's effects on historical resources is found to be significant, cumulatively considerable, and unavoidable.

Impact TCR-1: Cause a substantial adverse change in the significance of a tribal cultural resource that is listed or eligible for listing in the California Register of Historical Resources.

Under CEQA, the Owens Valley Landscape qualifies as a TCR due to its ongoing significance to local Native American communities. It is not only a place of historic and archaeological value but also a living cultural landscape where traditional practices are actively maintained. The Proposed Project requires a substantial amount of construction within this landscape. Additionally, the original construction of the transmission infrastructure has already caused both direct and indirect impacts to the OVL by physically altering the

cultural landscape. The Proposed Project would require both the removal of existing structures and the replacement of these structures in similar locations.

While recommended mitigation measures would substantially reduce the potential for unmitigated loss of information value, it is important to recognize that, from the perspective of consulting tribes, any disturbance to precontact archaeological resources, regardless of scientific intent, constitutes a significant direct impact to the Owens Valley Landscape as a Tribal Cultural Resource. These impacts are not solely about data loss but also about the disruption of cultural and spiritual connections to the land.

In addition to the Proposed Project's impacts, the contribution of the Project's effects on the Owens Valley Landscape is found to be significant, cumulatively considerable, and unavoidable.

6.4. Energy Conservation

Pursuant to Appendix F (Energy Conservation) of the CEQA Guidelines, an EIR must address potential energy impacts of Proposed Projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy.

The Proposed Project would upgrade transmission lines between the Control Substation in Inyo County and the Coolwater Substation in San Bernardino County. The Proposed Project would upgrade and rebuild components the existing 115 kV subtransmission system that extends over 262 miles between 9 existing SCE substations across portions of Inyo, Kern, and San Bernardino counties.

As stated in Section 6.2 (Significant Irreversible and Irretrievable Changes) construction activity associated with the Proposed Project or any of the alternatives would require the consumption of fuel for construction vehicles, construction equipment, and helicopter use. Additionally, construction would require the manufacture and delivery of new materials, which would require energy use. Based on their composition, some of the structures and conductors to be removed would be recyclable. As well, at the end of the Proposed Project's lifetime, materials installed as part of the project would be recyclable. Recycling would reduce the energy needs of materials production, as compared to manufacturing materials from new raw materials such as ore or petroleum. Maintenance and operations and inspection of the Proposed Project would not change appreciably from SCE's existing activities in project area and thus would not cause a substantial increase in the consumption or use of nonrenewable resources.

SCE's implementation of traffic mitigation requirements would also reduce energy consumption. SCE would be required to prepare a Construction Transportation Plan (Mitigation Measure T-1a), which will include methods of reducing crew-related traffic, such as carpooling from assembly points. The California Air Resources Board (CARB) limits idling time of construction vehicles, reducing emissions and fuel use. Such measures would increase the energy efficiency of the project.

See also the discussion of energy consumption in Section 3.8, which concludes that the consumption of energy resources during operation of the Project would not be wasteful, inefficient, or unnecessary, with implementation of Mitigation Measure AQ-2a (Control Off-Road Equipment Emissions with Tier 4 Engines).

No increases in inefficiencies or unnecessary energy consumption are expected to occur as a direct or indirect consequence of the project.

7. MITIGATION MONITORING AND REPORTING PLAN

The CPUC is the CEQA Lead Agency. In that role, if the Proposed Project or an alternative is approved, the CPUC is responsible for ensuring that monitoring and reporting on required mitigation occurs. This section describes the implementation of the CPUC's typical mitigation monitoring process.

As the Applicant and project proponent, SCE would be responsible for implementing all applicable measures, including the adopted mitigation measures, Applicant Proposed Measures (APMs), and conditions of project approval, as well as conditions imposed in any permits or regulations administered by other responsible agencies.

The Mitigation Monitoring and Reporting Plan (MMRP) for the Proposed Project (or approved alternative) establishes the approach to implementing the mitigation measures and APMs identified in the EIR. If the project is approved and the MMRP described below is adopted by the CPUC, a detailed Mitigation Monitoring, Compliance, and Reporting Program (MMCRP) will be developed, as described in Section 7.2 (Content and Organization of the MMCRP). The MMCRP would be the mechanism for CPUC implementation of the MMRP.

The MMRP is presented in Table 7-1 (see Section 7.7). Table 7-1 is organized first by environmental topic (i.e., Aesthetics, Biological Resources, etc.) and subsequently by APM or mitigation measure. Table 7-1 includes:

- APMs and Mitigation Measures that SCE must implement as part of the Proposed Project or any approved Alternative
- Monitoring and reporting requirements
- Effectiveness criteria
- Timing and location of implementation for each measure

The CPUC's mitigation monitoring approach is to develop a more detailed Mitigation Monitoring, Compliance, and Reporting Program (MMCRP) after approval of the project or an alternative. The MMCRP would establish the approach to implementing the adopted mitigation measures and APMs identified in the EIR, as described in Section 8.2 below, as well a permit conditions of approval. The MMCRP defines the detailed mechanisms used by the CPUC to comply with CEQA's requirements for mitigation monitoring.

The MMCRP would define the CPUC's environmental monitoring and reporting activities throughout preconstruction compliance to support Notice to Proceed (NTP) activities, during project construction, and site rehabilitation and restoration after construction is completed. It would detail how and when the mitigation measures and other requirements would be implemented. The MMCRP would also identify duties and responsibilities of the various parties, communication protocols to follow, and record management requirements. The MMCRP would be prepared and approved prior to any NTPs being issued and before the initiation of any construction.

7.1. Authority for Mitigation Monitoring

7.1.1. California Public Utilities Commission

The California Public Utilities Code confers authority upon the CPUC to regulate the terms of service and the safety, practices, and equipment of utilities subject to its jurisdiction. It is CPUC practice, pursuant to its statutory responsibility, to protect the environment and to require that mitigation measures stipulated as conditions of approval be properly implemented, monitored, and reported on. This requirement is codified statewide as Section 21081.6 of the Public Resources Code, which requires a public agency to adopt a mitigation monitoring or reporting program, or both, when it approves a project that is subject to

preparation of an EIR and where the EIR for the project identifies significant adverse environmental effects. CEQA Guidelines Section 15097 describes agency requirements for mitigation monitoring or reporting.

The purpose of the detailed MMCRP is to ensure that the measures adopted to mitigate or avoid significant impacts of a project are implemented, and to report on their implementation. The CPUC views the MMCRP as a working guide to facilitate implementation of mitigation measures imposed by the approving agencies and any measures proposed by the project proponent, and to provide for the monitoring, compliance, and reporting activities of the CPUC and its designated monitors.

As described above, the CPUC will address its responsibilities under Public Resources Code Section 21081.6 when it takes action on SCE's application for a Permit to Construct. If the Commission approves the Proposed Project or an alternative, it also will adopt the mitigation monitoring and reporting program (MMRP), and it will include the mitigation measures as a condition of approval. The MMRP would be incorporated into the MMCRP.

7.1.2. Bureau of Land Management

National Environmental Policy Act (NEPA) compliance is being completed in a separate process with the Bureau of Land Management (BLM), as the federal Lead Agency for the preparation of an EIS in compliance with NEPA. As the federal Lead Agency, BLM is responsible for ensuring that its own adopted mitigation measures are implemented on land it administers. BLM may coordinate with the CPUC in implementation of mitigation monitoring during construction of the Proposed Project.

7.2. Content and Organization of the MMCRP

If the Proposed Project or an alternative is approved, the CPUC would develop the MMCRP in accordance with the description in this section. The MMCRP would serve as a self-contained guide for implementing the program throughout project construction.

The Final MMCRP would contain a concise overview and description of the approved project, outline its physical locations and geographic limits, and, to the extent known, provide the project schedule. It would include all adopted mitigation measures and would specify the master reference document(s) that the monitors and the Applicant would use in carrying out the program (e.g., the Final EIR, detailed working maps and plans, issued permits). The APMs to which SCE has committed would be incorporated to the extent they have not been superseded by specific mitigation measures in the EIR.

The MMCRP would include a list of the agencies having jurisdiction over various aspects of the project, and a description of where these respective jurisdictions occur. For example, the MMCRP would state which California Department of Fish and Wildlife regional office has jurisdiction and provide contact information, including the designated representative's name, address, email, and telephone and fax numbers.

The MMCRP would also include definition of the manner in which SCE's monitoring team would interact with the CPUC staff and consultants, and BLM if appropriate. In addition, the MMCRP would define SCE's required submittals to the agencies, and protocol for interactions among agency and SCE team members.

The MMCRP would be structured as follows:

A. Introduction

- Authority and Purpose of the Program
- Jurisdictional Agencies
- Project Description
- Organization of the MMCRP

B. Roles and Responsibilities

- Monitoring Responsibility
- Enforcement Responsibility
- Mitigation Compliance Responsibility
- Communications
- Dispute Resolution
- SCE Roles
- Identification of the qualified SCE team members who would verify that all adopted measures and conditions have been successfully implemented
- Organization of the SCE team, including specifying duties, roles, and responsibilities
- Identification of primary SCE contacts for CPUC environmental monitoring staff liaison

C. General Monitoring and Compliance Procedures

- Environmental Monitors
- Construction Personnel
- General Reporting Requirements
  - SCE Compliance Levels for internal reporting
  - SCE Daily Incident Summary format and protocol
  - SCE Weekly Monitoring Report format and content
  - SCE Annual Monitoring Report format and content
- Records Management and Public Access to Records

D. Mitigation Measure Tables

7.3. Roles and Responsibilities

Responsibility for implementing the adopted measures rests with SCE, unless otherwise specified in the measure. As Lead Agency under CEQA, the CPUC is responsible for monitoring an approved project to ensure that required mitigation measures and APMs are implemented. The required mitigation monitoring program would be implemented through the MMCRP. The purpose of mitigation monitoring is to ensure that the mitigation measures adopted by the CPUC are implemented and that mitigated environmental impacts are reduced to the level identified in the EIR.

The CPUC may delegate duties and responsibilities for monitoring to environmental monitors or consultants working on behalf of the agencies. Some monitoring responsibilities may be assumed by responsible agencies, where areas or resources under their jurisdiction are potentially affected or involved.

SCE would deploy its own monitors for its own purposes, to ensure implementation of its commitments and execution of its responsibilities. The number of SCE construction monitors assigned to the project would be determined by the utility and would depend on the number of concurrent construction activities underway, their locations, and the types of resources potentially affected. The CPUC would ensure that persons assigned to monitoring duties by SCE are qualified to undertake those duties.

When a mitigation measure requires that a study or plan be developed during the design or pre-construction phase of the project, SCE must submit the final study or plan to CPUC for review and approval. Any study or plan that requires approval of the CPUC must allow at least 60 days for adequate review. Other agencies and jurisdictions with authority over aspects of the project or particular resources may require additional review time. It would be the responsibility of the CPUC environmental monitoring team to confirm that appropriate opportunities for agency reviews have occurred and required approvals obtained.

7.3.1. Enforcement Responsibility

The CPUC would be responsible for monitoring implementation of the MMCRP and enforcing the procedures adopted. Generally, this would be done through the Environmental Monitor(s) assigned by the CPUC. For example, the Environmental Monitor(s) would oversee the implementation of all project mitigation requirements. The Environmental Monitor(s) would be supported by resource specialists when work is occurring in areas with highly sensitive cultural, tribal cultural, or biological resources. In addition, if the CPUC's Environmental Monitor(s) or resource specialists note conditions or situations falling within the purview of other agencies, they may notify the appropriate agencies or individuals about any problems, in coordination with the CPUC.

As the State' regulator of investor-owned utilities, CPUC has the authority to halt any construction, operation, or maintenance activity associated with the project if the activity is determined to be a deviation from the approved project or the adopted mitigation measures.

7.3.2. Compliance Responsibility

SCE would be responsible for successfully implementing all the adopted mitigation measures in the MMCRP. The MMCRP would contain criteria that define whether mitigation is successful. Standards for successful mitigation also are implicit in many mitigation measures that include such requirements as obtaining permits or avoiding a specific impact entirely. Other mitigation measures include success criteria that are listed in a table at the end of each resource impact evaluation section of the EIR. Additional mitigation success thresholds may be established through the review and approval of specific plans required under mitigation measures and by another agency with applicable jurisdiction during that agency's permitting process.

SCE would inform CPUC and the Environmental Monitors in writing of any mitigation measures that are not or cannot be successfully implemented and provide alternative approaches for successful mitigation implementation. The CPUC, in coordination with its Environmental Monitors, would review the alternative approach to determine if it is adequate and whether an MPR or PFM would apply.

7.4. Project Changes

During the course of construction, circumstances may arise that require deviations from the project as approved. The CPUC, along with its environmental monitors, would evaluate any proposed deviations from the approved project to ensure they are consistent with CEQA requirements. Depending on its nature, a requested deviation would be processed as a Minor Project Refinement (MPR) or be the subject of a Petition for Modification (PFM) submitted by the Applicant.

MPRs would be strictly limited to minor project changes that do not trigger additional permit requirements, do not increase the severity of an impact or create a new significant impact, and are within the geographic scope of the EIR's analysis.

If a project change would create or have the potential to create a new significant impact, increase the severity of an impact, or occur outside the geographic area evaluated in the EIR, the Applicant would be required to submit a PFM. The CPUC would evaluate the PFM under CEQA, as appropriate to determine what form of supplemental environmental review would be required.

7.5. Dispute Resolution

The following procedure will be observed for dispute resolution between CPUC staff and the applicant: Disputes and complaints should be directed to the CPUC Project Manager for resolution.

- Should this informal process fail, the CPUC Project Manager may initiate enforcement or compliance action to address deviations from the approved project.

7.6. General Monitoring Procedures

7.6.1. Environmental Monitors

Many of the monitoring procedures would be conducted during the construction phase of the project. The CPUC and Environmental Monitors are responsible for integrating the mitigation monitoring procedures into the construction process in coordination with SCE. To oversee the monitoring procedures and to ensure success, the Environmental Monitors assigned must be onsite during construction activity having the potential to create a significant environmental impact or other impact for which mitigation is required. The Environmental Monitors are responsible for ensuring that all procedures specified in the monitoring program are followed.

7.6.2. Construction Personnel

A key element in the success of mitigation and mitigation monitoring is the full cooperation of construction personnel and supervisors. Successful implementation of many of the mitigation measures requires specific actions and behaviors on the part of the construction supervisors or crews. To ensure success, the following actions, detailed in specific mitigation measures included in the MMCRP, would be taken:

- Procedures to be followed by construction companies engaged to do the work would be written into their contracts with SCE. Procedures to be followed by construction crews would be written into a separate agreement that all construction personnel would be asked to sign, denoting consent to the procedures.
- As specified by mitigation, a Worker Environmental Awareness Program (WEAP) would be conducted to inform and train construction personnel about the requirements of the monitoring program (as detailed in the MMCRP). The CPUC Environmental Monitors would verify that each crew member received the required training.
- A written summary of mitigation monitoring procedures would be provided to construction supervisors for all mitigation measures requiring their attention.

7.6.3. Reporting Procedures

Detailed weekly reports would be prepared and submitted by the CPUC environmental monitoring team. These would include detailed information on construction activities, compliance activities observed by the Environmental Monitors and others documented by SCE, any issues and their resolution, and photographs of relevant activities and conditions.

SCE is required to have its own monitors for particular resources, depending on project needs and activities. These monitors provide daily reports/surveys that are entered into SCE's field record environmental database (FRED) system. It is assumed that FRED or a similar database would be employed on this project. CPUC Environmental Monitors would have access to the reports. Construction is not allowed to start in a particular area until the required pre-construction surveys and flagging/staking are completed per the MMCRP, and the CPUC environmental monitor has validated compliance.

SCE is to provide the CPUC with written weekly and annual reports of the project, which shall include progress of construction, resulting impacts, mitigation implemented, and all other noteworthy elements of the project.

7.6.4. Public Access to Records

The CPUC provides public access to records and reports used to track the monitoring program. Monitoring records and reports would be made available for public inspection by the CPUC on request. The CPUC and SCE would develop a filing and tracking system. For additional information on mitigation monitoring and

reporting for the project, the Energy Division of the CPUC would maintain an Internet website, accessible at:

https://ia.cpuc.ca.gov/environment/info/aspen/ivanpah-control/ivanpah-control.htm.

To facilitate the public's awareness during construction, the CPUC would make weekly reports available on the website.

7.7. Mitigation Monitoring and Reporting Program

Table 7-1. Mitigation Monitoring and Reporting Program

Aesthetics	
APM AES-8	**Night Lighting during Construction of Facilities**
Location:	All Project areas
Monitoring/Reporting Action:	SCE to implement night lighting
Effectiveness Criteria:	Night lighting is implemented as approved
Responsible Agency:	CPUC
Timing:	During construction and operation activities
APM AES-8	**Night Lighting during Construction of Facilities.** If associated with a significant aesthetic impact, night lighting for construction activities, staging areas and other areas used for construction, as well as nighttime facility operations, shall be the minimum necessary to ensure safety and security for nighttime activities and operations. All night lighting used for construction or operations and maintenance shall orient lights downward and be shielded to eliminate off-site light spill at times when the lighting is in use. Lighting at construction locations and Project facilities shall consist of light-emitting diode lights in all areas where nighttime operations or maintenance activities will occur and be either motion-activated or use timers to ensure safety and security and reduce the impact of additional light pollution.
Mitigation Measure AES-3a	**Apply Corten finish to select tubular steel poles.**
Location:	Project structures 915 through 954 only
Monitoring/Reporting Action:	Surface Treatment Plan to be submitted to CPUC
Effectiveness Criteria:	Treatment Plan is implemented as approved
Responsible Agency:	CPUC
Timing:	60 days prior to the start of construction
AES-3a	**Apply Corten finish to select tubular steel poles.** A Corten (or similar rust-colored) finish shall be applied to Proposed Project structure numbers 915 through 954 (north to south) in The Narrows. At least 60 days prior to the start of construction, SCE shall prepare a Surface Treatment Plan for the identified structures and submit it to the CPUC for review and approval.

Agriculture and Forestry Resources	
Mitigation Measure AF-6a	**Minimize Construction Impacts on Active Agricultural Operations.**
Location:	Areas where active agricultural operations could be affected by Project construction or operation
Monitoring/Reporting Action:	CPUC to ensure that SCE coordinates with agricultural operators as defined
Effectiveness Criteria:	Agricultural operators are able to coordinate with SCE to minimize effects
Responsible Agency:	CPUC
Timing:	60 days prior to start of construction
AF-6a	**Minimize Construction Impacts on Active Agricultural Operations.** SCE shall identify areas where crops and irrigation equipment (i.e., irrigation lines, wells, pumps, ditches, and drains) are

Agriculture and Forestry Resources	
	located within and immediately adjacent to access roads, construction work areas, and overhead conductor stringing areas at least 60 days prior to construction. Direct impacts to crops shall be avoided to the extent possible. If direct impacts to crops cannot be avoided, then SCE shall notify the owner in advance and, within 90 days following project impacts on crops, SCE shall provide compensation for crop loss in the affected area. Topsoil where crops are impacted shall be preserved in place or stockpiled nearby and replaced following construction. Irrigation infrastructure shall be clearly marked for avoidance, and if necessary, protected with temporary materials (i.e., steel plates, blankets, etc.) to prevent inadvertent damage during construction. Any inadvertent damage to irrigation infrastructure shall be repaired to pre-construction conditions, or compensation shall be provided to the owner for the damages. SCE shall coordinate the timing of conductor installation activities over farms with farm operators to communicate safety considerations and reduce the potential for disrupting watering schedules and indirectly impacting crops. SCE shall schedule conductor installation over farms to minimize impacts to the watering schedule to the extent possible. If conductor stringing would conflict with critical watering periods and result in indirect crop loss, SCE shall provide compensation for either (a) alternative watering methods, if necessary, during the conductor stringing period or (b) crop loss as a result of project activities that cannot be avoided.
Mitigation Measure AF-6b	**Avoid Operational Conflicts with Existing Agricultural Irrigation.**
Location	Areas where active agricultural operations could be affected by Project construction or operation
Monitoring/Reporting Action	CPUC to ensure that SCE identifies locations of agricultural irrigation as defined
Effectiveness Criteria	SCE documents protection of irrigation equipment
Responsible Agency	CPUC
Timing	60 days prior to start of construction
AF-6b	**Avoid Operational Conflicts with Existing Agricultural Irrigation.** At least 60 days before the start of construction, SCE shall identify the locations of agricultural irrigation infrastructure along the rebuilt subtransmission line and ensure any potential conflicts are avoided. SCE shall ensure that there is adequate clearance between the irrigation equipment and SCE's electrical equipment, or alternatively, that the irrigation equipment would be adequately protected, such as but not limited to the installation of grounding equipment. This conflict avoidance shall be documented in a memorandum submitted to the CPUC at least 30 days before construction.

Air Quality	
APM AQ-1	**Tier 4 Construction Equipment (Superseded by Mitigation Measure AQ-2a)**
APM AIR-2	**Asbestos Management**
Location:	Load-bearing structures to be removed
Monitoring/Reporting Action:	Asbestos testing and notification of results
Effectiveness Criteria:	Asbestos testing is implemented as approved, and notification occurs to the EFS and BAAQMD
Responsible Agency:	CPUC and BAAQMD
Timing:	Notification to EFS 45 days prior to work commencing. BAAQMD notification 10 working days prior to work (demolition) commencing.
APM AIR-2	**Asbestos Management.** If any load-bearing structure (poles, towers, concrete pads) is to be removed, this project will require asbestos testing and notification to BAAQMD. Notify the Environmental Field Specialist (EFS) at least 45 days prior to work commencing. BAAQMD must be notified at least 10 working days prior to work (demolition) commencing. If the construction start date changes, notify the EFS immediately as notification to BAAQMD may need to be resubmitted. EFS is responsible for obtaining any necessary permits from BAAQMD prior to the start of work.

Air Quality	
Mitigation Measure AQ-2a	**Control Off-Road Equipment Emissions with Tier 4 Engines (Supersedes APM AQ-1).**
Location:	Entire Project
Monitoring/Reporting Action:	CPUC to verify that SCE uses required engine types
Effectiveness Criteria:	Emissions are reduced based on use of cleaner engines
Responsible Agency:	CPUC
Timing:	Ongoing during construction

AQ-2a **Control Off-Road Equipment Emissions with Tier 4 Engines (Supersedes APM AQ-1).** All off-road construction equipment with rating between 100 and 750 horsepower (hp) shall be required to use engines compliant with U.S. EPA Tier 4 Final non-road engine standards. In the event a Tier 4 Final engine is not available for any off-road construction equipment with rating at or higher than 100 hp, that engine shall be equipped with a Tier 4 Interim or Tier 3 engine, and documentation of Tier 4 Final engine unavailability shall be provided.

Mitigation Measure AQ-2b	**Control Fugitive Dust Emissions.**
Location:	Entire Project
Monitoring/Reporting Action:	CPUC to verify that SCE implements required dust control measures
Effectiveness Criteria	Visible dust plumes are minimized
Responsible Agency	CPUC
Timing:	Ongoing during construction

AQ-2b: **Control Fugitive Dust Emissions.** During construction, fugitive dust shall be controlled to a level that prevents visible particulate matter from becoming airborne by implementing the following measures:

- Surfaces disturbed by construction activities shall be covered or treated with a dust suppressant or water until the completion of activities at each site of disturbance. Watering shall occur at a minimum of three times daily on disturbed soil areas with active operations or dust shall otherwise be controlled by rainfall or use of a non-toxic chemical dust palliative or soil weighting agent.
- Inactive disturbed (e.g., excavated or graded areas) soil and soil piles shall be sufficiently watered or sprayed with a soil stabilizer to create a surface crust, stabilized with natural vegetation, or covered.
- Drop heights from excavators and loaders shall be minimized to a distance of no more than 5 feet. Vehicles hauling soil and other loose material would be covered with tarps or maintain at least 6 inches of freeboard.
- Vehicle speeds on unpaved roadways and access roads shall be limited to 15 miles per hour.
- Unpaved non-public traffic and parking areas designated for utilization during Proposed Project construction would be effectively stabilized to control dust emissions with a non-toxic chemical dust suppressant, soil weighting agent, gravel, or asphalt pavement.

Biological Resources	
APM WEAP	**Worker's Environmental Awareness Training Program (Superseded by Mitigation Measure BIO-1a)**
APM BIO-GEN-1	**Pre-construction Biological Clearance Surveys and Monitoring (Superseded by Mitigation Measure BIO-1b)**
APM BIO-AVI-1	**Nesting Bird Management Plan**
Location:	Project-wide
Monitoring/Reporting Action:	SCE to prepare a Nesting Bird Management Plan
Effectiveness Criteria:	Nest Bird Management Plan is implemented as approved
Responsible Agency:	CPUC, BLM, CDFW, USFWS
Timing:	Prior to and during construction activities

Biological Resources

APM BIO-AVI-1 **Nesting Bird Management Plan.** SCE shall prepare a Nesting Bird Management Plan (NBMP) in coordination with CPUC, BLM, CDFW, and USFWS. The NBMP shall describe methods to minimize potential project effects to nesting birds, and avoid any potential for unauthorized take. 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 CPUC and BLM in consultation with 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 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:

- 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.
- A procedure for amendment of the NBMP, should there be changes in applicable state or federal regulations.
- 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).
- A list of the types of project activities (construction, operations, and maintenance) that may occur during nesting season, with a short description of the noise and physical disturbance resulting from each activity.
- Clearing of any vegetation, site preparation in open or barren areas, or other 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 this 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 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:

- 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.
- 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.
- 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 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

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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 CDFW Incidental Take Permit, if such a Permit is necessary. 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 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 CPUC and BLM in consultation with the CDFW and USFWS. The NBMP shall provide a procedure and timing requirements for notifying 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.

The NBMP shall describe any proposed measures or deterrents to prevent or reduce bird nesting activity on 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 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 regard 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.

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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 project work areas, bird nesting activity, 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 project's construction activities.

Reporting

- Throughout the construction phase of the project, nest locations, 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.

APM BIO-AVI-2	**Burrowing Owl. Conduct surveys and avoidance for burrowing owl**
Location:	Project-wide
Monitoring/Reporting Action:	SCE to conduct surveys
Effectiveness Criteria:	Surveys are conducted as approved
Responsible Agency:	CPUC, BLM, CDFW, USFWS
Timing:	Prior to the start of construction during the winter burrowing season and during construction activities

APM BIO-AVI-2 **Burrowing Owl. 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 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 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 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 project work

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site, then SCE shall construct at least two replacement burrows within 300 feet of the affected project work site, or in suitable locations within 1/4 mile when suitable locations within 300 feet are not available. Burrow replacement sites shall be in areas of suitable habitat (as described in the TLRR Habitat and Sensitive Species Reports for Control-Haiwee and Ivanpah-Coolwater-Kramer-Inyokern) for burrowing owl nesting, and subject to minimal human disturbance and access. The Plan shall describe measures to ensure that burrow installation or improvements will not affect sensitive species habitat (as described in the TLRR Habitat and Sensitive Species Reports for Control-Haiwee and Ivanpah-Coolwater-Kramer-Inyokern) 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 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.

APM BIO-AVI-3	**Yellow-Billed Cuckoo**
Location:	All construction areas
Monitoring/Reporting Action:	SCE to avoid ground-disturbing activities within habitat for yellow-billed cuckoo
Effectiveness Criteria:	Ground-disturbing activities are avoided
Responsible Agency:	CPUC, USFWS, CDFW
Timing:	During construction activities

APM BIO-AVI-3 **Yellow-Billed Cuckoo**. SCE will avoid ground-disturbing activities within habitat (as described in the TLRR Habitat and Sensitive Species Reports for Control-Haiwee and Ivanpah-Coolwater-Kramer-Inyokern) for yellow-billed cuckoo during the nesting season. In the event that activities within yellow-billed cuckoo nesting habitat (as described in the TLRR Habitat and Sensitive Species Reports for Control-Haiwee and Ivanpah-Coolwater-Kramer- Inyokern) are unavoidable, a U.S. Fish and Wildlife Service (USFWS) approved biologist will conduct preconstruction surveys for yellow-billed cuckoo no more than 7 days prior to initial start of construction, if work will occur between March 15 and September 30. Surveys for yellow-billed cuckoo will be conducted in nesting habitat (as described in the TLRR Habitat and Sensitive Species Reports for Control-Haiwee and Ivanpah-Coolwater-Kramer- Inyokern) within approximately 500 feet of the Proposed Project area. Responsible agencies and lead agencies will be notified before implementing preconstruction surveys, and that the methods and results (including the name of the surveyor and dates, time, and locations of all surveys) will be provided promptly to the responsible agencies and lead agencies, before project activities begin. If a breeding territory or nest is confirmed, the USFWS and CDFW will be notified, and an exclusion buffer will be established around the nest in coordination with the USFWS and CDFW. Unless otherwise authorized by the USFWS and CDFW, no Proposed Project activities will occur within the established buffer until it is determined by the biologist that the nest is no longer active. Construction activities in occupied yellow-billed cuckoo habitat (as described in the TLRR Habitat and Sensitive Species Reports for Control-Haiwee and Ivanpah-Coolwater-Kramer-Inyokern) will be monitored by a full-time USFWS- and CDFW-approved biologist.

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APM BIO-AVI-4	**Golden Eagle (Superseded by Mitigation Measure BIO-1n)**
APM BIO-HERP-1	**Desert Tortoise (Superseded by Mitigation Measure BIO-1i)**
APM BIO-HERP-9	**Northern Leopard Frog**
Location:	Construction areas within Northern Leopard Frog habitat
Monitoring/Reporting Action:	SCE to conduct pre-construction surveys and construction monitoring
Effectiveness Criteria:	Pre-construction surveys and construction monitoring is conducted as approved
Responsible Agency:	CPUC, USFWS, BLM, and CDFW
Timing:	Prior to and during construction activities

APM BIO-HERP 9 **Northern Leopard Frog.** Prior to initial ground-disturbing activities, a qualified biologist will conduct surveys within areas identified as habitat (as described in the TLRR Habitat and Sensitive Species Reports for Control-Haiwee and Ivanpah-Coolwater-Kramer-Inyokern) for this species. Biological monitors shall monitor all construction activities in areas identified as northern leopard frog habitat (as described in the TLRR Habitat and Sensitive Species Reports for Control-Haiwee and Ivanpah-Coolwater-Kramer-Inyokern). The responsible agencies and lead agencies will be notified before implementing pre-construction surveys, and that the methods and results (including the name of the surveyor and dates, time, and locations of all surveys) will be provided promptly to the responsible agencies and lead agencies, before project activities begin.

Avoid and minimize impacts. All project activities located within areas identified as habitat (as described in the TLRR Habitat and Sensitive Species Reports for Control-Haiwee and Ivanpah-Coolwater-Kramer-Inyokern) shall implement the following avoidance and minimization measures:

- Spill Prevention. All fueling and maintenance of vehicles and other equipment and staging areas will occur at least 100 feet from any riparian and aquatic habitat, unless full containment can be implemented. All workers will be informed of the importance of preventing spills and the appropriate measures to take should a spill occur.
- 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 Project footprint. Motor vehicle speeds along Project routes and access roads within areas identified as habitat for northern leopard frog (as described in the TLRR Habitat and Sensitive Species Reports for Control-Haiwee and Ivanpah-Coolwater-Kramer-Inyokern) will not exceed 20 miles per hour.

APM BIO-MAM-1	**Mohave Ground Squirrel**
Location:	Project-wide
Monitoring/Reporting Action:	SCE to develop construction impact minimization and habitat conservation measures
Effectiveness Criteria:	Construction impact minimization and habitat conservation measures are implemented as approved
Responsible Agency:	CPUC and CDFW
Timing:	During construction activities

APM BIO-MAM-1 **Mohave Ground Squirrel.** SCE intends to apply for a state incidental take permit 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 ITP consultation.

Typical permit conditions that could be implemented may include, but not be limited to:

- Relocation plan. An MGS relocation plan will be developed by SCE and approved by CDFW prior to the beginning of project activities in MGS habitat. The relocation plan will include, but not be limited to, trapping methods, timing, burrow excavation methods, 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.
- Designated biologist. A qualified MGS biologist authorized by CDFW to handle MGS will be on-site or available for a same day response when project activities occur in MGS habitat.

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- 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.
- Preconstruction 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.
- 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.
- 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.

Regardless of permit conditions that may be imposed, all project activities located within areas identified as suitable habitat shall implement the following avoidance and minimization measures:

- 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 Project footprint. Motor vehicle speeds along Project routes and access roads within MGS habitat will not exceed 15 miles per hour.
- 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 a MGS is trapped and does not leave on its own, the designated biologist will move the animal according to the ITP conditions.
- 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.
- Trash disposal. Trash and food items will be contained in closed containers and removed daily to reduce attracting predators.
- Pets Prohibited. Employees will not bring pets or other animals to the Proposed Project area, unless the animal is ADA compliant.
- Upon project completion, SCE will submit to the BLM a report containing at a minimum: locations for occurrences of Mohave ground squirrel (MGS), locations of relocated MGS, and occurrence details (number of individuals, age, etc.).

APM BIO-MAM-5	**Bighorn Sheep – Nelson's /Desert Bighorn Sheep**
Location:	Construction areas within 2 miles of identified habitat for bighorn sheep
Monitoring/Reporting Action:	SCE to conduct pre-construction surveys and construction monitoring
Effectiveness Criteria:	Pre-construction surveys and construction monitoring are conducted as approved
Responsible Agency:	CPUC, CDFW, and BLM
Timing:	Prior to and during construction activities

APM BIO-MAM-5 **Bighorn Sheep – Nelson's /Desert Bighorn Sheep.** Prior to initial ground-disturbing activities, a qualified biologist will conduct surveys within 2 miles from construction work areas identified as habitat (as described in the TLRR Habitat and Sensitive Species Reports for Control-Haiwee and Ivanpah-Coolwater-Kramer-Inyokern) for bighorn sheep during the peak lambing period Feb-May. During construction, monitoring by a qualified biologist will be implemented in occupied areas within the range of BHS between Feb 1 – Sept 30. The biological monitors will halt construction activities if BHS are within 500 feet of work areas or display signs of disturbance.

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Coordinate with agencies. SCE shall provide survey results to CDFW, BLM, and CPUC prior to conducting construction activities if work is planned within bighorn sheep (BHS) habitat (as described in the TLRR Habitat and Sensitive Species Reports for Control-Haiwee and Ivanpah-Coolwater-Kramer-Inyokern) in the Cady Mountains and Clark Mountains.

Avoid and minimize impacts. All project activities located within areas identified as BHS habitat (as described in the TLRR Habitat and Sensitive Species Reports for Control-Haiwee and Ivanpah-Coolwater-Kramer-Inyokern) shall implement the following avoidance and minimization measures:

- Limited Operating Period. SCE shall avoid construction activities within one-mile of bighorn sheep lambing areas during the lambing period February 1 – May 30, and from identified water sources during the dry summer months, between May 1 – September 30, in the Cady Mountains and Clark Mountains. This measure does not apply to emergencies.
- Pets Prohibited. Employees will not bring pets to the Proposed Project area, unless the animal is ADA compliant. Helicopter Avoidance. Helicopter flight paths and activities will be seasonally adjusted by implementing a one-mile horizontal avoidance buffer and a minimum 1,500-foot altitude around bighorn sheep lambing areas during the lambing season and known water sources during the dry summer months.
- Wildlife attractants. All trash, food waste, water sources will be strictly controlled and monitored to ensure that no food or water attractants for bighorn sheep are available on the work sites during or following project activities.

APM BIO-MAM-6	**Bats, common and sensitive species (Superseded by Mitigation Measure BIO-1m)**
APM BIO-RES-1	**Develop and Implement Habitat Restoration Plan (HRP)**
Location:	Project-wide
Monitoring/Reporting Action:	PG&E to develop and implement a HRP
Effectiveness Criteria:	HRP is implemented as approved
Responsible Agency:	CPUC and BLM
Timing:	During construction Activities

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 or revegetated. 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 and revegetation will be determined by the resource agencies through the permitting process.

SCE will 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 will be submitted to 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 revegetation or restoration sites, the HRP will include:

- Revegetation and restoration goals and objectives based on vegetation type and jurisdictional status of each site.
- Quantitative restoration success criteria.
- 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.
- Maintenance details, which may include irrigation or hand-watering schedule and equipment, and erosion control.
- 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.

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- 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 temporary disturbance in disturbed areas such as roads or agricultural lands, the goal of the HRP will be revegetation to minimize spread of invasive plants, dust generation, and soil erosion. For revegetation sites the goals, objectives, and success criteria specified in the HRP will be limited to 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 revegetation sites.

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 and adjust success standards accordingly in coordination with the agencies.

In all restoration area, seed and/or potted nursery stock of locally native species will be used. The list of plants observed during botanical surveys of the 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 for up to five (5) years or the defined success criteria are achieved. SCE will be responsible for implementing adaptive management as needed. Following adaptive management, each site will continue to be subject to the success criteria required for the initial restoration.

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**
Location:	Project-wide
Monitoring/Reporting Action:	PG&E to develop and implement an Invasive Plant Management Plan
Effectiveness Criteria:	Invasive Plant Management Plan is implemented as approved
Responsible Agency:	CPUC and BLM
Timing:	Prior to and during construction activities

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 project activities. The IPMP also must meet BLM's requirements for NEPA disclosure and analysis if herbicide use is proposed for the 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) identified by BLM as special concern. The IPMP will be implemented throughout 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 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 project region and

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identify threat rankings and potential for 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 of all invasive plants of concern in areas (both within and outside the ROW) subject to 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 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 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 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. 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 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 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.

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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 project-related invasive plant infestation is located (e.g., located on a 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 relevant 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 Aminopyralid, Fluroxypyr, and Rimsulfuron on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement (BLM, 2016), 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**
Location:	Project-wide
Monitoring/Reporting Action:	SCE to conduct pre-construction surveys and construction monitoring
Effectiveness Criteria:	Pre-construction surveys and construction monitoring is conducted as approved
Responsible Agency:	CPUC, BLM, CDFW, and USFWS
Timing:	Prior to and during construction activities

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

Pre-construction survey. Pre-construction clearance surveys would 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. The pre-construction survey will be performed to re- identify the location of plants that were previously identified during baseline special status species survey(s) and to identify the presence of new (previously undescribed) special-status species. Disturbance free buffers for herbaceous species shall be 50-ft from the individual and/or occurrence boundary. If a smaller buffer is required, SCE shall obtain in the field concurrence of

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the smaller buffer from a BLM-and/or CPUC-approved biological monitor(s), depending on underlying land ownership.

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, BLM, CDFW, and/or USFWS will be notified.

Focused Survey. For construction areas where focused surveys have not occurred, focused surveys will take place prior to construction. Focused surveys will be conducted consistent with methodology described in the Project Biological Technical Report.

Restoration and Mitigation

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

- Coordinate with Agencies. Agencies shall approve any impacts to special status plants. Impacts in excess of 10% of any occurrence shall be restored or mitigated.
- Habitat Restoration and Revegetation. A Habitat Restoration Plan (HRP) shall address topsoil, plant or propagules salvage, and restoration. Approval of the HRP by appropriate agencies is required before impacts to special-status plant occurrences are allowed. For more information see APM BIO-RES-1.
- Salvage. 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).
- 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, or California BLM Special Status, plant occurrences at a 1:1 ratio of acreage for any occupied habitat affected by the project. Occupied habitat will be calculated on the 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. A mitigation ratio higher than 1:1 may be necessary if so- identified in an applicable federal or state land use management plan or conservation plan, or in a term or condition attached to a project authorization.

Annual construction monitoring reports shall be submitted to CPUC and BLM. Reports shall include, but not be limited to, 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.

APM BIO-BOT-2	**Special-status Perennial Plants and Other Species**
Location:	Project-wide
Monitoring/Reporting Action:	SCE to conduct pre-construction surveys and construction monitoring
Effectiveness Criteria:	Pre-construction surveys and construction monitoring is conducted as approved
Responsible Agency:	CPUC, BLM, CDFW, and USFWS

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Timing:	Prior to and during construction activities

APM BIO-BOT-2 **Special-status Perennial Plants and Other Species.** SCE shall avoid, minimize or mitigate impacts to sensitive plants and natural communities, including any smoke trees (*Psorothamnus spinosus*), mesquites (*Prosopis* spp.), all species of the family *Agavaceae* (including Mojave yucca and Joshua tree), palo verde (*Parkinsonia* spp.), desert pincushion (*Coryphantha chlorantha*), matted cholla (*Grusonia parishii*), curved-spine beavertail (*Opuntia curvispina*), Mojave fishhook cactus (*Sclerocactus polyancistrus*) in the project area, or unique riparian vegetation, that may be located on the project disturbance areas or surrounding buffer areas.

Pre-construction survey. Pre-construction surveys would be conducted by a qualified specialist to identify any special-status perennial species or other species of tree, shrub, cactus, or yucca in the project area that require restoration or mitigation.

Surveys would be consistent with the protocol outlined by California Department of Fish and Wildlife (CDFW) Protocols for Surveying and Evaluating Impacts to Species Status Native Plant Populations and Sensitive Nature Communities (May 2018). Prior to the start of construction, 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, shall complete pre-construction surveys in all habitats to identify individuals or occurrences of smoke trees (*Psorothamnus spinosus*), mesquites (*Prosopis* spp.), all species of the family *Agavaceae* (including Mojave yucca and Joshua tree), palo verde (*Parkinsonia* spp.), desert pincushion (*Coryphantha chlorantha*), matted cholla (*Grusonia parishii*), curved-spine beavertail (*Opuntia curvispina*), Mojave fishhook cactus (*Sclerocactus polyancistrus*) in the project area, or unique riparian vegetation. Where these species are known to occur, all work shall occur outside a 50-ft buffer; the buffer will be measured from the drip line or outer most part of the plant. If a smaller buffer is required, SCE shall obtain in the field concurrence of the smaller buffer from a BLM- and/or CPUC-approved biological monitor(s), depending on underlying land ownership. Buffer reductions may occur with the implementation of appropriate minimization measures. A qualified botanist/arborist monitor, with the authority to halt work, shall be present whenever work occurs within reduced buffers for any of these species. If avoidance of listed species is not feasible, SCE will consult with BLM/CDFW and implement additional measures pursuant to ESA/CESA, required after consultation.

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, BLM, CDFW, and/or USFWS will be notified.

Restoration and Mitigation

- Coordinate with Agencies. Agencies shall approve any impacts to the species.
- Habitat Restoration and Revegetation. If individuals of special-status species cannot be avoided, a Habitat Restoration Plan (HRP) shall address removal or salvage methods, number of individuals to be impacted, and restoration (see BIO-RES-1). Approval of the HRP by appropriate agencies is required before impacts to the given species is allowed.
- Salvage. Native Cactus/ Yucca (Joshua Tree) Removal. Most native cactus and yucca species (Joshua tree and Mohave yucca) can be successfully salvaged and transplanted, and yuccas often provide an important vertical component to wildlife habitat. Therefore, native cactus and yuccas (excluding chaparral yucca, Y.whipplei), shall be avoided or salvaged as follows:

  - On BLM lands, SCE will prepare and implement a HRP. The goal shall be maximum practicable survivorship of salvaged plants, (i.e., moving plants only once). The HRP will include at minimum: (a) species and locations of plants identified for salvage; (b) criteria for determining whether an individual plant is appropriate for salvage; (c) the appropriate season for salvage; (d) equipment and methods for collection, transport, and re-planting, to retain intact soil conditions and maximize success; (e) a requirement to mark each plant to identify the north-facing side prior to transport, and replant it in the same orientation; (f) details regarding storage of plants for each species; (g) location of the proposed recipient site, and detailed site preparation and plant introduction techniques, as applicable; (h) a description of the irrigation and other maintenance activities, as applicable; (i) success criteria, including specific timeframe for survivorship of each species; and (j) a detailed monitoring program,

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commensurate with the HRP goals. Invasive plant control for special-status plants will be addressed in the Invasive Plant Management Plan (IPMP, APM BIO-RES-2).

- Tree Removal. Tree removal and trimming would be designed to minimize the total number of individual trees removed or significantly trimmed. A qualified arborist would be onsite to make recommendations on trimming and removal. Protection and replacement of trees impacted by project activities would be mitigated consistent with applicable jurisdiction and agency requirements, and included in the HRP.
- Offsite Compensation. If restoration is not feasible, SCE shall provide compensation lands consisting of habitat occupied by the impacted sensitive species at a 1:1 ratio of individuals or acreage, for any occupied habitat affected by the project. Occupied habitat will be calculated on the 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.

Annual construction monitoring reports shall be submitted to CPUC and BLM. Reports shall include, but not limited to, details of individuals or occurrences impacted (removed or salvaged), salvage, temporary storage, if applicable, and final transplant locations, including species, number, size, condition, at a minimum; 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.

APM BIO-CNDDB-1	**Data Entry**
Location:	Project-wide
Monitoring/Reporting Action:	SCE to upload special status species occurrence data
Effectiveness Criteria:	Data is uploaded
Responsible Agency:	CPUC
Timing:	Within one-year of project completion

APM BIO-CNDBB-1 **Data Entry.** Special status species occurrence data will be entered completion. into the California Natural Diversity Database within one year of project.

APM WET-1	**Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats**
Location:	Project-wide
Monitoring/Reporting Action:	SCE to implement avoidance and minimization measures
Effectiveness Criteria:	Avoidance and minimization measures are implemented as approved
Responsible Agency:	CPUC
Timing:	During construction activities

APM WET-1 **Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats.** The project shall avoid and/or minimize impacts to all state and federally jurisdictional waters, wetlands, and riparian habitat that occur within the Project area to the maximum extent 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 to the maximum extent feasible.

The implementation of appropriate Best Management Practices (BMPs) (e.g., silt fencing, straw wattles, secondary containment, avoiding fueling in close proximity to waters, etc.) shall be utilized to ensure that indirect impacts to jurisdictional waters, wetlands and riparian areas are avoided or minimized to the maximum extent feasible. BMPs are also necessary to reduce the risk of an unintended release of sediments or other materials into jurisdictional waters. New and upgraded roadways will use at-grade type stream crossings where possible. Stockpiled and bermed sediment will be redistributed or removed from the site so as not to cause water impoundment or induce hydromodification. New poles will be sited outside stream channels to the extent possible.

If permanent impacts to waters, wetlands, and riparian habitats are unavoidable, they shall be mitigated for at a minimum of a 1:1 ratio, or at a ratio determined by the applicable Resource or

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	Land-Use 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, Bureau of Land Management, etc.).
Mitigation Measure BIO-1a	**Worker Environmental Awareness Program (WEAP) (Supersedes APM WEAP)**
Location:	All work areas. All segments
Monitoring/Reporting Action:	WEAP presentation, associated materials, and list of all personnel who have completed WEAP training to be submitted to the CPUC and BLM
Effectiveness Criteria:	WEAP is implemented as approved
Responsible Agency:	CPUC and BLM
Timing:	WEAP presentation associated materials to be submitted 60 days prior to ground-disturbing activities

BIO-1a **Worker Environmental Awareness Program (WEAP) (Supersedes APM WEAP).** SCE shall prepare and implement a project-specific Worker Environmental Awareness Program (WEAP) to educate on-site workers about the Proposed Project's sensitive environmental issues. The WEAP shall be administered by the lead biologist or a biological monitor to all personnel on-site during the construction phase, including but not limited to surveyors, engineers, inspectors, contractors, subcontractors, supervisors, employees, monitors, visitors, and delivery drivers. If the WEAP presentation is recorded on video, it may be administered by any competent project personnel.

Throughout the duration of construction, SCE shall be responsible for ensuring that all on-site project personnel receive this training prior to beginning work. A construction worker may work in the field along with a WEAP-trained crew for up to 5 days prior to attending the WEAP. SCE shall maintain a list of all personnel who have completed the WEAP training. This list shall be provided to the CPUC and BLM upon request.

Training Contents: The WEAP shall consist of a training presentation, with supporting written materials provided to all participants. At least 60 days prior to the start of ground-disturbing activities, SCE shall submit the WEAP presentation and associated materials to the CPUC and BLM for review and approval in consultation with the USFWS and CDFW.

The WEAP training shall include, at minimum:

- Overview of the Project, the jurisdictions the project route passes through (e.g., BLM, County, DRECP) and any special requirements of those jurisdictions.
- Overview of the federal and state Endangered Species Acts, Bald and Golden Eagle Protection Act, Migratory Bird Treaty Act, and the consequences of non-compliance with these acts.
- Overview of the project mitigation and biological permit requirements, and the consequences of non-compliance with these requirements.
- Sensitive biological resources on the project site and adjacent areas, including nesting birds, special-status plants and wildlife, and sensitive habitats known or likely to occur on the project site, project requirements for protecting these resources, and the consequences of non-compliance.
- Construction restrictions such as limited operating periods, environmentally sensitive areas (ESAs), and buffers.
- Avoidance of invasive weed introductions onto the project site and surrounding areas, and description of the project's weed control plan and associated compliance requirements for workers on the site.
- Function, responsibilities, and authority of biological and environmental monitors and how they interact with construction crews.
- Requirement to remain within authorized work areas and on approved roads, with examples of the flagging and signage used to designate these areas and roads, and the consequences of non-compliance.
- Procedure for obtaining clearance from a biological monitor to enter a work site and begin work (including moving equipment), and the requirement to wait for that clearance.
- One-hour hold (or other method SCE will use to halt work when necessary to maintain compliance) and the requirement for compliance.

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- ESAs and associated restrictions, and other restrictions such as no grading areas, flagging or signage designations, and consequences of non-compliance.
- Nest buffers and associated restrictions and the consequences of non-compliance. Procedure and time frame for halting work and removing equipment when a new buffer is established. Discussion of nest deterrents.
- Explanation that wildlife must not be harmed or harassed. Procedures for covering pipes, securing excavations, and installing ramps to prevent wildlife entrapment. What to do and who to contact if dead, injured, or entrapped animals are encountered (Mitigation Measure BIO-1f (Wildlife impact avoidance and minimization).
- General safety protocols such as hazardous substance spill prevention, containment, and cleanup measures; fire prevention and protection measures; designated smoking areas (if any) and cigarette disposal; safety hazards that may be caused by plants and animals; and procedure for dealing with rattlesnakes in or near work areas or access roads (Mitigation Measure BIO-1f, Wildlife impact avoidance and minimization, APM HAZ-1).
- Project requirements that have resulted in repeated compliance issues on other recent transmission line projects, such as dust control, speed limits, track out (dirt or mud tracked from access roads or work sites onto paved public roads or other areas), personal protective equipment (PPE), work hours, working prior to clearance, and waste containment and disposal.
- Printed training materials, including photographs and brief descriptions of all special-status plants and animals that may be encountered on the Project, including behavior, ecology, sensitivity to human activities, legal protection, penalties for violations, reporting requirements, and protection measures.
- Contact information for SCE, construction management, and contractor environmental personnel, and who to contact with questions.
- Training acknowledgment form to be signed by each worker indicating that they understand and will abide by the guidelines, and a hardhat sticker so WEAP attendance may be easily verified in the field.

WEAP Lite. An abbreviated version of WEAP training ("WEAP lite") may be used for individuals who are exclusively delivery drivers, concrete truck drivers, or visitors to the project site, and will be provided by a qualified project biologist, biological monitor, or environmental field staff prior to those individuals entering or working on the project.

Short-term visitors (total of 5 days or less per year) to the project site who will be riding with and in the company of WEAP-trained project personnel for the entire duration of their visit(s) are not required to attend WEAP or WEAP lite training.

WEAP lite training will provide sufficient information for the individual to understand and maintain compliance with project mitigation measures and permit conditions. WEAP lite presentations will be tailored to the situation and emphasize project requirements that are relevant to that situation (e.g., dust control, speed limits, staying within project roads and work areas, and use of washouts for concrete truck drivers).

A training acknowledgment form will be signed by each participant indicating that they understand and will abide by the guidelines, and a hardhat sticker so WEAP lite attendance may be easily verified in the field. SCE will maintain a list of personnel who have completed WEAP lite training. This list will be provided to the CPUC and BLM upon request.

WEAP Refreshers. Biological monitors or environmental field staff will periodically present brief WEAP refresher presentations at tailboards to help construction crews and other personnel maintain awareness of environmental sensitivities and requirements. A 5- to 10-minute informal talk will be presented at each of the Project's main contractor/subcontractor tailboards at least once a week.

When a contractor or subcontractor resumes work after a long break (more than six (6) consecutive calendar days with no substantial work on project construction in the field), a biological monitor or environmental field staff will provide an extended WEAP refresher presentation (10 to 20 minutes) at each of the contractor/subcontractor tailboards on the first day back to work.

The monitor will note the date, contractor or subcontractor, tailboard location and time, and topic(s) discussed during the WEAP refresher and include this information in their daily monitoring report.

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Mitigation Measure BIO-1b	**Biological Monitoring (Supersedes BIO-GEN-1)**
Location:	All work areas. All segments
Monitoring/Reporting Action:	Daily, weekly, annual, and final reports
Effectiveness Criteria:	All monitoring activities are documented and reported
Responsible Agency:	CPUC and BLM
Timing:	Lead biologists to be nominated at least 60 days prior to the start of any ground-disturbing activities. Pre-construction surveys to be completed 10 days prior to beginning work in any given area. Final report to be submitted within 12 months of the completion of construction.

BIO-1b **Biological Monitoring (Supersedes BIO-GEN-1).** Pre-construction biological resources surveys. SCE shall assign qualified biologists, which may include the Lead Biologist and Biological Monitors (below), as qualified, to perform pre-construction biological surveys at each project work area, access route, and the vicinity. Survey distances will be no less than 300 feet surrounding each work site and along any access route being created or improved, and no less than 100 feet along existing routes. Survey distances may vary, as appropriate, based on target species and as stipulated by project work plans, species-specific plans, and mitigation plans. Where suitable nest sites for raptors are present, the pre-construction surveys for raptor nests will extend to a 500-foot area surrounding the work area or road.

Pre-construction surveys shall be planned and implemented to identify locations of special-status plants, wildlife, and nesting birds occurring at work areas, other portions of the ROW, or in adjacent buffer areas. Specific pre-construction survey methods or protocols will vary according to the resources which may be present at any given site, and according to season. At minimum, SCE shall complete pre-construction surveys 10 days prior to beginning work in any given area, and repeat the surveys if the work site remains inactive for a period of ten days or more. During nesting season, a qualified biologist shall complete nesting bird surveys as described in APM BIO-AVI-1 (Impact BIO-5).

SCE shall submit resumes of all biologists performing pre-construction and protocol biological surveys to the CPUC for review and approval, in coordination with CDFW and USFWS. Results of pre-construction surveys shall be submitted to CPUC for review and approval and no work shall occur until the CPUC Environmental Monitor has validated the survey results and any applicable resource and work area boundary staking. Each pre-construction survey report shall include methods and results of the preconstruction survey, and a list of biological resources detected at each site during prior focused surveys or pre-construction surveys. The pre-construction survey report format and contents shall be subject to CPUC review and approval.

SCE also shall conduct pre-construction "sweeps" of each work site immediately prior to beginning construction or disturbance work, to identify any vulnerable wildlife that may have entered the site. Based on the results of pre-construction surveys and sweeps, SCE or its contractor shall observe buffer areas or other access or activity restrictions to minimize potential impacts to the resources. SCE shall provide documentation of the methods and results of all pre-construction surveys, and follow-up buffer areas or other avoidance measures that are implemented, to the CPUC.

Biological Monitoring Team. Monitoring of construction and post-construction restoration phases will be performed by a monitoring team to ensure conformance with conditions of approval, effective protection, and avoidance of biological resources. During construction and restoration, the Applicant shall employ a biological monitoring team to oversee project activities. Any activity that may impact vegetation, wildlife, and sensitive resources would be monitored to ensure compliance with all mitigation measures for biological resources.

The biological monitoring team would consist of:

- Lead biologist: SCE shall nominate a lead biologist and submit the nominee's resume to the CPUC and BLM for concurrence, no less than 60 days prior to the start of any ground-disturbing activities, including those occurring prior to site mobilization (including, but not limited to geotechnical borings or hazardous waste evaluations). At minimum the lead biologist will hold a bachelor's degree in biological sciences, zoology, botany, ecology, or a closely related field;

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have at least three years of experience in field biology and at least one year of direct field experience with biological resources found in or near the project area, OR relevant education and experience that demonstrates the ability to carry out the tasks required of a lead biologist. The resume shall demonstrate to the satisfaction of the CPUC the appropriate education and experience to accomplish the assigned biological resources tasks.

- The lead biologist will be SCE's primary point of contact to CPUC, CDFW, and USFWS regarding any biological resources issues and implementation of related mitigation measures and permit conditions throughout project construction and post-construction restoration work. In addition, the lead biologist will oversee supervision and training of biological monitors (below) and preparation and submission of all monitoring reports and notifications (below).
- If the lead biologist is replaced, the specified information of the proposed replacement must be submitted to the CPUC at least ten working days prior to the termination or release of the preceding lead biologist. In an emergency, SCE shall immediately notify the CPUC and BLM to discuss the qualifications and approval of a short-term replacement while a permanent lead biologist is proposed for consideration.

- Biological monitors: SCE shall assign qualified biological monitors to the Project to monitor all work activities during the construction phase.

  - Monitors are responsible for ensuring that impacts to special-status species, native vegetation, wildlife habitat, and sensitive or unique biological resources are avoided or minimized to the fullest extent safely possible. Monitors shall ensure that work activities are conducted in compliance with APMs, mitigation measures, permit conditions, and other project requirements.
  - Resumes of all biological monitors, including specialty monitors (including but not limited to bat, nesting bird, and special-status species monitors), shall be provided for concurrence by the CPUC, at least 10 working days prior to the monitor commencing field duties. The resumes shall demonstrate, to the satisfaction of the CPUC, the appropriate education and experience to accomplish the assigned biological resources tasks.
  - SCE shall provide training to biological monitors, in addition to WEAP (Mitigation Measure BIO-1a,Worker Environmental Awareness Program, Mitigation Measure BIO-1b, Biological Monitoring) and prior to the monitor commencing field duties, on biological resources present or potentially present on the Proposed Project, as well as mitigation measures, permit requirements, project protocols, and the duties and responsibilities of a biological monitor.
  - Biological monitors shall inform construction crews daily of any environmentally sensitive areas (ESAs), nest buffers, or other resource issues or restrictions that affect the work sites for that day. Biological monitors shall communicate with construction supervisors and crews as needed (e.g., at daily tailgate safety meetings ("tailboards"), by telephone, text message, or email) to provide guidance to maintain compliance with mitigation measures and permit conditions. SCE shall ensure that adequate numbers of monitors are assigned to effectively monitor work activities and that communications from biological monitors are promptly directed to crews at each work site for incorporation into daily work activities. If biological monitors are unavailable for a tailboard meeting, the construction supervisors shall communicate all ESA, nest buffers, or other resource restrictions to crews during the meeting. SCE shall ensure that biological monitors are provided with an accurate daily construction work schedule as well as updated information on any alterations to the daily construction work schedule. This information shall also be provided to CPUC monitors. SCE shall ensure that biological monitors are provided with up-to-date biological resource maps and construction maps in hardcopy or digital format. These maps shall also be provided to CPUC monitors.
  - Monitors shall be familiar with the biological resources present or potentially present, ESAs, nest buffers, and any other resource issues at the site(s) they are monitoring, as well as the applicable mitigation measures and permit requirements. Monitors shall exhibit diligence in their monitoring duties and refrain from any conduct or potential conflict of interest that may compromise their ability to effectively carry out their monitoring duties.

- Authorized Desert Tortoise Biologist: For desert tortoise protection measures (Mitigation Measure BIO-1i, Desert Tortoise), the Applicant will nominate a qualified individual to serve as Authorized Desert Tortoise Biologist for approval by the USFWS.

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Monitor duties and responsibilities: Throughout the duration of construction, SCE shall conduct biological monitoring of all activities in any area where there is a potential to impact sensitive biological resources or jurisdictional waters, including but not limited to vegetation removal/ trimming/disturbance, all clearing and ground-disturbing work activities, including in work sites, yards, staging areas, access roads, and any area subject to project disturbance. Pre-construction activities and post-construction restoration shall also be monitored by a biological monitor during all such ground-disturbing activities.

Each day, prior to work activities at each site, a biological monitor shall conduct clearance surveys ("sweeps") for sensitive plant or wildlife resources that may be located within or adjacent to the construction areas. If sensitive resources are found, the biological monitor shall take appropriate action as defined in all adopted mitigation measures, APMs, and permit conditions. Work activities shall not commence at any work site until the clearance survey has been completed and the biological monitor communicates to the contractor that work may begin.

Biological monitors shall clearly mark sensitive biological resource areas with staking, flagging, or other appropriate materials that are readily visible and durable. The monitors will inform work crews of these areas and the requirements for avoidance, and will inspect these areas at appropriate intervals for compliance with regulatory terms and conditions. The biological monitors shall ensure that work activities are contained within approved disturbance area boundaries at all times.

Biological monitors shall have the authority and responsibility to halt any project activities that are not in compliance with applicable mitigation measures, APMs, permit conditions, or other project requirements, or will have an unauthorized adverse effect on biological resources.

Handling, relocation, release from entrapment, or other interaction with wildlife shall be performed consistent with mitigation measures, safety protocols, permits (including CDFW and USFWS permits), and other project requirements.

Biological monitors shall, to the extent safe, practicable, and consistent with mitigation measures and permit conditions, actively or passively relocate wildlife out of harm's way. Daily, biological monitors shall inspect construction areas where animals may have become trapped, including equipment covered with bird exclusion netting, and release any trapped animals. Daily inspections shall also include areas with high vehicle activity (e.g., yards, staging areas), to locate animals in harm's way and relocate them if necessary. If safety or other considerations prevent biological monitors from aiding trapped wildlife or wildlife in harm's way, SCE shall consult with the construction contractor, CDFW, wildlife rehabilitator, or other appropriate party to obtain aid for the animal, consistent with Mitigation Measure BIO-1f (Wildlife impact avoidance and minimization).

At the end of each workday, biological monitors shall verify that excavations, open tanks, and trenches have been covered or have ramps installed to prevent wildlife entrapment and communicate with work crews to ensure these structures are installed and functioning properly.

Biological monitors shall regularly inspect any wildlife exclusion fencing daily to ensure that it remains intact and functional. Any need for repairs to exclusion fencing shall be immediately communicated to the responsible party, and repairs shall be carried out in a timely manner, generally within one workday.

Monitoring Reporting: SCE shall prepare and implement a procedure for communication among biological monitors and construction crews, to ensure timely notification (i.e., daily or sooner, as needed) to crews of any resource issues or restrictions. SCE will notify the CPUC of the procedure and will maintain records of daily communication. SCE will provide CPUC on-line access to project resource management maps and GIS data.

Monitoring activities shall be thoroughly and accurately documented daily. SCE shall prepare and submit daily, weekly, annual, and final monitoring reports to the CPUC. Prior to the start of monitoring activities, SCE shall provide proposed report formats, describing content and organization, for CPUC review and approval in consultation with CDFW and USFWS. Report contents shall be as follows:

Daily reports:

(i) All daily special status species observations, including location of observation, location and description of project activities in the vicinity, and any avoidance or other mea-

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sures taken to avoid the species. In addition, all special-status species observations shall be reported to the CNDDB (California Natural Diversity Database; see Weekly reports).

(ii) All non-compliance incident reports, including nest buffer incursions (APM AVI-1 (Prepare and implement a Nesting Bird Management Plan)).

(iii) Daily project activity plans, specifying each work site.

Weekly reports:

(i) Copies of all CNDDB records for the preceding week, and any additional reporting information for each species report (species-specific APMs, Mitigation Measure BIO-1g to Mitigation Measure BIO-1n).

(ii) Weekly update of bird nesting activities and buffer distances (APM BIO-AVI-1 (Prepare and implement a Nesting Bird Management Plan)).

Annual reports: SCE shall submit an annual monitoring report by January 30 of each calendar year, with the following contents:

(i) A summary of all compliance monitoring reports submitted throughout the calendar year;

(ii) A summary of all non-compliance records occurring during the calendar year, and remedial actions applied for each one, with additional explanatory text and explanation of resolution of each substantial non-compliance incident (often termed "Level 3 non-compliance");

(iii) A summary of all nest buffer incursions, including helicopter incursions, (APM BIO-AVI-1), with explanation of follow-up actions and resolution for each one;

(iv) Running annual compilations of permanent and temporary impact acreages by habitat and land use jurisdiction;

(v) Summaries of all other monitoring reporting requirements, as specified in mitigation measures in the Vegetation and Wildlife Resources sections; and

(vi) Discussion of "lessons learned" during the calendar year, and recommended or proposed measures to improve compliance throughout the remainder of the Project.

Final report: After construction has been completed, a final environmental compliance monitoring report shall be submitted to the CPUC for review and approval. This report shall be submitted within twelve (12) months of the completion of construction and shall include:

(i) A summary of all non-compliance records occurring during the construction phase, and remedial actions applied for each one, with additional explanatory text and explanation of resolution of each substantial non-compliance incident (often termed "Level 3 non-compliance");

(ii) A summary of all nest buffer incursions, including helicopter incursions, (APM BIO-AVI-1) occurring during the construction phase, with explanation of follow-up actions and resolution for each one;

(iii) Final compilations of permanent and temporary impact acreages by habitat and land use jurisdiction;

(iv) Summaries of all other monitoring reporting requirements, as specified in mitigation measures in the Vegetation and Wildlife Resources sections; and

(v) Discussion of "lessons learned" during construction, and recommended or proposed measures to improve compliance for future projects.

Mitigation Measure BIO-1c	**Minimization of Vegetation and Habitat Impacts**
Location:	All work areas. All segments
Monitoring/Reporting Action:	GIS shapefiles of all actual temporary and permanent disturbance areas, accurate aerial imagery of the project area, and summary data of all discrepancies between final engineering and "as-built" conditions for

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	each vegetation or habitat type, within each segment to be submitted to the CPUC.
Effectiveness Criteria:	Work activities and roadways avoid or minimize direct or indirect effects to sensitive habitat types or jurisdictional waters and provide buffer areas to minimize disturbance
Responsible Agency:	CPUC
Timing:	Prior to beginning of any ground disturbing activities. As phases of disturbance and/or construction of segments are completed, as requested by CPUC. Final project data to be provided upon completion of construction.

BIO-1c **Minimization of Vegetation and Habitat Impacts.** Final engineering of the Project shall minimize the extent of disturbance and removal of native vegetation and habitat, to the extent safe and feasible. Work activities and roadways will avoid or minimize direct or indirect effects to sensitive habitat types or jurisdictional waters and provide buffer areas to minimize disturbance. Wherever feasible, project access will utilize existing routes or bridges over jurisdictional waters.

As feasible, and consistent with project safety and security protocols, landowner preferences, and any other applicable regulations or requirements, existing gates on project access roads will be closed and secured when project personnel enter or leave an area.

Prior to beginning any ground-disturbing activities, SCE shall provide CPUC with final engineering GIS shapefiles depicting all temporary and permanent disturbance areas, as well as summary data on temporary and permanent disturbance for each vegetation or habitat type in each segment.

As phases of disturbance and/or construction of segments are completed, and as requested by CPUC, SCE shall provide CPUC with GIS shapefiles. Shapefiles shall include all actual temporary and permanent disturbance areas, accurate aerial imagery of the project area, and summary data of all discrepancies between final engineering and "as-built" conditions for each vegetation or habitat type, within each segment.

To the extent feasible, stockpiling of spoils and salvaged topsoil will be located in previously disturbed areas, and will avoid native vegetation.

Prior to any construction, equipment or crew mobilization at each work site, work areas will be marked with staking or flagging to identify the limits of work and will be verified by project environmental staff and the Lead Biologist. Staking and flagging will clearly indicate the work area boundaries. Where staking cannot be used, traffic cones, traffic delineators, or other markers will be used. Staking and flagging or other markers will be in place during construction activities at each work site and will be refreshed as needed. Coded flagging colors or color combinations will be consistent and uniform across the Project. All work activities, vehicles, and equipment will be confined to approved roads and staked and flagged or marked work areas.

Mitigation Measure BIO-1d	**Compensation for habitat loss**
Location	All segments in permanent and long-term impact areas
Monitoring/Reporting Action	Habitat Compensation Plan to be submitted to the CPUC
Effectiveness Criteria	Habitat Compensation Plan is implemented as approved
Responsible Agency	CPUC
Timing	Prior to beginning of any ground disturbing activities.

BIO-1d **Compensation for habitat loss.** SCE will acquire and protect, in perpetuity, compensation habitat to mitigate impacts to biological resources as detailed below. SCE shall compensate for permanent or long-term habitat loss, which encompasses all permanent project disturbance areas and areas designated as temporary disturbance, but that cannot be effectively revegetated or restored to replace habitat values within a five-year timeframe.

Prior to the initiation of construction, SCE will prepare a Habitat Compensation Plan to be reviewed and approved by the CPUC, in consultation with the USFWS and CDFW. Compensation may be accomplished through non-acquisition (restoration and enhancement), contributions to an agency approved mitigation or conservation bank(s), or through the acquisition and long-term manage-

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ment of compensation lands. SCE shall be responsible for the acquisition, initial protection and habitat improvement, and long-term maintenance and management of any compensation lands.

Compensation will be provided for impacts to the following resources, at the ratios specified below (acres acquired/preserved to acres impacted), unless otherwise permitted and directed by resource agencies. These ratios reflect multiple biological resource values, including habitat suitability for special-status species. Vegetation communities that fall within each of the following habitat categories, and acres of impacts to be compensated, are identified in Appendix 4.

- Desert scrub (suitable for desert tortoise): 1:1 (Table 4-2)
- Desert Tortoise Critical Habitat: 5:1 (in same CHU) (Table 4-4)
- Joshua Tree Woodland: per CDFW ITP (Table 4-2)
- Sensitive Natural Communities: 3:1 (Table 4-2)
- Western Burrowing Owl Suitable Habitat: per CDFW ITP (Table 4-2)
- Non-wetland jurisdictional waters: 1:1 (Table 4-5)
- State or Federal Jurisdictional wetland areas: 3:1 (Table 4-5)
- Riparian Thickets and Forests: 3:1 (Table 4-2)

The Habitat Compensation Plan will specify compensation acreage for each habitat type, based on final engineering. Final compensation requirements may be adjusted to account for any deviations in project disturbance, according to the as-built shapefiles aerial imagery (Mitigation Measure BIO-1c, Minimization of vegetation and habitat impacts). If appropriate, as approved by resource agencies, compensation may be "nested" or "layered" to the extent that it meets habitat requirements for multiple species that may be impacted by the Project.

SCE shall provide compensation habitat that is of comparable quality and value to the habitat impacted, taking into consideration soils, vegetation, topography, human-related disturbance, invasive species, wildlife movement opportunity, proximity to other protected lands, management feasibility, and other habitat values. The primary focus area for acquiring parcels will be within the Western Mojave Recovery Unit, which encompasses the Fremont-Kramer, Superior-Cronese, and Ord-Rodman CH Units.

Compensation lands will be placed under conservation management to be funded through the terms described herein. If there is any discrepancy between the requirements of this mitigation measure and requirements of any resource agency permit (e.g., USFWS Biological Opinion, CDFW Incidental Take Permit, CDFW LSAA), the more stringent (highest ratio) requirement shall apply.

Compensation Land Selection Criteria. Criteria for the acquisition, initial protection and habitat improvement, and long-term maintenance and management of compensation lands for impacts to biological resources will include all of the following:

- Compensation lands will provide habitat value that is equal to or better than the quality and function of the habitat impacted by the Project, taking into consideration soils, vegetation, topography, human-related disturbance, wildlife movement opportunity, proximity to other protected lands, management feasibility, and other habitat values, subject to review and approval by CPUC;
- To the extent that proposed compensation habitat may have been degraded by previous uses or activities, the site quality and nature of degradation must support the expectation that it will regenerate naturally when disturbances are removed;
- Be near larger blocks of lands that are either already protected or planned for protection, or which could feasibly be protected long-term by a public resource agency or a non-governmental organization dedicated to habitat preservation;
- Not have a history of intensive recreational use or other disturbance that might cause future erosion or other habitat damage, and make habitat recovery and restoration infeasible;
- Not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration;
- Not contain hazardous wastes that cannot be removed to the extent that the site could not provide suitable habitat;
- Must provide wildlife movement value equal to that on the project site, based on topography, presence and nature of movement barriers or crossing points, location in relationship to other habitat areas, management feasibility, and other habitat values; and

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- Have water and mineral rights included as part of the acquisition, unless the CPUC and BLM, in consultation with CDFW and USFWS, agree in writing to the acceptability of land without these rights.

Review and Approval of Compensation Lands Prior to Acquisition. Prior to the initiation of construction, SCE shall submit a Draft Habitat Compensation Plan for review and approval by the CPUC describing the parcel(s) intended for protection. This Plan will discuss the suitability of the proposed parcel(s) as compensation lands in relation to the selection criteria listed above.

Management Plan. Prior to the initiation of construction, SCE or approved third party will prepare a management plan for the compensation lands in consultation with the entity that will be managing the lands. The goal of the management plan will be to support and enhance the long-term viability of the biological resources. The Management Plan will be submitted for review and approval to the CPUC, in consultation with CDFW and USFWS.

Compensation Lands Acquisition Requirements. SCE will comply with the following requirements relating to acquisition of the compensation lands after the CPUC has approved the proposed compensation lands:

- Preliminary Report. SCE or an approved third party will provide a recent preliminary title report, initial hazardous materials survey report, biological resources analysis, and other necessary or requested documents for the proposed compensation land to the CPUC. All documents conveying or conserving compensation lands and all conditions of title are subject to review and approval by the CPUC in consultation with CDFW and USFWS. For conveyances to the State, approval may also be required from the California Department of General Services, the Fish and Game Commission, and the Wildlife Conservation Board.
- Title/Conveyance. SCE will acquire and transfer fee title to the compensation lands, a conservation easement over the lands, or both fee title and conservation easement, as required by the CPUC, in consultation with USFWS and CDFW. Any transfer of a conservation easement or fee title must be to CDFW, to a non-profit organization qualified to hold title to and manage compensation lands (pursuant to California Government Code section 65965), or to BLM or other public agency approved by the CPUC. If an approved non-profit organization holds fee title to the compensation lands, a conservation easement will be recorded in favor of CDFW or another entity approved by the CPUC. If an entity other than CDFW holds a conservation easement over the compensation lands, the CPUC may require that CDFW or another entity approved by the CPUC, in consultation with CDFW and USFWS, be named a third-party beneficiary of the conservation easement. SCE will obtain approval of the CPUC of the terms of any transfer of fee title or conservation easement to the compensation lands.
- Initial Protection and Habitat Improvement. SCE will fund activities that the CPUC may require for the initial protection and habitat improvement of the compensation lands. These activities will vary depending on the condition and location of the land acquired, but may include trash removal, construction and repair of fences, invasive plant removal, and similar measures to protect habitat and improve habitat quality on the compensation lands. A non-profit organization, CDFW, or another public agency may hold and expend the habitat improvement funds if it is qualified to manage the compensation lands (pursuant to California Government Code section 65965), if it meets the approval of the CPUC, in consultation with USFWS and CDFW, and if it is authorized to participate in implementing the required activities on the compensation lands. If CDFW takes fee title to the compensation lands, the habitat improvement fund must be paid to CDFW or its designee.
- Property Analysis Record. Upon identification of the compensation lands, SCE will conduct a Property Analysis Record (PAR) or PAR-like analysis to establish the appropriate amount of the long-term maintenance and management fund to pay the in-perpetuity management of the compensation lands. The PAR or PAR-like analysis must be approved by the CPUC, in consultation with USFWS and CDFW, before it can be used to establish funding levels or management activities for the compensation lands.
- Long-term Maintenance and Management Funding. SCE will provide funding to establish an account with non-wasting capital that will be used to fund the long-term maintenance and management of the compensation lands. The amount of money will be determined through an approved PAR or PAR-like analysis conducted for the compensation lands. SCE must obtain the approval of the entity that will receive and hold the long-term maintenance and management fund for the compensation lands. The CPUC will consult with USFWS and CDFW

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before deciding whether to approve an entity to hold the Project's long-term maintenance and management funds.

SCE will ensure that an agreement is in place with the long-term maintenance and management fund holder/manager to ensure the following requirements are met:

- Interest. Interest generated from the initial capital long-term maintenance and management fund will be available for reinvestment into the principal and for the long-term operation, management, and protection of the approved compensation lands, including reasonable administrative overhead, biological monitoring, habitat improvements, patrol and law enforcement activities, and any other action that is approved by the CPUC and is designed to protect or improve the habitat values of the compensation lands.
- Withdrawal of Principal. The long-term maintenance and management fund principal will not be drawn upon unless such withdrawal is deemed necessary by the CPUC, or by the approved third-party long-term maintenance and management fund manager, to ensure the continued viability of the species on the compensation lands.
- Pooling Long-Term Maintenance and Management Funds. An entity approved to hold long-term maintenance and management funds for the Project may pool those funds with similar non-wasting funds that it holds from other projects for long-term maintenance and management of compensation lands. However, for reporting purposes, the long-term maintenance and management funds for this project must be tracked and reported individually to the CPUC.

- Other Expenses. In addition to the costs listed above, SCE will be responsible for all other costs related to acquisition of compensation lands and conservation easements, including but not limited to the title and document review costs incurred from other state agency reviews, overhead related to providing compensation lands to CDFW or an approved third party, escrow fees or costs, environmental contaminants clearance, and other site cleanup measures.
- Delegation. The responsibility for acquisition of compensation lands may be delegated to a third party, by written agreement of the CPUC, in consultation with CDFW, prior to land acquisition, enhancement or management activities.

Mitigation Measure BIO-1e	**Pre-construction biological resources surveys**
Location	All work areas. All segments
Monitoring/Reporting Action	Pre-construction survey reports to be submitted to the CPUC
Effectiveness Criteria	Pre-construction surveys conducted as approved
Responsible Agency	CPUC and BLM
Timing	10 days prior to beginning work

BIO-1e **Pre-construction biological resources surveys.** SCE shall assign qualified biologists to perform pre-construction biological surveys at each project work area and access route, and in the area surrounding each work site or access route. Survey distances will vary, as appropriate, based on target species and as stipulated by project work plans and mitigation plans, but will be no less than 300 feet surrounding each work site and along any access route being created or improved. (Improvement is considered to be both 'drive and crush' and any road work that causes greater disturbance than light blading of previously existing roads.) For project access along existing routes or routes improved during an earlier phase of the Project, the survey requirement will be 100 feet. An exception would be if a greater distance is stipulated in other applicable project work plans or mitigation measures. Where suitable nest sites for raptors are present, the pre-construction surveys for raptor nests will extend to a 500-foot area surrounding the work area or road.

Pre-construction surveys shall be planned and implemented to identify locations of special-status plants and wildlife and nesting birds occurring at work areas, other portions of the ROW, or in adjacent buffer areas. Specific pre-construction survey methods or protocols will vary according to the resources which may be present at any given site, and according to season. At minimum, SCE shall complete pre-construction surveys 10 days prior to beginning work in any given area, and repeat the surveys if the work site remains inactive for a period of ten days or more. During nesting season, a qualified biologist shall complete nesting bird surveys no more than four (4) days prior to beginning work at any given area, and repeat the surveys regularly so long as work continues at the site during the nesting season.

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SCE shall submit resumes of all biologists performing pre-construction biological surveys to the CPUC and BLM for review and approval, in coordination with CDFW and USFWS. Results of pre-construction surveys shall be submitted to CPUC and BLM for review and approval and no work shall occur until the CPUC Environmental Monitor has validated the survey results and any applicable resource and work area boundary staking. Each pre-construction survey report shall include methods and results of the preconstruction survey, and a list of biological resources detected at each site during prior focused surveys or pre-construction surveys. The pre-construction survey report format and contents shall be subject to CPUC and BLM review and approval.

SCE also shall conduct pre-construction "sweeps" of each work site immediately prior to beginning construction or disturbance work, to identify any vulnerable wildlife that may have entered the site. Based on the results of pre-construction surveys and sweeps, SCE or its contractor shall observe buffer areas or other access or activity restrictions to minimize potential impacts to the resources. SCE shall provide documentation of the methods and results of all pre-construction surveys, and follow-up buffer areas or other avoidance measures that are implemented, to the CPUC and BLM.

Mitigation Measure BIO-1f	**Wildlife impact avoidance and minimization**
Location	All work areas. All segments
Monitoring/Reporting Action	Specific measures related to traffic, lighting, toxic substances, noise and vibration, water, worker guidelines, wildlife netting, wildlife entrapment, dead animals, injured wildlife, and rattlesnakes (see full text in Section 3.5.5, Mitigation Measure BIO-1f) to be submitted to the CPUC
Effectiveness Criteria	Specific measures are implemented as approved
Responsible Agency	CPUC
Timing	Construction, restoration, and operations and maintenance phases

BIO-1f **Wildlife impact avoidance and minimization.** SCE shall undertake the following measures during the construction, restoration, and operations and maintenance phases to avoid or minimize impacts to wildlife resources. Implementation of all measures shall be subject to review and approval by the CPUC in consultation with CDFW and USFWS. Impacts to nesting birds are addressed separately in APM BIO-AVI-1 (Prepare and implement a Nesting Bird Management Plan).

Minimize traffic impacts. SCE will specify and enforce a maximum 20 mile per hour vehicle speed limit on access roads within the ROW and project vicinity. No project-related pedestrian or vehicle traffic will be permitted outside maintained roads, designated routes, or defined work site boundaries (as demarcated on the site according to Mitigation Measure BIO-1c (Minimization of Vegetation and Habitat Impacts).

Minimize lighting impacts. Night lighting, when in use, shall be designed, installed, and maintained to prevent side casting of light towards surrounding fish or wildlife habitat.

Avoid use of toxic substances. Soil bonding and weighting agents used for dust suppression on unpaved surfaces shall be non-toxic to wildlife and plants.

Minimize noise and vibration impacts. To minimize disturbance to wildlife nesting or breeding activities in surrounding habitat, project-related helicopter use shall be avoided or managed to the extent feasible from January 1 through August 31. Unnecessary noise (e.g., blaring radios) shall be avoided.

Water. Potable and non-potable water sources such as tanks, ponds, and pipes shall be covered or otherwise secured to prevent animals (including birds) from entering. Prevention methods may include storing all water within closed tanks, providing a means of escape for wildlife, or other means as applicable. Water applied to dirt roads and construction areas for dust abatement shall use the minimal amount needed to meet safety and air quality standards, to avoid ponding and attracting wildlife. Water sources (e.g., hydrants, tanks, etc.) shall be checked periodically by biological monitors to ensure they are not creating open water sources by leaking or consistently overfilling trucks.

Worker guidelines. All trash and food-related waste shall be contained in vehicles or covered trash containers and removed from the site daily to reduce attractiveness to opportunistic

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predators, such as common ravens *(Corvus corax)*, coyotes *(Canis latrans)*, and feral dogs *(Canis lupus familiaris)*. Workers shall not feed wildlife or bring pets to the project site. Except for law enforcement personnel, no workers or visitors to the site shall bring firearms or weapons.

Wildlife netting or exclusion fencing. SCE may install temporary or permanent netting or fencing around equipment, work areas, or project facilities to prevent wildlife exposure to hazards such as toxic materials or vehicle strikes, or prevent birds from nesting on equipment or facilities. Bird deterrent netting will be maintained free of holes and will be deployed and secured on the equipment in a manner that, insofar as possible, prevents wildlife from becoming trapped inside the netted area or within the excess netting. The biological monitor will inspect netting (if installed) twice daily, at the beginning and close of each workday, with the exception of netting installed in established material yards, which will be inspected at least once daily. The biological monitor will inspect exclusion fence (if installed) weekly and will inform SCE of any needed repairs; SCE shall promptly repair any damage to the exclusion fencing.

Wildlife entrapment. Project-related excavations shall be secured to prevent wildlife entry and entrapment. Holes, trenches, pits or other steep-sided excavations that may pose a hazard to wildlife shall be backfilled, securely covered, or fenced. Excavations that cannot be fully secured shall incorporate appropriate earthen or wooden wildlife ramp(s) at a slope of no more than a 3:1 ratio, or other means to allow trapped animals to escape. Biological monitors shall provide guidance to construction crews to ensure that wildlife ramps or other means are sufficient to allow trapped animals to escape. At the end of each workday and just before backfilling, a biological monitor shall ensure that all excavations have been secured or provided with appropriate means for wildlife escape.

All pipes or other construction materials or supplies will be covered or capped in storage or laydown areas. No pipes or tubing will be left open either temporarily or permanently, except during use or installation. Any construction pipe, culvert, or other hollow materials will be inspected for wildlife before it is moved, buried, or capped.

Water tanks and ponds will be secured with a cover or otherwise fitted with a means of escape for wildlife.

If found, trapped animals will be removed by the qualified biologist and relocated to outside the project footprint, as required in all applicable permits or habitat conservation plans.

Dead animals. Dead animals of non-special-status species found on unpaved project roads, work areas, or the ROW shall be reported to the appropriate local animal control agency within 24 hours. A biological monitor shall safely move the carcass out of the road or work area as needed. Dead animals of special-status species found on unpaved project roads, work areas, or the ROW shall be reported to CDFW within one workday and the carcass handled as directed by CDFW.

Injured wildlife. SCE shall create and implement guidelines for dealing with injured or entrapped wildlife found on or near project roads, work areas, or the ROW, and provide these guidelines to all biological monitors. If an animal is entrapped, a qualified biological monitor shall free the animal if feasible, or work with construction crews to free the animal, in compliance with applicable safety regulations and project requirements. If biological monitors cannot free the animal or the animal is too large or dangerous for monitors to handle, SCE shall contact and work with animal control, CDFW, or other qualified party to obtain assistance for the animal as soon as possible.

SCE shall ensure that one or more qualified biological monitors receive training in the safe and proper handling and transport of injured wildlife and are provided with the appropriate equipment. These trained and equipped monitors shall be available to capture and transport injured wildlife to a local wildlife rehabilitator or veterinarian as needed. If the injured animal is too large or dangerous for monitors to handle, or a trained and equipped monitor is not available, SCE shall contact and work with a local wildlife rehabilitator, animal control, CDFW, or other qualified party to obtain assistance for the animal as soon as possible. SCE shall bear the costs of veterinary treatment and rehabilitation for any wildlife injured by project-related activities and any injured wildlife found on or near project roads, work areas, or the ROW, unless the injuries are clearly not project-related, as determined by a qualified biologist. Additionally, any entrapped or injured special-status species found on project roads, work areas, or the ROW shall be reported to the appropriate resource agency within one workday.

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	Rattlesnake guidelines. Prior to the start of construction, SCE shall prepare and implement guidelines for dealing with rattlesnakes found in or near project work areas and access roads and provide these guidelines to all biological monitors, safety staff, and other personnel. Killing or harming rattlesnakes or other wildlife is not authorized. If SCE determines that it is appropriate for biological monitors or other project personnel to handle rattlesnakes, SCE shall ensure that an adequate number of qualified individuals are trained in the safe and proper handling of rattlesnakes and provided with the appropriate safety and snake handling equipment, including a secure storage container for transporting snakes. These trained and equipped individuals shall be available to remove rattlesnakes found in or near project work areas and access roads as needed and relocate them to appropriate nearby habitat. Other project personnel shall not harass, or handle rattlesnakes, except as required to maintain immediate safety or in accordance with the guidelines developed by SCE. Handling and relocation of rattlesnakes shall be documented, and the species of rattlesnake determined whenever possible. If a special-status rattlesnake is relocated, documentation shall be submitted to CPUC and CDFW. Alternately, SCE may determine that project personnel shall not handle or approach rattlesnakes. If so, the guidelines shall specify an alternate course of action for rattlesnake encounters, such as avoiding work activity near the snake and monitoring its location and activity until it leaves the area.
Mitigation Measure BIO-1g	**Crotch Bumble Bee**
Location	Suitable Crotch bumble bee habitat in Segments 1, 2, and 3S. Other suitable habitat, as determined by pre-project surveys
Monitoring/Reporting Action	WEAP and Pre-construction surveys
Effectiveness Criteria	WEAP is implemented as approved, adaptive management best practices are implemented in coordination with CDFW if live individuals are detected
Responsible Agency	CDFW
Timing	Pre-construction surveys would occur 10 days prior to beginning work
BIO-1g	**Crotch Bumble Bee.** All on-site personnel shall be required to attend the Worker Environmental Awareness Program (WEAP), as detailed in Mitigation Measure BIO-1a (Worker Environmental Awareness Program (WEAP)), that includes education program on identification and avoidance of Crotch bumble bee and nests. If a live individual is detected during pre-construction surveys, or incidentally, the Applicant shall take adaptive management actions in coordination with CDFW, considering CDFW guidance and best management practices at the time of the occurrence. Pre-construction surveys would include inspection for Crotch bumble bee nests. If any are located, CDFW would be notified and a no-disturbance buffer of at least 50 feet would be demarcated as determined by the Lead Biologist, in coordination with CDFW.
Mitigation Measure BIO-1h	**Special-status reptiles**
Location	Suitable northern sagebrush lizard habitat in Segment 1. Suitable Mojave fringe-toed lizard habitat in Segments 3N and 3S. Other suitable habitat for special-status reptiles, as determined by pre-project surveys.
Monitoring/Reporting Action	Monitoring reports to be submitted to the CPUC
Effectiveness Criteria	Special-status reptiles are avoided or relocated
Responsible Agency	CPUC
Timing	Clearance surveys to be conducted prior to construction each day, Weekly monitoring reports to be submitted to the CPUC
BIO-1h	**Special-status reptiles.** This measure will not apply to desert tortoise; instead, surveys and avoidance for desert tortoise are addressed in Mitigation Measure BIO-1i (Desert tortoise). Biological monitors shall conduct clearance surveys in areas with suitable habitat for special-status reptiles, which may include the northern sagebrush lizard and the Mojave fringe-toed lizard, prior to construction each day, monitor construction activities for compliance, and submit monitoring

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reports to the CPUC for review on a weekly basis. Following the clearance surveys, either (1) exclusion fencing will be erected or (2) a biological monitor will be on the site during construction activities, to prevent take of special status reptiles. If the installation of exclusion fencing is deemed necessary, the biological monitor shall direct the installation of the fence.

If any reptiles are found on the construction site, the animal will be allowed to move away from the construction site on its own, or a qualified biologist will relocate it nearby suitable habitat outside the construction area and place it in the shade of a shrub, as approved by resource agencies. If potentially suitable burrows or rock piles are found, they will be checked for occupancy. Occupied burrows will be flagged and avoided (employing a 50-foot buffer) during construction. If the burrow cannot be avoided, it will be excavated and the occupant relocated to an unoccupied burrow outside the construction area and of approximately the same size as the one from which it was removed. If an existing burrow is unavailable, the biologist will construct or direct the construction of a burrow of similar shape, size, depth, and orientation as the original.

Mitigation Measure BIO-1i	**Desert tortoise**
Location	Suitable desert tortoise habitat in Segments 1, 2 (critical habitat (CH)), 3N (CH), 3S (CH)
Monitoring/Reporting Action	Pre-construction surveys and compliance reports
Effectiveness Criteria	Procedures consistent with guidance provided by CDFW and USFWS
Responsible Agency	CDFW, USFWS, CPUC, and BLM
Timing	Surveys to be conducted within fourteen (14) days preceding the start of construction

BIO-1i **Desert tortoise (Supersedes APM BIO-HERP-1).** Methods for clearance surveys, fence specification and installation, tortoise handling, artificial burrow construction, egg handling, and other procedures shall be consistent with those described in the USFWS (2009) Desert Tortoise Field Manual or more current guidance provided by CDFW and USFWS.

Desert tortoise shall be handled only by a USFWS/CDFW permitted and authorized biologist (Authorized Biologist) following appropriate USFWS protocols and in compliance with appropriate regulatory permits. A biological monitor shall monitor construction activities in all areas with the potential to support desert tortoise. Observations of desert tortoise or sign shall be immediately communicated to the Authorized Biologist.

Within suitable habitat for desert tortoise, SCE shall survey the project area for desert tortoise burrows and pallets within fourteen (14) days preceding the initial start of construction. Follow-up surveys shall also be conducted within fourteen (14) days preceding additional construction after a gap in significant construction activities of 60 calendar days or more. Surveys shall include 100 percent of the area to be disturbed and a surrounding buffer of 300 feet.

Subject to authorization by CDFW and USFWS, tortoise burrows and pallets encountered within the disturbance area (if any) shall be conspicuously flagged by the surveying biologist(s) and avoided during construction activities. If a burrow suitable for desert tortoise cannot be avoided, it shall be excavated carefully using hand tools, by or under the supervision of an Authorized Biologist, and collapsed or blocked to prevent desert tortoise reentry. If the burrow is occupied, the Authorized Biologist may move the tortoise to another burrow.

Project personnel shall inspect for desert tortoises under parked vehicles or equipment prior to moving same. If a desert tortoise is found beneath a vehicle or equipment, the vehicle or equipment shall not be moved until the tortoise has voluntarily moved to a safe distance away. If the tortoise does not move on its own accord after 20 minutes, the tortoise may be moved by an Authorized Biologist, subject to authorization by CDFW and USFWS.

If a desert tortoise is found in a work area, the tortoise shall be allowed to passively traverse the site while construction in the immediate area is halted. If the tortoise does not move out of harm's way after 20 minutes, the tortoise may be moved by an Authorized Biologist, subject to conditions and authorization by CDFW and USFWS.

Subject to authorization by CDFW and USFWS, desert tortoises shall be moved the minimum distance possible within appropriate habitat. In general, desert tortoise will not be moved in excess of 1,000 feet for adults and 300 feet for hatchlings. Desert tortoises that are moved shall

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be placed in the shade of a shrub. After being moved, the desert tortoise shall be monitored to ensure its safety. Any time a tortoise is handled, the Authorized Biologist shall take photographs and record pertinent data in their daily monitoring report. This information shall be summarized and submitted to CPUC and BLM in annual environmental compliance reports.

Subject to authorization by CDFW and USFWS, a desert tortoise removed from its burrow shall be placed in an unoccupied burrow of approximately the same size and orientation. If an existing burrow is unavailable, the Authorized Biologist will construct or direct the construction of a burrow of similar shape, size, depth, and orientation as the original burrow. Desert tortoises moved during inactive periods will be monitored for at least two days after placement in the new burrow to ensure their safety.

Subject to authorization by CDFW and USFWS, if a desert tortoise is moved at a time of the day when ambient temperatures are unfavorable (less than 40 degrees F or greater than 90 degrees F), it shall be held overnight in a clean cardboard box. The desert tortoise shall be kept in the care of the Authorized Biologist under appropriate controlled temperatures and released the following day when temperatures are favorable. All cardboard boxes will be appropriately discarded after one use.

Mitigation Measure BIO-1j	**Raven Monitoring, Management, and Control Plan**
Location	Suitable desert tortoise habitat in Segments 1, 2 (critical habitat (CH)), 3N (CH), 3S (CH)
Monitoring/Reporting Action	Raven Monitoring, Management, and Control Plan to be submitted to the CPUC, BLM, USFWS, CDWF
Effectiveness Criteria	Raven Monitoring, Management, and Control Plan is implemented as approved
Responsible Agency	CPUC, BLM, USFWS, and CDFW
Timing	Prior to the start of construction. 30 days prior to the start of construction SCE would contribute to the USFWS Regional Raven Management Program

BIO-1j **Raven Monitoring, Management, and Control Plan.** Prior to the start of construction activities, SCE shall prepare and implement a Raven Monitoring, Management, and Control Plan (Raven Plan) consistent with USFWS raven management guidelines and that meets the approval of the CPUC and BLM in consultation with USFWS, and CDFW. The purpose of the Raven Plan shall be to minimize project-related predator subsidies and prevent any increases in raven numbers or activity within desert tortoise habitat during construction, restoration, and operations and maintenance phases. The Plan shall address all project components and their potential effects on raven numbers and activity. The threshold for implementation of raven control measures shall be any increases in raven numbers from baseline conditions, as detected by monitoring to be implemented pursuant to the Plan. Regardless of raven monitoring results, SCE shall be responsible for all other aspects of raven management described in the Raven Plan, such as avoidance and minimization of project-related trash, water sources, or perch/roost/nest sites that could contribute to increased raven numbers. In addition, to offset the cumulative contributions of the Project to desert tortoise impacts from increased raven numbers, SCE shall contribute to the USFWS Regional Raven Management Program. SCE shall:

- Prepare and Implement a Raven Management Plan that shall include, but shall not be limited to, the following components. The Plan shall be reviewed and approved by CPUC, USFWS, and CDFW prior to the start of construction activities.
  - (i) Identify all potential project activities, structures, components, and other effects that could provide predator subsidies or attractants, including potential sources of food and water, and nesting materials, as well as nest or perch sites. These will include, but will not be limited to: waste food material, road-killed animals, water storage, potential pooling from leaks, dust control, or wastewater, debris from brush clearing, and perch or roost sites on project facilities and infrastructure.
  - (ii) Describe management practices to avoid or minimize conditions that might increase raven numbers and predatory activities.

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(iii) Appoint a qualified biologist who will implement a monitoring schedule and field methods for the purpose of locating any ravens present in the project vicinity and detecting any increase in raven numbers or activity.

(iv) Specify raven activity thresholds for implementation of control measures.

(v) Describe control practices for ravens to be implemented as needed based on the monitoring results.

(vi) Address monitoring and nest removal during construction and for the life of the Project.

(vii) Describe reporting schedules and requirements.

- Contribute to the USFWS Regional Raven Management Program. No later than 30 days prior to the start of construction, SCE shall contribute to the USFWS Regional Raven Management Program by making a one-time payment of $105 per acre of long-term or permanent project disturbance within the geographic range of desert tortoise, or as specified by the USFWS, to the National Fish and Wildlife Federation Renewable Energy Action Team raven control account.

Mitigation Measure BIO-1k	**Mohave ground Squirrel Avoidance and Minimization**
Location	Suitable habitat for Mohave ground squirrel in Segments 1, 2, 3N, 3S.
Monitoring/Reporting Action	Presume presence and obtain CDFW ITP; avoid high quality habitat, revegetate temporarily disturbed habitat, compensate for permanent habitat loss
Effectiveness Criteria	Avoidance, restoration, and compensation measures are implemented as approved
Responsible Agency	CDFW, CPUC
Timing	Prior to beginning of any ground disturbing activities

BIO-1k **Mohave Ground Squirrel Protection.** Within all areas identified as suitable Mohave ground squirrel (MGS) habitat, 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 APM BIO-RES-1, *Develop and Implement Habitat Restoration Plan (HRP)*. Restoration efforts shall comply with the restoration requirements, performance standards, and maintenance and monitoring protocols outlined in the Habitat Restoration Plan per APM BIO-RES-1.

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 BLM 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.

Implementation locations: Suitable Mohave ground squirrel habitat in Segments 1, 2, 3N, 3S.

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Mitigation Measure BIO-1l	**American badger and desert kit fox**
Location	Suitable habitat for desert kit fox in Segments 3N and 3S. Suitable habitat for American badger in all segments.
Monitoring/Reporting Action	Pre-construction survey results to be submitted to the CPUC
Effectiveness Criteria	Avoidance or relocation measures are implemented as approved
Responsible Agency	CPUC, BLM, USFWS, and CDFW
Timing	30 days prior to initiation of construction activities

BIO-1l **American badger and desert kit fox.** SCE shall conduct pre-construction surveys for desert kit fox and American badger no more than 30 days prior to initiation of construction activities. Surveys shall be conducted in areas that contain habitat for this these species and shall include project disturbance areas and access roads plus a 300-buffer surrounding these areas. SCE shall submit documentation providing pre-construction survey results to the CPUC for review and approval. If dens are detected, each den shall be classified as inactive, potentially active, active non-natal, or active natal.

Inactive dens located in project disturbance areas may be excavated by hand and backfilled to prevent reuse, only upon confirmation that they are inactive.

Active or potentially active dens shall be flagged and project activities, with exceptions as listed below, within 100 feet (non-natal dens) or 500 feet (natal dens, or any active den during the breeding season) shall be avoided. Ingress/egress of construction vehicles and equipment through buffers and low intensity activities such as inspections and BMP maintenance within buffers is allowed, provided a qualified biologist determines that these activities will not impact dens or denning animals. Buffers may be modified with concurrence of CPUC, in consultation with CDFW and USFWS. If active dens are found within project disturbance areas and avoidance is not possible, SCE shall take action as specified below, after notifying and obtaining concurrence from CPUC and CDFW.

Active and potentially active non-natal dens. Outside the breeding season, any potentially active dens that would be directly impacted by construction activities shall be monitored by a qualified mammologist or biologist for three consecutive nights using a tracking medium (such as diatomaceous earth or fire clay) or infrared camera stations at the entrance. If no tracks are observed in the tracking medium or no photos of the target species are captured after three nights, the den may be excavated and backfilled by hand. If tracks are observed, the den may be progressively blocked with natural materials (rocks, dirt, sticks, and vegetation piled in front of the entrance) for the next three to five nights to discourage continued use. After verification that the den is no longer active, the den may be excavated and backfilled by hand.

Active natal dens. Active natal dens (any den with cubs or pups) or any den active during the breeding season will not be excavated or passively relocated. The cub or pup-rearing season is generally from January 15 through mid-September. A 500-foot no-disturbance buffer shall be maintained around all active natal dens. Discovery of an active natal den that could be impacted by the Project shall be reported to the CPUC, BLM, and CDFW within 24 hours of the discovery along with a map of the den location and a copy of the survey results. A qualified biologist shall monitor the natal den until he or she determines that the pups have dispersed. Any disturbance to denning animals or activities that might disturb denning activities shall be prohibited within the buffer zone. Once the pups have dispersed, methods listed above for non-natal dens may be used to discourage den reuse. After verification that the den is unoccupied, it shall then be excavated by hand and backfilled to ensure that no animals are trapped in the den.

If canine distemper is reported in desert kit fox on the site or surrounding areas, then SCE shall coordinate with CPUC and CDFW to identify appropriate actions prior to continuing implementation of this mitigation measure in respect to desert kit fox. Any observations of a kit fox that appears sick or any kit fox mortality shall be reported to CPUC and CDFW within one workday.

In the event that passive relocation techniques fail, SCE shall contact the CPUC, BLM, and CDFW to explore other relocation options.

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	All den monitoring and excavation activities and passive relocations shall be documented and reported to the CDFW and CPUC in weekly monitoring reports, and a written summary will be included in each annual monitoring report.
Mitigation Measure BIO-1m	**Special-status bats**
Location	All segments in the vicinity of suitable bat habitat
Monitoring/Reporting Action	Pre-construction survey results and avoidance to be submitted to the CPUC
Effectiveness Criteria	Avoidance measures are implemented as approved
Responsible Agency	CPUC and CDFW
Timing	14 days prior to any construction activities

BIO-1m **Special-status Bats (Supersedes APM BIO-MAM-6).** SCE shall conduct surveys for roosting bats within 300 feet of project activities, within 14 days prior to any work near suitable habitat or removal of towers or trees (particularly palm trees and large trees (12 inches in diameter or greater at 4.5 feet above grade) with loose bark or other cavities). Surveys shall be conducted during the breeding season (1 March to 31 July) and the non-breeding season. Surveys shall be performed by a qualified bat biologist (i.e., a biologist holding a CDFW collection permit and a Memorandum of Understanding with CDFW allowing the biologist to handle bats). The resume of the biologist shall be provided to the CPUC for concurrence in consultation with CDFW and USFWS prior to the biologist beginning field duties on the Project. Surveys shall include a minimum of one day and one evening.

Any active bat roosts, including occupied day roosts, maternity roosts, and hibernacula, will be identified and clearly marked. An exclusion area will be established 165 feet from any active roost, and these areas will be avoided during construction activities. If active roosts are found, then focused surveys shall be conducted to determine if the sites support special-status bat species.

Prior to the initiation of construction, SCE shall submit documentation providing pre-construction survey results and any avoidance of roosting and nursery sites to the CPUC for review and approval.

Non-special-status bats. If non-breeding bat hibernacula are found in work areas, the bats shall be safely evicted, under the direction of a qualified bat biologist, by opening the roosting area to allow airflow through the cavity or other means determined appropriate by the bat biologist (e.g., installation of one-way doors). In situations requiring one-way doors, a minimum of one week shall pass after doors are installed and temperatures must be sufficiently warm for bats to exit the roost because bats do not typically leave their roost daily during winter months in southern coastal California. This action will allow all bats to leave during the course of one week. Roosts that need to be removed, in situations where the use of one-way doors is not necessary in the judgment of the qualified bat biologist, shall first be disturbed by various means at the direction of the bat biologist at dusk to allow bats to escape during the darker hours, and the roost tree shall be removed or the grading shall occur the next day (i.e., there shall be no less or more than one night between initial disturbance and the grading or tree removal).

If active maternity roosts or hibernacula are found, the areas shall be avoided (i.e., not removed) by the Project. If avoidance of the maternity roost is not feasible, the bat biologist shall survey (through the use of radio telemetry or other CDFW approved methods) for nearby alternative maternity colony sites. If the bat biologist determines in consultation with and with the approval of the CDFW and CPUC that there are alternative roost sites used by the maternity colony and young are not present, then no further action is required and it will not be necessary to provide alternate roosting habitat. However, if there are no alternative roosts sites used by the maternity colony, substitute bat roosting habitat shall be provided, as detailed below. If an active maternity roost is located in an area to be impacted by the Project, and alternative roosting habitat is available, the demolition of the roost site must commence before maternity colonies form (i.e., prior to 1 March) or after young are flying (i.e., after 31 July) using the exclusion techniques described above.

If a maternity roost will be impacted by the Project, and no alternative maternity roosts are in use near the site, substitute roosting habitat for the maternity colony shall be provided on, or in close proximity to, the project site no less than three months prior to the eviction of the colony. Alternative roost sites will be constructed in accordance with the specific bats requirements in

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coordination with CDFW. By making the roosting habitat available prior to eviction, the colony will have a better chance of finding and using the roost. Large concrete walls (e.g., on bridges) on south or southwestern slopes that are retrofitted with slots and cavities are an example of structures that may provide alternative roosting habitat appropriate for maternity colonies. Alternative roost sites must be of comparable size and proximal in location to the impacted colony. The CDFW shall also be notified of any hibernacula or active nurseries within the construction zone.

Special-status bats. If special-status bat species occur at these day roosts, maternity roosts, or hibernacula, then construction activities shall avoid these sites and a surrounding buffer distance of 300 feet. If construction activities cannot avoid these sites, construction at these sites shall be delayed until the breeding cycles for the special-status bats are completed. SCE shall consult with a bat specialist in order to determine when the breeding cycle for the special-status bats is completed. SCE shall consult with CDFW regarding eviction of non-breeding special-status bats.

Mitigation Measure BIO-1n	**Golden eagle**
Location	Suitable golden eagle habitat in Segments 1 and 2
Monitoring/Reporting Action	Survey data, nest activity, monitoring results, and adaptive management actions to be submitted to CPUC, CDFW< and USFWS
Effectiveness Criteria	Surveys and adaptive management actions are implemented as approved
Responsible Agency	CPUC, USFWS, CDFW
Timing	One year prior to start of construction

BIO-1n **Golden eagle (Supersedes APM BIO-AVI-4).** SCE shall implement the following measures to document golden eagle occurrence in the project area and surrounding mountains. Survey schedule and requirements will be as identified below unless otherwise authorized by the CPUC in consultation with the USFWS and CDFW.

Annual Nesting Season Surveys. Beginning at least one year prior to the start of construction, and continuing throughout the construction phase of the Project, SCE shall contract with a qualified biologist to conduct nesting season surveys of golden eagle habitat use within a 2-mile radius of the portions of the project area where work will occur during the breeding season (December 1 through July 31). Nesting season surveys will determine occupancy, productivity, and chronology of known or newly discovered nesting territories within the 2-mile radius. Survey methods for the inventory shall be either ground-based or helicopter-based, as described in the Golden Eagle Technical Guidance (Pagel et al., 2010) or more current guidance from the USFWS.

Nesting Season Inventory Data. At a minimum, data collected during the nesting season surveys shall include the following: territory status (unknown, vacant, occupied, breeding successful, breeding unsuccessful); nest location, nest elevation; age class of golden eagles observed; nesting chronology; number of young at each visit; photographs; and substrate upon which nest is placed.

Determination of Unoccupied Territory Status. A nesting territory or inventoried habitat shall be considered unoccupied by golden eagles only after completing at least two full surveys in a single breeding season.

Nest Buffer. If an occupied nest (as defined by Pagel et al., 2010) is detected within 2 miles of the Project, SCE shall implement a one-mile line-of-sight and one-half mile no line-of-sight buffer to ensure that project construction activities do not result in injury or disturbance to golden eagles. Triggers for adaptive management shall include any evidence of project-related disturbance to nesting golden eagles, including but not limited to: agitation behavior (displacement, avoidance, and defense); increased vigilance behavior at nest sites; changes in foraging and feeding behavior, or nest site abandonment. Adaptive management actions, include, but are not limited to, cessation of construction activities that are deemed by a qualified biologist to be the source of golden eagle disturbance.

Reporting. Golden eagle survey data and, if applicable, nest activity monitoring results and any adaptive management actions taken, will be provided to CPUC, CDFW, and USFWS in monthly monitoring reports, as seasonal data becomes available and if specific nest monitoring or any adaptive management actions are taken, and summarized in annual project monitoring reports.

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Mitigation Measure Bio-6a	**Bird and Bat Collison**
Location	All segments
Monitoring/Reporting Action	Engineering plans to be submitted to CPUC
Effectiveness Criteria	Transmission line support structures and other facility structures are designed in compliance with current standards and practices to discourage their use by raptors for perching or nesting
Responsible Agency	CPUC
Timing	Prior to beginning of any ground disturbing activities.

BIO-6a **Bird and Bat Collision.** Transmission line support structures and other facility structures shall be designed in compliance with current standards and practices to discourage their use by raptors for perching or nesting (e.g., by use of anti-perching devices). This design also reduces the potential for increased predation of special-status species, such as the desert tortoise. Mechanisms to visually warn birds (permanent markers or bird flight diverters) shall be placed on transmission lines at regular intervals to prevent birds from colliding with the lines (APLIC, 2006, 2012). To the extent practicable, the use of guy wires shall be avoided because they pose a collision hazard for birds and bats. Necessary guy wires shall be clearly marked with bird flight diverters to reduce the probability of collision. Shield wires shall be marked with devices that have been scientifically tested and found to significantly reduce the potential for bird collisions. Transmission lines shall maintain sufficient distance between all conductors and grounded components to prevent potential for electrocution of the largest birds that may occur in the area (e.g., golden eagle and turkey vulture). They shall utilize non-specular conductors and non-reflective coatings on insulators.

Cultural Resources	
APM CUL-1	**Develop a Cultural Resource Management Plan (CRMP) (Superseded by Mitigation Measure CUL-1d)**
APM CUL-2	**Avoid Environmentally Sensitive Areas (ESA) (Superseded by Mitigation Measure CUL-1d)**
APM CUL-3	**Conduct Construction Monitoring (Superseded by Mitigation Measures CUL-1e and CUL-1f)**
APM CUL-4	**Properly Treat Human Remains**
Location:	Project-wide
Monitoring/Reporting Action:	SCE to implement procedures regarding the discovery of human remains
Effectiveness Criteria:	Procedures are implemented as approved
Responsible Agency:	CPUC and BLM
Timing:	During construction activities

APM CUL-4 **Properly Treat Human Remains.** SCE will 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 BLM and County Coroner (California Health and Safety Code 7050.5(b)) will 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 will 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 CPUC will be notified immediately and the remains will be treated in accordance with Health and Safety Code Section 7050.5, CEQA Section 15064.5(e), and Public Resources Code Section 5097.98. SCE will assist and support the BLM and/or CPUC, as appropriate, in all required NAGPRA and Section 106 actions, government to-government and consultations with Native Americans, agencies, and consulting parties as requested by the BLM and/or CPUC. SCE will comply with and implement all required actions and studies that result from such consultations.

Cultural Resources	
Mitigation Measure CUL-1a	**Retain a Cultural Resources Specialist**
Location:	Project-wide
Monitoring/Reporting Action:	SCE to retain a project cultural resources specialist (CRS)
Effectiveness Criteria:	CRS is retained as approved
Responsible Agency:	CPUC
Timing:	Prior to and during construction

CUL-1a **Retain a Cultural Resources Specialist.** Prior to the start of construction, SCE shall identify a project Cultural Resources Specialist (CRS) and one or more alternates whose training and background conforms to the U.S. Secretary of Interior's Professional Qualifications Standards, as published in Title 36, Code of Federal Regulations, part 61 (36 C.F.R., part 61). The CRS shall be retained by SCE to supervise monitoring of construction excavations and to prepare a Cultural Resources Management Plan (CRMP; see Mitigation Measure CUL-1c) for the approved project. Their qualifications shall be appropriate to the needs of the project, specifically an archaeologist with demonstrated prior experience in the Owens Valley and Mojave Desert regions and previous experience working with Southern California Tribal Nations. A copy of their qualifications shall be provided to the CPUC for review and approval prior to beginning work. The project Cultural Resources Specialist and alternate(s) shall use the services of Cultural Resources Monitors (CRMs), tribal monitors and field crew as needed, to assist in mitigation, monitoring, as needed curation, and reporting activities, as outlined in the CRMP. A copy of all proposed cultural staff qualifications shall be provided to the CPUC for review and approval prior to beginning work.

Mitigation Measure CUL-1b	**Develop Data Recovery Plans for Known Historical Archaeological Resources**
Location:	Project-wide
Monitoring/Reporting Action:	SCE to develop data recovery plans
Effectiveness Criteria:	Data recovery plans are implemented as approved
Responsible Agency:	CPUC
Timing:	Prior to the start of construction

CUL-1b **Develop Data Recovery Plans for Known Historical Archaeological Resources**. If avoidance or preservation in place of an NRHP or CRHR listed or eligible resource is not feasible by the project design, then a data recovery plan shall be developed by the CRM for those impacted resources by Project segment. For precontact sites, the data recovery plan shall be developed in consultation with consulting tribes, for the portion of the resource that will be directly impacted, and will be limited to scientifically consequential data, per CEQA Guidelines § 15126.4(b)(3). The Data Recovery Plan shall include, but is not limited to, the follow:

- Specific to precontact sites on non-federal land, based on discussion with consulting tribes, alternative treatment may include no collection of any artifacts at all or some collection of artifacts and samples, for the portion of the resource that will be directly impacted. The Data Recovery Plan for each resource that cannot be avoided shall be provided by SCE to the CPUC for review and approval and to consulting tribes for review prior to implementation.
- Specific to precontact sites on non-federal land, if any artifacts or samples are collected, they will be temporarily stored at a secure location in the Owens Valley for the duration of ground disturbing activities. When ground disturbing activities have concluded, tribes will be consulted for repatriation of all collected material.
- Specific to precontact sites, no collected material will be removed from Owen's Valley without the consent of consulting tribes. Any proposed laboratory methods will be developed with this in mind.
- Storage of any collected cultural material shall be located within the SCE Material Yards, in a secure container (e.g., a secure offsite building or a Conex box). Tribal monitors and Tribal Historic Preservation Officers will be given access to the storage facility.
- Repatriation of precontact cultural material collected will be the first priority. If a consulting tribe elects for repatriation of material and requests reburial of said material on or near the project, a good faith effort will be made by SCE, CPUC, and consulting tribes to identify a location and method of reburial that is acceptable to all parties. If repatriation or reburial is not

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feasible, or an agreement cannot be reached for a reburial location or method, then the plan shall include a commitment to curate all artifacts retained as a result of any archaeological investigations in accordance with applicable laws, appropriate requirements, and the California State Historical Resources Commission's Guidelines for the Curation of Archaeological Collections. Artifacts shall be placed into a retrievable storage collection in a public repository or museum.

- A final report shall be written for data recovery efforts undertaken and submitted to the CPUC for review and approval prior to the start of construction beginning in that specific area. Once approved the report(s) will be sent to the appropriate CHRIS information center.

Mitigation Measure CUL-1c	**Implement Cultural Resources Environmental Awareness Training**
Location:	Project-wide
Monitoring/Reporting Action:	SCE to provide training
Effectiveness Criteria:	Training is implemented as approved
Responsible Agency:	CPUC
Timing:	30 days prior to the start of construction

CUL-1c **Implement Cultural Resources Environmental Awareness Training.** The Construction Training and the Operations and Maintenance (O&M) Training programs shall be defined in a Training Plan that shall be submitted to the CPUC for approval at least 30 days before the start of construction.

Construction Training. Prior to the start of ground disturbing activity, all project personnel who are not trained archaeologists or tribal monitors shall receive Cultural Resources Environmental Awareness Training that includes sensitivity training provided through participating tribes and recorded for presentation in video format. The training shall define appropriate work practices necessary to effectively implement the APMs and mitigation measures related to cultural resources and tribal cultural resources, including practices to implement in the event that human remains are found.

Training shall include:

- A discussion of applicable laws and penalties under the law;
- Samples or visuals of artifacts that might be found in the project vicinity;
- A brief review of the cultural sensitivity of the project and the surrounding area;
- A discussion and illustrations of what such artifacts may look like when partially buried, or wholly buried and then freshly exposed;
- A discussion and illustrations of what precontact and historical archaeological deposits look like at the surface and when exposed during construction, and the range of variation in the appearance of such deposits;
- Instruction that Cultural Resources Monitors (CRMs)s and Tribal Monitors have the authority to halt ground disturbance within 100 feet (30 meters) of an inadvertent cultural resource discovery to an extent sufficient (determined by CRMs and Tribal Monitors) to ensure that the resource is protected from further impacts, until the resource can be evaluated;
- Instruction that employees are responsible to halt work on their own within 100 feet (30 meters) of a potential cultural resources discovery and shall contact their direct supervisor, a CRM, and/or the Cultural Resources Specialist (CRS) and that redirection of work to ensure avoidance of impact of discovery would be determined by the construction supervisor and the CRS;
- A printed version (or reference while at work site) of an informational brochure reviewed and approved by participating tribes that identifies reporting procedures workers and relevant contact information in the event of an inadvertent cultural resources discovery;
- An acknowledgement form signed by each worker indicating that they have received the training and the informational brochure; and
- A sticker that shall be placed on hard hats indicating that environmental training has been completed.

Training shall be required for all personnel who are not trained archaeologists or tribal monitors before they begin work on a project site and repeated for all new personnel who are not trained archaeologists or tribal monitors before they begin work on the Project. Documentation of the ongoing training shall be provided to the CPUC on a monthly basis during construction. The CPUC will provide documentation to the consulting tribes.

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	Operations and Maintenance Training. The cultural resources awareness training program developed for construction workers shall be given annually to all field personnel after the Project is operational to ensure that the crew performing maintenance activities is aware of potential resources and the steps to take if resources are identified. The Operations and Maintenance Training Plan shall include a schedule for training to ensure that all field personnel are trained prior to performing maintenance work. The plan shall define procedures to be followed upon the discovery or suspected discovery of archaeological materials, tribal cultural resources, and human remains, consistent with the procedures set forth in the CRMP and the construction plan described above. This training may be integrated with a broader Worker Environmental Awareness Training program. Documentation of the ongoing training (e.g., sign-in sheets) shall be provided to the CPUC on an annual basis. The CPUC will provide documentation to the consulting tribes.
Mitigation Measure CUL-1d	**Prepare and implement a Cultural Resources Management Plan (supersedes APM CUL-1)**
Location:	Project-wide
Monitoring/Reporting Action:	SCE to prepare and implement a cultural resources management plan (CRMP)
Effectiveness Criteria:	CRMP is developed and required and implemented as approved
Responsible Agency:	CPUC
Timing:	60 days prior to the start of construction
CUL-1d	**Prepare and implement a Cultural Resources Management Plan** (supersedes APM CUL-1). The CRMP shall be submitted to the CPUC for review approval at least 60 days before the start of construction and must be maintained and utilized through the life of the Project, including maintenance activities. The CRMP shall include the following components: ■ An introduction outlining the project description, purpose for monitoring, summary of resources studies or description of known resources, anticipated construction schedule, anticipated impacts to cultural resources, unanticipated discovery protocol, repatriation and reburial, and treatment options. ■ A description of the monitoring personnel involved with the CRS, Cultural Resources Monitors, and Tribal Monitors and their roles and responsibilities. ■ Development and establishment of a formal monitoring schedule (consistent with the requirements of Mitigation Measures CUL-1d and CUL-1e). ■ An outline of the expectations for all monitors, including Tribal monitors. A defined protocol for reporting any issues or concerns identified with the behavior of any monitor. ■ A definition and description of authorities, protocols, and procedures for halting and/or pausing work in order to record, evaluate and identify any necessary treatment for any cultural resources encountered. This shall include protocols for ensuring all treatment or recovery of cultural resources is completed prior to work resuming in the area of the find. ■ A description of the cultural resources Environmental Awareness Training Program (see Mitigation Measure CUL-1b) and when and how that will take place. The CRMP shall also define the following actions: ■ **Establishing Environmentally Sensitive Areas (ESAs):** ESAs shall be established with a 50 foot buffer around each NRHP and CRHR listed or eligible resource prior to project activities. If the 50-foot buffer would encroach on a work area, the ESA buffer shall be the near edge of the identified work area. ■ **Develop Work Stoppage Plan for Previously Undiscovered Resources:** If previously undiscovered cultural resources (sites, features, or artifacts) are identified during project activities, all construction activities within 100 feet (30 meters) of the resource shall halt. The plan shall detail procedures for 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. The plan shall include methods, timelines for assessing NRHP and/or CRHR eligibility, formulation of mitigation plans with an emphasis on avoidance, and implementing treatment. Mitigation and treatment plans for unanticipated discoveries shall be reviewed and approved by the CPUC, prior to implementation.

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- **Develop Data Recovery Plan for Previously Undiscovered Resources:** If avoidance of an NRHP or CRHR listed or eligible resource is not feasible, then a data recovery plan shall be developed by the CRM. For precontact sites, the data recovery plan shall be developed in consultation with consulting tribes, for the portion of the resource that will be directly impacted, and will be limited to scientific consequential data, per CEQA Guidelines § 15126.4(b)(3). The Data Recovery Plan shall define the following options for treatment.

  - If avoidance of an NRHP or CRHR listed or eligible resource is not feasible, a plan for data recovery will be developed. Based on discussion with consulting tribes, alternative treatment may include no collection of any artifacts at all or some collection of artifacts and samples, for the portion of the resource that will be directly impacted. The Data Recovery Plan for each resource that cannot be avoided shall be provided by SCE to the CPUC for review and approval and to consulting tribes for review prior to implementation.
  - If any artifacts or samples are collected on non-federal lands, they will be temporarily stored at a secure location within the project area for the duration of ground disturbing activities. When ground disturbing activities have concluded, tribes will be consulted for reburial of the discovery and tribal monitors will participate in these efforts.
  - No collected material will be removed from Owen's Valley without the consent of consulting tribes. Any proposed laboratory methods will be developed with this in mind.
  - Temporary storage of any collected cultural material shall be located within the SCE Material Yards, in a secure container (e.g., a Conex box), or in a secure building within the project area. Tribal monitors and Tribal Historic Preservation Officers will be given access to the storage container.
  - Repatriation of precontact cultural material collected will be the first priority. If a consulting tribe elects for repatriation of material and requests reburial of said material on or near the project, a good faith effort will be made by SCE, CPUC, and consulting tribes to identify a location and method of reburial that is acceptable to all parties. If repatriation or reburial is not feasible, or an agreement cannot be reached for a reburial location or method, then the plan shall include a commitment to curate all artifacts retained as a result of any archaeological investigations in accordance with applicable laws, appropriate requirements, and the California State Historical Resources Commission's Guidelines for the Curation of Archaeological Collections. Artifacts shall be placed into a retrievable storage collection in a public repository or museum. Tribes will be invited to participate monitor the data recovery efforts.
  - A final report shall be written for each data recovery and/or alternative treatment efforts undertaken and submitted to the CPUC for review and approval prior to submitting it to the appropriate CHRIS information center.

- **Assessment of Human Remains.** The CRMP shall define the processes to be implemented in the event that human remains or suspected human remains are identified. SCE shall comply with California law (Health and Safety Code Section 7050.5; PRC Sections 5097.94, 5097.98, and 5097.99). The area shall be flagged off and all project activities within 200 feet (60 meters) of the find shall immediately cease. The CPUC-approved CRS shall be immediately notified. SCE shall immediately contact the County Coroner's office, the CPUC, as well as representatives of consulting tribes. Consulting tribes may opt of notification and allow Tribal Monitors to provide protection during the timeframe that there is an open grave. The Medical Examiner has two (2) working days to examine the remains. If the Medical Examiner believes the remains are Native American, they shall notify the California Native American Heritage Commission (NAHC) within 24 hours.

  The CRMP shall state that SCE will pay fees associated with reburial or curation for artifacts recovered and for related documentation produced during cultural resources investigations conducted for the project shall be stated. Should consulting tribes request that artifacts not be reburied, the CRMP shall identify a curation facility that could accept cultural resources materials resulting from project cultural resources investigations on private or state land. Tribal monitors shall be present for any reburials.

  The CRMP shall consider the use of Historic Human Remains Detection (HHRD) dogs before the start of ground disturbance in Segment 1. The purpose of using HHRD dogs would be to identify areas with human remains prior to their being disturbed by construction activity and to evaluate whether the construction disturbance areas can be re-defined to avoid the areas where remains were identified by the dogs. Selection of areas where HHRD dogs would be

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used shall be based on tribal consultation, and tribal monitors must be invited and paid during use of HHRD dogs. If the dogs identify the likely presence of human remains, SCE shall consult with tribes and shall evaluate feasibility of relocating the ground disturbing activities at least 50 feet outside of the area where human remains were detected. This process shall be defined in the CRMP.

- **Weekly progress reports on cultural resources activities** shall be provided to the CPUC during the duration of monitoring efforts (see Mitigation Measure CUL-1d). These reports shall include number of monitors and their locations, their tribal affiliations, discoveries, and artifacts collected, and any issues of concern raised by tribes, monitors or construction staff. A final report shall be prepared presenting the results of the monitoring efforts within 6 months of conclusion of Project activities. The contents, format, and review and approval process of the final report shall meet appropriate federal, state, and local guidelines and will be submitted to the CPUC, and the appropriate CHRIS Information Center(s).

Operations and Maintenance: The CRMP shall include a section defining protection of cultural resources during maintenance activities. The following issues shall be addressed:

- SCE will develop a non-confidential GIS database that shows ESAs that will be avoided during O&M activities. The database will be made available to O&M staff to ensure all NRHP and CRHR eligible or listed resources are avoided during O&M activities.
- Before O&M activities are to commence in project areas requiring survey, SCE shall perform cultural resources surveys for any APIs not yet surveyed (e.g., new, or modified staging areas, pull sites, or other work areas) and areas covered by expired surveys (older than 10 years). This includes areas of planned O&M activity. Resources discovered during the surveys will be evaluated and the results will be prepared in stand-alone reports and finally incorporated into this CRMP and managed accordingly.

Mitigation Measure CUL-1e	**Cultural Resources Monitoring (Supersedes APM CUL-3)**
Location:	Project-wide
Monitoring/Reporting Action:	Cultural Resources Monitors (CRMs) to conduct full-time on-site monitoring
Effectiveness Criteria:	Monitoring is conducted as approved
Responsible Agency:	CPUC
Timing:	During construction

CUL-1e **Cultural Resources Monitoring.** During construction and demolition activities on Segment 1, SCE shall provide qualified Cultural Resources Monitors (CRMs) to conduct full-time on-site monitoring during all ground disturbing activities, including those activities occurring in previously disturbed soil. During construction on Segments 2, 3N, and 3S, CRMs shall conduct full-time on-site monitoring during all ground disturbing activities within 100 feet of a NRHP or CRHR listed or eligible resource.

Where multiple areas of work are concurrently permitted for ground disturbance, or where multiple pieces of equipment are operating within the same work area, there shall be multiple monitors (at least one for each area), and a sufficient number of CRMs shall be onsite to ensure that all concurrent ground disturbing activities are monitored. The CRS shall be responsible for creating monitoring schedules for the CRMs and specifying the locations where they will be monitoring, in coordination with SCE.

The CRMs shall work under the direction of the CRS and will submit daily logs detailing the types of construction activities, soils observed, and any discoveries to the CRS. The daily log shall also identify the nature of all resources found and the methods of mitigation treatment, and Tribal Monitors notified of discovery. The CRS shall prepare a weekly summary report on the progress or status of cultural resources related activities. The weekly summary reports shall be provided to the CPUC for review within 5 business days.

The intensity of monitoring may be adjusted with the concurrence of the CPUC, SCE and tribal representatives.

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Mitigation Measure CUL-1f	**Tribal Monitoring (Supersedes APM CUL-3)**
Location:	Project-wide
Monitoring/Reporting Action:	SCE to employ Tribal Monitors
Effectiveness Criteria:	Tribal Monitors are retained as approved
Responsible Agency:	CPUC
Timing:	During all ground disturbing activities
CUL-1f	**Tribal Monitoring.** Tribal Monitors shall be employed by SCE to conduct full-time on-site monitoring during all ground disturbing activities for the duration of construction activities. The intensity of monitoring may be adjusted with the concurrence of the CPUC, SCE and tribal representatives. Preference for Tribal Monitors will be given to consulting tribes. Should multiple consulting tribes request to monitor during construction, SCE will develop a rotating schedule to ensure an equitable monitoring workload. The schedule will be included in the CRMP (see MM CUL-1c). If a senior tribal representative is needed on the Project Area during construction, they shall be compensated in addition to the Tribal Monitors.
Mitigation Measure CUL-1g	**Remove Structures by Helicopter in Culturally Sensitive Areas**
Location:	Project-wide
Monitoring/Reporting Action:	CRS, CPUC, and consulting tribes to identify culturally sensitive areas
Effectiveness Criteria:	Structure removal procedures are implemented as approved
Responsible Agency:	CPUC
Timing:	90 days prior to the start of construction
CUL-1f	**Remove Structures by Helicopter in Culturally Sensitive Areas.** At least 90 days prior to the start of construction of each of the Project segments (Segments 1, 2, 3N and 3S), the CRS shall identify culturally sensitive areas for the segment on detailed maps consultation with CPUC and consulting tribes. Any existing structures within the boundaries of a known precontact-era cultural resource on private or state-owned land that is within a mapped culturally sensitive area shall be disassembled by hand, then extracted using a helicopter. The sensitive area shall then be marked by a CRS in alignment with the guidance in MM CUL-1c (CRMP) and monitored in accordance with CUL-1d (Cultural Resources Monitoring), and MM CUL-1e (Tribal Monitoring).
Mitigation Measure CUL-1h	**Leave All Foundations in Place for Structures Removed in Culturally Sensitive Areas**
Location:	Project-wide
Monitoring/Reporting Action:	CRS, CPUC, and consulting tribes to identify culturally sensitive areas
Effectiveness Criteria:	Foundation removal procedures are implemented as approved
Responsible Agency:	CPUC
Timing:	During construction
CUL-1h	**Leave All Foundations in Place for Structures Removed in Culturally Sensitive Areas.** Where structures within the boundaries of a known precontact-era cultural resource on private or state-owned land that is within a mapped culturally sensitive area are to be removed, SCE shall leave the structure foundations in place, so as to minimize disturbance of subsurface cultural materials and the existing landscape. SCE shall remove structures by cutting at ground level with foundations. No excavation of foundations will take place in these defined sensitive areas.
Mitigation Measure CUL-1i	**Avoid Disturbance Within Environmentally Sensitive Areas**
Location:	Specified environmentally sensitive areas
Monitoring/Reporting Action:	SCE to implement avoidance measures
Effectiveness Criteria:	Avoidance measures are implemented as approved
Responsible Agency:	CPUC
Timing:	During construction

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CUL-1i **Avoid Disturbance Within Environmentally Sensitive Areas.** SCE shall implement the following measures at and around a defined, confidential sensitive site:

- The existing structure within the site boundaries shall be removed without any ground disturbance and in accordance with CRMP requirements defined in MM CUL-1c, in consultation with Tribal monitors.
- No new structure will be placed within the site boundaries; the structures north and south of the site will be designed to span the site, with revised height and structure locations developed in accordance with CRMP requirements defined in MM CUL-1c, in consultation with Tribal monitors.
- The existing access road between the two structures remaining north and south of the sites shall be closed to all future use, and shall be used for the Proposed Project with the minimum ground disturbance possible to allow removal of the existing structure. Closure design options shall be developed in consultation with Tribal monitors.
- Except as required for removal of the structure located within the site, SCE's access to the structures north and south of these sites shall be via access points north and south of the sites.

Mitigation Measure CUL-1j	**Mitigate Loss from Dismantling of Historic-Era "Tower Line" Transmission Lines (P-36-010316)**
Location:	Project-wide
Monitoring/Reporting Action:	SCE to prepare publication
Effectiveness Criteria:	Publication is prepared as approved
Responsible Agency:	CPUC
Timing:	During construction

CUL-1j **Mitigate Loss from Dismantling of Historic-Era "Tower Line" Transmission Lines (P-36-010316)**. To mitigate the complete loss of this transmission line, SCE shall prepare a publication that describes the historical importance of the transmission line, the significant events and people associated with the transmission line, and the distinctive engineering and architectural characteristics attributed to the design of the transmission line. The publication shall be suitable for display or sale in local historic museums.

Mitigation Measure CUL-1k	**Avoid and/or Mitigate Loss from Direct Impacts to Historic-Era Archaeological Resources Contributing to the Rand Mining District (P-15-007069)**
Location:	Rand Mining District
Monitoring/Reporting Action:	SCE to implement avoidance measures
Effectiveness Criteria:	Avoidance measures are implemented as approved
Responsible Agency:	CPUC
Timing:	During construction

CUL-1k **Avoid and/or Mitigate Loss from Direct Impacts to Historic-Era Archaeological Resources Contributing to the Rand Mining District (P-15-007069).** For 14 contributors to the Rand Mining District, avoidance may not be feasible. SCE shall attempt to avoid these sites, but if avoidance is not feasible, data recovery will be completed in accordance with Mitigation Measure CUL-1c. Additional mitigation for the loss of these resources will include the preparation of a formal district form for the Rand Mining District and the identification of any previously recorded contributors.

- P-15-002500
- SWCA-L030-1168
- SWCA-L030-1173
- SWCA-L030-1174
- SWCA-L030-1177
- SWCA-L030-1184
- SWCA-L030-1185
- SWCA-L030-5150
- SWCA-L030-5151
- SWCA-L030-5152
- SWCA-L030-5153
- SWCA-L030-5154
- SWCA-L030-5155
- SWCA-L030-5161

Mitigation Measure CUL-1l	**Avoid Damage to Manzanar Airfield**
Location:	Along Manzanar Reward Road, east of US 395
Monitoring/Reporting Action:	SCE to consult with NPS and landowner; prepare plan and map
Effectiveness Criteria:	Damage to airfield is avoided
Responsible Agency:	CPUC

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Timing:	Before start of construction and during construction
CUL-1l	**Avoid Damage to Manzanar Airfield.** SCE shall not use Material Yard 1-10 (Manzanar Reward Road) if other material yards are available to support construction within Segment 1. If use of any portion of the lands surrounding Manzanar Reward Road (east of US 395) cannot be avoided and is still proposed for use by SCE for a material yard, that use shall be constrained to areas and uses specifically identified in consultation with the National Park Service (NPS) staff at the Manzanar National Historic Site and with the landowner. No use shall be allowed that could result in damage to the historic features of the airfield features. SCE shall use other material yards in place of this yard. If Material Yard 1-10 cannot be eliminated, SCE shall submit to the CPUC the following documentation at least 90 days before the start of construction on Segment 1: ■ A detailed plan and map showing the area(s) that SCE would use for construction support and defining the specific uses of each area. ■ Documentation of coordination with the NPS and with the landowner, showing the agreement of those parties to the uses proposed by SCE.

Tribal Cultural Resources	
APM TCR-1	**Tribal Monitoring**
Location:	Project-wide
Monitoring/Reporting Action:	SCE to implement an archaeological and tribal monitor
Effectiveness Criteria:	Archaeological and tribal monitors are implemented as approved
Responsible Agency:	CPUC and BLM
Timing:	During construction activities
APM TCR-1	**Tribal Monitoring.** An archaeological monitor, and tribal monitor that is culturally affiliated with the project area, may be present for all ground-disturbing activities within or directly adjacent to identified TCR(s). The archaeological and tribal monitors will consult the CRMP to determine when to increase or decrease the monitoring effort should the monitoring results indicate a change is warranted. Monitoring reports will be prepared and submitted to the BLM and CPUC on a monthly basis.
APM TCR-2	**Tribal Engagement Plan**
Location:	Project-wide
Monitoring/Reporting Action:	SCE to prepare and implement a tribal engagement plan
Effectiveness Criteria:	Tribal engagement plan is implemented as approved
Responsible Agency:	CPUC
Timing:	During construction activities
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).
Mitigation Measure TCR-1a	**Conceal Exposed Tribal Cultural Resources After Construction**
Location:	Construction areas on private or state-owned land
Monitoring/Reporting Action:	Tribal monitors to be present during concealment activities
Effectiveness Criteria:	Concealment activities are monitored and implemented as approved
Responsible Agency:	CPUC
Timing:	Upon completion of construction activities
TCR-1a	**Conceal Exposed Tribal Cultural Resources After Construction.** Upon completion of construction activities on private or state-owned land, any exposed Tribal cultural resources shall be concealed to prevent looting. Tribal monitors shall be present for any concealment activities and shall be compensated for their monitoring efforts. The identification of native plants shall be consistent with the requirements developed in the Habitat Restoration and Revegetation Plan prepared in compliance with APM BIO-RES-1.

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Where existing structures are removed from the existing right-of-way and replaced by an alternative route segment, and if permitted based on coordination with the landowner, the existing access road serving these structures shall be removed. The presence of the access road shall be obscured in order to discourage passage along the abandoned right-of-way segment.

Methods of concealment may include any of the following, as determined appropriate for the situation by a Tribal monitor:

- Where feasible, relocate Tribal cultural resources to areas with less visibility.
- Reposition objects within the natural environment, such as large rocks or fallen trees, to conceal Tribal cultural resources.
- Plant native plants to help conceal resources. Planting shall be in cooperation with consulting tribes, using tribal labor if feasible. Prioritize use of plants raised by consulting tribes, if available.

Mitigation Measure TCR-1b	**Provide Funding for Tribal Resource Mapping and Monitoring Training Programs**
Location:	Project-wide
Monitoring/Reporting Action:	SCE to provide funding to consulting tribes
Effectiveness Criteria:	Funding is implemented as approved
Responsible Agency:	CPUC
Timing:	After the start of construction

TCR-1b **Provide Funding to Tribes for Research, Education, and Interpretation.** The Applicant shall create a fund with a deposit of $150,000 to be managed by a third-party fund manager at a non-profit organization, to be distributed as grants to consulting tribes. Implementation of this measure is contingent on the identification of an appropriate non-profit grant managing entity. Each of the 18 AB 52 consulting tribe may apply for a grant for up to $25,000. If the value of all grant applications exceeds the funding available, the third-party fund administrator may provide a pro-rated reduction in funding to the tribes providing grant applications.

- Grant funding shall be offered to all consulting tribes within 3 months of the start of Project construction, and (if funds remain available) again one and two years after the start of construction until funds are fully expended. The fund manager shall inform consulting tribes of the funds that are available at the start of each year and the process for applying for grants. The fund manager shall establish a 3-month period each year within which tribes may request grant funding.
- The third-party fund manager will hold, invest, and manage the funds, evaluate grant requests, disperse money to grant recipients, and provide a financial report to SCE and the CPUC on an annual basis at the end of each grant year.
- The third-party fund manager shall provide to the CPUC and SCE the following:
  - A copy of the organization's Articles of Incorporation and Bylaws.
  - Self-certification that the entity is in good standing with the IRS and is exempt from income tax under IRS code sections 501(a) and 501(c)(3).
  - A statement of the entity's purpose, as it pertains to protection of lands and/or preservation of tribal resources; and
  - The organization's policies and guidelines for staff decisions concerning grant requests and disbursement.
- The third-party fund manager shall develop a grant application request form for consulting tribes to complete. The application will explain the tribes' proposed use of grant funds, and explaining how or whether the funds would be used to study or protect resources within the Owens Valley Landscape.
- In addition to providing $150,000 in grant funding, SCE shall also be responsible for third-party fund management fee covering all direct and indirect costs associated with fund administration.
- If at the end of the three year period, funds remain in the account managed by the third-party fund manager because they have not been requested by consulting tribes, remaining funds shall be donated to the California Indian Heritage Center Foundation (a California State Parks Project).

Tribal Cultural Resources

The third-party fund manager shall prioritize grant requests that focus on study or protection of resources within the Owens Valley Landscape. Grant requests may include requests for funding such as efforts that will:

- Enhance tribal data collection and management (e.g., geographic information system development and training)
- Document or preserve tribal languages
- Develop processes for physical protection or preservation of resources (e.g., growing and planting of native plants to obscure resource locations)
- Develop educational programs for construction monitors to better understand and protect tribal resources.

Geology, Soils, and Paleontology

APM PAL-1	**Develop Paleontological Resource Mitigation and Monitoring Plan (PRMMP)**
Location:	Project-wide
Monitoring/Reporting Action:	SCE to prepare and implement a PRMMP
Effectiveness Criteria:	PRMMP is implemented as approved
Responsible Agency:	CPUC and BLM
Timing:	60 days prior to the start of construction

APM PAL-1 **Develop Paleontological Resource Mitigation and Monitoring Plan (PRMMP).** SCE shall prepare a Paleontological Resources Mitigation and Monitoring Plan (PRMMP), utilizing findings of the paleontological resource survey and technical report, to guide all paleontological management activities during project construction. The PRMMP shall be submitted to the BLM and CPUC for review and approval at least 60 days prior to the start of construction. The PRMMP shall be prepared by a qualified paleontologist, based on Society of Vertebrate Paleontology (SVP) 2010 guidelines, and meet all regulatory requirements. The qualified paleontologist shall have a Master's Degree or Ph.D. in paleontology or geology, 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 moderate (PFYC 3a) to very high (PFYC 5) sensitivity. Sediments of undetermined sensitivity shall be monitored on a part-time basis as outlined in the PRMMP. Sediments with very low or low sensitivity will not require monitoring. Paleontological monitors shall meet standard qualifications per the SVP (2010).

Unanticipated Discovery Protocol (Superseded by Mitigation Measure GSP-5a).

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 BLM and CPUC, and dissemination of reports to appropriate repositories.

APM PAL-2	**Monitor Construction for Paleontological Resources**
Location:	Construction areas with moderate to very high sensitivity for paleontological resources
Monitoring/Reporting Action:	SCE to implement a monitoring program
Effectiveness Criteria:	Monitoring program is implemented as approved
Responsible Agency:	CPUC
Timing:	During construction activities

APM PAL-2 **Monitor Construction for Paleontological Resources.** Based upon the paleontological sensitivity assessment and Paleontological Resource Mitigation and Monitoring Plan consistent with Mitigation Measure PAL-1 (Develop Paleontological Resource Mitigation and Monitoring Plan), SCE will

Geology, Soils, and Paleontology

conduct full-time construction monitoring through its qualified paleontological monitor(s) in areas determined to have moderate (PFYC 3a) to very high (PFYC 5) sensitivity. Quaternary paleosols will be included in the PFYC 3a designation. Sediments of very low (PFYC 1), low (PFYC 2), or unknown (PFYC 3b) sensitivity shall not be monitored, unless geologic mapping is found to be in error. Paleontological resource monitors per SVP (2010) shall have the equivalent of the following qualifications:

- BS or BA degree in geology or paleontology and one-year experience monitoring in the state or geologic province of the specific project. An associate degree and/or demonstrated experience showing ability to recognize fossils in a bio stratigraphic context and recover vertebrate fossils in the field may be substituted for a degree. An undergraduate degree in geology or paleontology is preferable, but is less important than documented experience performing paleontological monitoring, or
- AS or AA in geology, paleontology, or biology and demonstrated two years of experience collecting and salvaging fossil materials in the state or geologic province of the specific project, or
- Enrollment in upper division classes pursuing a degree in the fields of geology or paleontology and two years of monitoring experience in the state or geologic province of the specific project.

Monitors must demonstrate proficiency in recognizing various types of fossils, in collection methods, and in other paleontological field techniques. Copies of Monitoring Reports shall be submitted to the BLM and CPUC on a weekly basis.

APM PAL-3	**Final Reporting and Curation**
Location:	Project-wide
Monitoring/Reporting Action:	SCE to prepare a final report of paleontological monitoring
Effectiveness Criteria:	Final report is submitted
Responsible Agency:	CPUC
Timing:	60 days after completion of fieldwork

APM PAL-3 **Final Reporting and Curation.** At the conclusion of laboratory work, a final report will be prepared describing the results of the paleontological monitoring efforts associated with the project. The report will include a summary of the field and laboratory methods, an overview of the Proposed Project area geology and paleontology, a list of taxa recovered (if any) and their scientific significance, and recommendations. If the monitoring effort produced fossils, then a copy of the report will also be submitted to the designated museum repository. All significant fossils collected will be prepared in a properly equipped paleontology laboratory to a point ready for curation no more than 60 days after all fieldwork analyses are completed. Preparation will include the careful removal of excess matrix from fossil materials and stabilizing and repairing specimens, as necessary. Following laboratory work, all fossil specimens will be identified to the lowest taxonomic level, catalogued, analyzed, and delivered to an accredited museum repository for permanent curation and storage. The cost of curation is assessed by the repository and is the responsibility of SCE.

APM PAL-4	**Train Construction Personnel**
Location:	Project-wide
Monitoring/Reporting Action:	SCE to implement a training program
Effectiveness Criteria:	Training program is implemented as approved
Responsible Agency:	CPUC
Timing:	Prior to the initiation of construction

APM PAL-4 **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.

Geology, Soils, and Paleontology	
Mitigation Measure GSP-5a	**Unanticipated Discovery Paleontological Resource Protocol Update**
Location	All areas of disturbance
Monitoring/Reporting Action	Testing soils for indicators of micro vertebrate fossils
Effectiveness Criteria	Screening of test sample identifies potentially important resources
Responsible Agency	Regional Water Control Board, BLM, and Inyo, Kern, and San Bernardino Counties
Timing	During construction

GSP-5a **Unanticipated Discovery Paleontological Resource Protocol Update (Supersedes the protocol defined in APM PAL-1).** The Paleontological Resource Mitigation and Monitoring Plan (PRMMP) shall detail procedures for halting construction, defining work stoppage zones, notifying stake-holders, and assessing the paleontological find for scientific significance. If indicators of potential micro vertebrate fossils are found (e.g., carbonate-rich paleosols), screening of a test sample shall be carried out as outlined in *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources* (SVP, 2010).

Hazards and Hazardous Materials	
APM HAZ-1	**Prepare a Hazardous Materials Management Plan (HMMP)**
Location:	Project-wide
Monitoring/Reporting Action:	SCE to prepare and implement a HMMP
Effectiveness Criteria:	HMMP is implemented as approved
Responsible Agency:	CPUC
Timing:	All phases of project construction

APM HAZ-1 **Prepare a Hazardous Materials Management Plan.** Prepare a Hazardous Materials Management Plan. SCE will prepare and implement a Hazardous Materials Management Plan (HMMP)/Hazard-ous Materials Business Plan (HMBP) during project construction. The plan 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 mater-ials 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, hazard-ous materials storage, employee training requirements, hazard recognition, fire safety, first aid/emergency medical procedures, hazardous materials release containment/control procedures, hazard communication training, PPE training, and release reporting requirements. It will also include fueling and maintenance procedures for helicopters and construction equipment.

If on site refueling is necessary, BMPs shall be implemented in accordance with the project SWPPP. Refueling stations and fuel tanks will be located, maintained, and operated during construction in accordance with applicable laws and regulations pertaining to hazardous materials. If more than 1,320 gallons of petroleum products in containers greater than 55-gallons, a SPCC plan must be created prior to products being brought on-site.

All construction personnel, including environmental monitors, will be made aware of state and federal emergency response reporting guidelines for accidental spills.

APM HAZ-2	**Prepare a Soil Management Plan**
Location:	Project-wide
Monitoring/Reporting Action:	SCE to prepare and implement a Soil Management Plan
Effectiveness Criteria:	Soil Management Plan is implemented as approved
Responsible Agency:	CPUC
Timing:	During construction activities

APM HAZ-2 **Prepare a Soil Management Plan.** 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

Hazards and Hazardous Materials

activities. The Soil Management Plan will direct that during grading or excavation work, the construction contractor shall observe the exposed soil for visual evidence of contamination. If visual contamination indicators are observed during construction, potentially contaminated soil will be segregated, sampled, and tested to determine appropriate treatment and disposal options. Work in the area of the potentially contaminated soil will be stopped until appropriate measures are determined based on the testing results and are taken to protect human health and the environment. If the soil is classified as hazardous, it will be properly managed on location and transported in accordance with the 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. If potentially-contaminated groundwater is encountered, then groundwater samples will be collected and tested to determine appropriate treatment and disposal. Hazardous materials will be transported, used, and disposed of in accordance with applicable rules, regulations, and SCE standard protocols designed to protect the environment, workers, and the public.

APM HAZ-3	**Prepare and Implement a Fire Prevention and Emergency Response Plan**
Location:	Project wide
Monitoring/Reporting Action:	SCE to prepare and implement a Fire Prevention and Emergency Response Plan
Effectiveness Criteria:	Fire Prevention and Emergency Response Plan is implemented as approved
Responsible Agency:	CPUC, BLM, CALFIRE, Inyo, Kern, and San Bernardino counties, and local municipal fire agencies
Timing:	Plan to be submitted at least 30 days prior to initiation of construction

APM HAZ-3 **Prepare and Implement a Fire Prevention and Emergency Response Plan** A Fire Prevention and Emergency Response Plan will be developed to ensure the health and safety of construction workers, SCE personnel, and the public during Project construction. The Plan shall cover:

- The purpose and applicability of the plan
- Responsibilities and duties
- Project areas where the plan applies
- Procedures for incorporating Red Flag Warnings, Fire Potential Index (FPI), Project Activity Level (PAL), and equivalent indicators in determining fire weather related work restrictions
- Procedures for fire reporting, response, prevention, and evacuation routes
- Coordination procedures with federal and local fire officials
- Crew training, including fire safety practices and restrictions
- Fire suppression and communication equipment required to be on hand during construction
- Method for verification that Plan protocols and requirements are being followed
- Post-construction fire prevention and response measures

The Project-specific Fire Prevention and Emergency Response Plan for construction of the project will be prepared by SCE and submitted to CPUC, BLM, CALFIRE, Inyo, Kern and San Bernardino counties, and local municipal fire agencies for review at least 30 days prior to initiation of construction. SCE will address all comments received from reviewing agencies and provide the final Fire Prevention and Emergency Response Plan to reviewing agencies for approval prior to initiating construction activities.

Mitigation HH-4a	**Identify Soil Contamination**
Location:	Construction areas that are located where the land has historically or is currently being used for agriculture and would be subject to ground disturbance by the Project
Monitoring/Reporting Action:	CPUC to track contamination findings and disposal
Effectiveness Criteria:	Soils Management Plan is implemented as approved
Responsible Agency:	CPUC
Timing:	Prior to and during construction

Hazards and Hazardous Materials	
HH-4a	**Identify Soil Contamination (Supplements APM HAZ-2).** Prior to construction, SCE shall collect soil samples in construction areas that where the land has historically or is currently being used for agriculture or are in close proximity to the previous mines in Randsburg and would be subject to ground disturbance by the Project. SCE shall identify the possible presence of and delineate the extent of pesticide, herbicide, or mining-related contamination and provide results to the CPUC. If excavated project materials are found to contain elevated levels of pesticides, herbicides, or arsenic or heavy metals (associated within mining tailings) they will require special handling and disposal procedures consistent with the requirements of APM HAZ-2 (Prepare a Soils Management Plan) and the CPUC shall be informed. As appropriate, SCE shall contact State, Inyo County, Kern County and San Bernardino County regulatory agencies to provide oversight regarding the handling, treatment, and/or disposal options. In the event pesticide/herbicide or mining-related contamination is found, CPUC shall be notified and shall be kept apprised of the steps taken to address the problem.

Mitigation Measure HH-6a	**Unexploded Ordinance (UXO) Identification, Training, and Reporting Plan**
Location	Areas of ground disturbance where UXO or munitions debris may be encountered
Monitoring/Reporting Action	CPUC ensure that UXO Identification, Training, and Reporting Plan is adequate and enforced
Effectiveness Criteria	UXO Identification, Training, and Reporting Plan is implemented as approved
Responsible Agency	CPUC
Timing	60 days prior to the start of construction and during construction

HH-6a **Unexploded ordnance (UXO) Identification, Training, and Reporting Plan.** SCE shall prepare and implement a project-specific UXO Identification, Training, and Reporting Plan to properly train all site workers in the recognition, avoidance, and reporting of military waste, munitions debris, and ordnance, and provide guidelines for identification and removal of UXO by trained experts. The Plan shall contain, at a minimum, the following:

- Identification of areas of ground disturbance where UXO or munitions debris may be encountered that may require additional ordnance surveys prior to construction. Identification of these areas and additional surveys shall be conducted by an UXO expert or another specialist approved by the CPUC.
- A description of the training program and materials, and the qualifications of the training program preparer and training personnel
- Notification and avoidance requirements when potential UXO or munitions debris are noted by site workers
- Identification of available trained experts that will respond to notification of discovery of any UXO or munitions debris (unexploded or not)
- Work plan to recover and remove discovered UXO, ordnance or munitions debris, and complete additional field screening. Field screening may include geophysical surveys to investigate adjacent areas for surface, near surface, or buried ordnance in all proposed land disturbance areas

Mitigation Measure HH-7a	**Implement Grounding Measures to Avoid Shock**
Location	Objects within and near project ROW that have the potential to induce voltages
Monitoring/Reporting Action	Memorandum to be submitted to CPUC
Effectiveness Criteria	Grounding measures are implemented as approved
Responsible Agency	CPUC
Timing	30 days prior to construction

HH-7a **Implement grounding measures to avoid shocks.** As part of the siting and construction process, SCE shall identify objects (such as metal fences, metal buildings, and metal pipelines) within and near the right-of-way that have the potential for induced voltages. And shall implement electrical grounding of metallic objects in accordance with SCE's standards. The identification of objects

Hazards and Hazardous Materials

shall document the threshold electric field strength and metallic object size at which grounding becomes necessary. This applies also where the project alignment is located in close proximity to agricultural irrigation infrastructure.

- For all areas with potential increased or new shock hazards, SCE shall have a qualified engineer analyze the risk of induced current, corrosion, and shock hazards from the rebuilt subtransmission line on existing agricultural irrigation systems. A memorandum presenting the findings of this analysis shall be provided to the CPUC at least 30 days prior to construction activities in the vicinity of any active agricultural operations or other areas where shock hazard may exist. The report shall clearly identify the facility or infrastructure in close proximity to the Project; the results of the analysis for induced current, corrosion, and shock hazards; and proposed methods for avoiding or addressing any impacts, such as through cathodic grounding or other design changes.

Hydrology and Water Quality

Mitigation Measure HW-1a	**Drainage, Erosion, and Sediment Control Plan (DESCP)**
Location	All linear Project features and any other Project components subject to disturbance
Monitoring/Reporting Action	DESCP submitted to be submitted to Regional Water Quality Control Board, the BLM, and Inyo, Kern, and San Bernardino Counties
Effectiveness Criteria	DESCP is implemented as approved
Responsible Agency	Regional Water Control Board, BLM, and Inyo, Kern, and San Bernardino Counties
Timing	60 days prior to site mobilization

HW-1a **Drainage, Erosion, and Sedimentation Control Plan (DESCP).** At least 60 days prior to site mobilization, the Applicant shall submit to the Regional Water Quality Control Board, the BLM, and Inyo, Kern, and San Bernardino Counties for review and approval a DESCP for managing stormwater during Project construction and operations. The DESCP can be included in the Stormwater Pollution Prevention Plan (SWPPP) and must ensure proper protection of water quality and soil resources, address disturbed soil stabilization treatments in the Project area for both road and non-road surfaces, and identify all methods used for temporary and final stabilization of inactive areas. The plan must also cover all linear Project features and any other Project components subject to disturbance. The DESCP shall contain, at a minimum, the elements presented below that outline site management activities and erosion and sediment-control Best Management Practices (BMPs) to be implemented during site mobilization, excavation, construction, and post-construction (operating) activities.

- *Site Delineation*. All areas subject to soil disturbance (including new and/or improved access and spur roads, excavation, or any other soil disturbing activity) for the Project shall be delineated showing boundary lines of all construction areas and the location of all existing and proposed structures and drainage facilities that would be directly affected by soil-disturbing activities (such as stream crossings or public storm drains by the right-of-way and access roads).
- *Clearing and Grading Plans*. The DESCP shall provide a delineation of all areas to be cleared of vegetation. The plan shall provide elevations, slopes, locations, and extent of all proposed grading as shown by contours, cross sections, or other means. The locations of any equipment and staging or laydown areas, fill areas, or other special features shall also be shown. Existing and proposed topography shall be illustrated by tying in proposed contours with existing topography.
- *Erosion Control*. The plan shall address treatments to be used on exposed soil during construction and operation including specifically identifying all chemical-based dust palliatives, soil bonding, and weighting agents appropriate for use that would not cause adverse effects to vegetation. BMPs shall include measures designed to provide temporary stabilization of inactive disturbed areas and will be applied as soon as possible consistent with the Mojave Desert Air Quality Management District and SWRCB Construction General Permit requirements. The timing of suppressant or binder application will occur as soon as possible and consistent with

dust and stormwater permit requirements. Any soil stabilizers proposed shall be approved for use by the Project's Restoration Specialist to ensure that the products shall not impede restoration goals.

- *Best Management Practices*. The DESCP shall identify on the topographic site map(s) the location of the site-specific BMPs to be employed to protect drainage structures, such as public storm drains, downstream of soil disturbance activities. BMPs shall include measures designed to control dust, stabilize construction access roads and entrances, and control stormwater runoff and sediment transport.
- *Best Management Practices Narrative*. The DESCP shall show the location, timing, and maintenance schedule of all erosion- and sediment-control BMPs to be used prior to initial grading, during excavations and construction, final grading/stabilization, and operation. The maintenance schedule shall include post-construction maintenance of structural-control BMPs.
- The DESCP shall be prepared, stamped, and sealed by a professional engineer or Qualified SWPPP Developer. The DESCP shall include copies of recommendations, conditions, and provisions from the Regional Board and/or BLM.
- The DESCP may be part of the SWPPP and shall be kept onsite, kept updated, and readily available on request. The DESCP and SWPPP must demonstrate compliance with other water quality permits which may have restrictions on types of erosion or sedimentation control materials used. SWPPP inspection reporting will be consistent with the requirements of the SWRCB Construction General Permit.

Mineral Resources	
Mitigation Measure MR-2a	**Coordinate with mining facility management.**
Location	Where Project construction could affect active mining areas, including the Red Hill Quarry (Segment 1) and Rand Mining Complex (Segment 2)
Monitoring/Reporting Action	CPUC to review coordination documentation and maps
Effectiveness Criteria	Construction activities are coordinated with mining facility management
Responsible Agency	CPUC
Timing	30 days prior construction

MR-2a **Coordinate with mining facility management.** At least 30 days prior to construction within active mining areas (i.e., mining property or lease boundaries), including the Red Hill Quarry and Rand Mining Complex, SCE shall coordinate with mining facility management regarding the timing and locations of construction activities for the Project, and shall submit documentation of coordination to the CPUC. Maps of the project work areas and access roads within the facility shall be provided to the CPUC and mine operators for notification purposes and to minimize conflicts with the active mining operations. The goal of the coordination will be to minimize the potential for interference on material haul routes at the time of construction and seek feasible opportunities to plan work activities to limit disruptions and ensure safety.

Noise	
APM NOI-1	**Implement Best Management Practices for Construction Noise**
Location:	Project-wide
Monitoring/Reporting Action:	SCE to implement best management practices
Effectiveness Criteria:	Best management practices are implemented as approved
Responsible Agency:	CPUC
Timing:	During construction activities

APM NOI-1 **Implement Best Management Practices for Construction Noise.** SCE will employ the following noise-control techniques, at a minimum, to reduce construction noise exposure at noise-sensitive receptors during construction:

- To the extent feasible, construction activities will be confined to daytime, weekday and weekend hours established by the applicable local jurisdiction. 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.

Noise	
	■ Construction equipment will use noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer. ■ Construction traffic and helicopter flight will be routed away from residences and schools, where feasible. ■ Unnecessary construction vehicle use and idling time will be minimized. If a vehicle is not required for use immediately or continuously for construction activities, its engine will be shut off.
Mitigation Measure N-1a	**Implement Helicopter Noise Control Strategy**
Location	Entire Project where helicopter use would occur
Monitoring/Reporting Action	CPUC to review and approve SCE's Noise Control Strategy and verify that SCE implements the approved strategy
Effectiveness Criteria	Noise is reduced near sensitive receptors
Responsible Agency	CPUC
Timing	Ongoing during construction
N-1a	**Implement Helicopter Noise Control Strategy.** SCE shall prepare and implement a Helicopter Use Plan that includes a helicopter noise control strategy in the final Helicopter Use Plan. The noise control strategy shall include definition of helicopter flight corridors and minimum transit elevations above ground level to avoid noise-sensitive receptors on the ground. The noise control strategy shall prohibit helicopter hovering (greater than 15 minutes) within 250 feet of residences or schools in any vertical or horizontal direction. Helicopter use shall be limited to the hours of 7 a.m. to 7 p.m. Monday through Friday. The Helicopter Use Plan, including the noise control strategy, shall be provided to the CPUC for review at least 60 days prior to helicopter activities.

Recreation	
APM REC-1	**Coordinate Recreation Area Closures (Superseded by Mitigation Measure Rec-1a)**
Mitigation Measure REC-1a	**Coordinate construction schedule and activities and identify alternative recreation areas (Supersedes APM REC-1)**
Location	Baker Creek Campground, Fossil Falls ACEC and Campground, and Taboose Creek Campground (Inyo County; Crater Mountain Realignment Alternative only
Monitoring/Reporting Action	SCE documents and submits coordination with Inyo County, NPS, and BLM to CPUC
Effectiveness Criteria	Notification of proposed construction schedule and identification of alternative or replacement recreation areas or facilities coordinated with CPUC, NPS, BLM, Inyo County.
Responsible Agency	CPUC, NPS, BLM, Inyo County
Timing	90 days prior to construction
REC-1a	**Coordinate construction schedule and activities and identify alternative recreation areas (Supersedes APM REC-1).** SCE shall coordinate construction activities and the project construction schedules with representatives from Inyo County, the National Park Service (NPS), and the Bureau of Land Management (BLM) no less than 90 days prior to construction that would affect two specific recreation areas: ■ Baker Creek Campground (Inyo County) ■ Fossil Falls ACEC and Campground (BLM) ■ Taboose Creek Campground (Inyo County; Crater Mountain Realignment Alternative only) SCE shall use best efforts to schedule construction activities to avoid heavy recreational use periods, including major holidays, in coordination with the agency representative. Specifically: ■ SCE shall locate construction equipment to avoid temporary preclusion of recreation area use whenever feasible per the recommendations of the representative.

- SCE shall coordinate with Inyo County, NPS, and BLM representatives regarding construction activities in order to identify alternative recreation sites that may be used by the public and shall provide construction status information to the public as recommended by these agencies.
- SCE shall coordinate with Inyo County, NPS, and BLM representatives to notify potential users of the recreation facilities by posting a notification of proposed construction schedule, and alternative recreation sites, to the appropriate website for each recreation area.
- If existing recreation facilities are directly affected by construction or by the presence of new subtransmission facilities, SCE shall provide replacement facilities of equivalent value to existing facilities, based on recommendations from the facility managers.
- SCE shall document its coordination with Inyo County, NPS, and BLM representatives and shall submit this documentation to the CPUC at least 90 days prior to initiating project construction.

Transportation	
APM TRA-1	**Traffic Control Measures**
Location:	Project-wide
Monitoring/Reporting Action:	SCE to implement traffic control measures
Effectiveness Criteria:	Traffic control measures are implemented as approved
Responsible Agency:	CPUC
Timing:	During construction activities
APM TRA-1	**Traffic Control Measures.** SCE will implement traffic control measures consistent with those published in the Manual on Uniform Traffic Control Devices, as written and amended by Caltrans for the state of California (CA MUTCD) and using standard templates from the California Temporary Traffic Control Handbook (CATTCH) (California Inter-Utility Coordinating Committee 2018). These measures will be implemented as and where necessary as described in the CA MUTCD and/or CATTCH, or in ministerial permits.
APM TRA-2	**Helicopter Flight Plans**
Location:	Project-wide
Monitoring/Reporting Action:	SCE to consult with the FAA
Effectiveness Criteria:	FAA consultation occurs
Responsible Agency:	CPUC and FAA
Timing:	Prior to construction
APM TRA-2	**Helicopter Flight Plans.** Prior to construction, SCE will consult with the FAA regarding helicopter flight plans that will take place during construction. This consultation will 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 TRA-3	**Pedestrian Routing**
Location:	Areas where the Proposed Project encroaches on a public right-of-way
Monitoring/Reporting Action:	SCE to provide alternate pedestrian routing
Effectiveness Criteria:	Alternate pedestrian routing is implemented as approved
Responsible Agency:	CPUC
Timing:	During construction activities
APM TRA-3	**Pedestrian Routing.** Where the proposed project work area encroaches upon a public right-of-way and reduces the existing pedestrian path of travel to less than 48 inches wide, alternate pedestrian routing will be provided during construction activities.

Transportation	
Mitigation Measure T-1a	**Prepare Construction Transportation Plan**
Location	Regional and local roadways near material yards and access to project ROW
Monitoring/Reporting Action	Construction Transportation Plan submitted to CPUC, Caltrans, and affected local jurisdictions
Effectiveness Criteria	Construction Transportation Plan is implemented as approved
Responsible Agency	CPUC, Caltrans, and affected local jurisdictions
Timing	30 days prior to start of construction

T-1a **Prepare Construction Transportation Plan.** Construction traffic has the potential to significantly affect the performance of regional and local roadways by generating additional vehicle trips, near material yards and access points to the ROW. SCE shall prepare a Construction Transportation Plan (CTP) describing alternate traffic routes, timing of commutes, methods of reducing crew-related traffic, and other methods for reducing construction-generated additional traffic on regional and local roadways. The specific measures to minimize potential significant conflicts with relevant ordinances or plans shall be defined by SCE's direct coordination with each affected jurisdiction.

At minimum, the CTP shall require construction workers to park personal vehicles at staging yards or designated assembly points and carpool to work locations in order to limit the number of construction-related vehicles on the road. At construction sites, vehicles shall be required to park within the project ROW, within disturbance areas defined on CPUC-approved construction plans, or on access roads to the maximum extent possible. Parking shall not be permitted in areas with dry vegetation that could pose a fire hazard. SCE shall submit the CTP to CPUC, Caltrans, and affected local jurisdictions for review and approval at least 30 days prior to commencing construction activities.

Mitigation Measure T-1b	**Prepare Traffic Control Plan(s)**
Location	Public roads where construction has the potential to temporarily require lane or roadway closures and/or where public roads would be affected by oversize vehicle trips
Monitoring/Reporting Action	Traffic Control Plan(s) are to be submitted to CPUC, Caltrans, and affected local jurisdictions
Effectiveness Criteria	Traffic Control Plan(s) are implemented as approved
Responsible Agency	CPUC, Caltrans, and affected local jurisdictions
Timing	30 days prior to construction

T-1b **Prepare Traffic Control Plan(s).** Prior to the start of construction and as part of any required traffic encroachment permits, SCE shall submit Traffic Control Plans (TCPs) to the CPUC and agencies with jurisdiction over public roads where construction has the potential to temporarily require lane or roadway closures and/or where public roads would be affected by oversize vehicle trips.

The TCP(s) shall specifically address, but not be limited to:

Road Safety

- Provide the locations of all roads or traffic lanes that would need to be temporarily closed due to construction activities, including aerial hauling by helicopter and conductor stringing activities.
- Provide the locations and define use of flaggers, warning signs, lights, barricades, delineators, cones, arrow boards, etc. according to standard guidelines outlined in the Manual on Uniform Traffic Control Devices (MUTCD), the Standard Specifications for Public Works Construction, and/or the California Joint Utility Traffic Control Manual (CJUTCM) to provide safe work areas and to warn, control, protect, and expedite vehicular and pedestrian traffic.
- Provide the locations and define use of guard poles, netting, or similar means to protect moving traffic and structures for any construction or installation work requiring the crossing of a local street, highway, or rail line.
- Provide oversize vehicle routes, particularly on local roadways.

Transportation

- Specify use of continuous traffic breaks operated by the California Highway Patrol on state highways, and show locations as feasible.

Restrict lane closures

- To minimize traffic congestion and delays during construction, TCPs shall show how SCE plans to restrict all necessary lane closures or obstructions on public roadways associated with overhead construction activities to off-peak traffic periods. Unless absolutely necessary, lane closures shall not occur between the peak hours of 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m., or as directed in writing by the affected public agency in the encroachment permit.

Emergency Services

- Police departments, fire departments, ambulance services, and paramedic services that are likely to serve areas where temporary lane or road closures would occur shall be notified at least 30 days in advance by SCE of the proposed locations, nature, timing, and duration of any construction activities affecting roads and advised of any access restrictions that could impact their effectiveness.
- Include measures ensuring work crews are ready at all times to accommodate emergency vehicles, such as having the ability to immediately stop work for emergency vehicle passage and implement short detours and alternate routes developed in conjunction with local agencies.
- Identify all emergency service agencies that were contacted, include contact information for those agencies, present any coordination agreements, and specify coordination procedures.

Minimize disruption of bus and transit service

- Indicate how SCE coordinated with local and regional agencies or organizations providing regular bus or transit service in the project area at least 30 days prior to construction to reduce potential interruption of these services.

Ensure pedestrian and bicycle circulation and safety

- Where construction activity will result in bike route or bike path closures, appropriate detours shall be established, and detour signs shall be posted. Detours and closures required for safe pedestrian and bicycle access through or around the construction area shall be identified in a circulation plan included in the TCP(s). All detours and related signage shall be consistent with the standard guidelines outlined in the U.S. Department of Transportation's Manual on Uniform Traffic Control Devices (MUTCD).

Provide access to property

- When construction activities block access to a property and the property includes a residence or business, TCPs shall indicate how SCE will work with the property owner, tenant, or business owner to provide reasonable alternate access. If construction involves trenching across or in front of the property's point of access and alternative access is not available, SCE shall lay a temporary steel plate trench bridge as needed and upon request in order to ensure access when not actively constructing at the affected location.

The TCP(s) shall identify persons or agencies contacted, contact information, and the date of contact, and shall summarize discussions and/or agreements reached, if any. SCE shall submit the TCP(s) to CPUC, Caltrans, and affected local jurisdictions for review and approval at least 30 days prior to commencing construction activities. Copies of the TCP(s) shall be provided to the CPUC, the planning or traffic departments and transit agencies of the affected local jurisdictions, and all affected police departments, fire departments, and ambulance and paramedic services. Documentation of coordination with emergency service providers shall be provided to the CPUC at least 15 days prior to the start of construction if not provided in the applicable TCP(s).

Mitigation Measure T-1c	**Obtain Permits or Approvals for Crossing or Working in Railroad Rights of Ways**
Location	Areas where project construction activities cross railroad rights of ways
Monitoring/Reporting Action	Permits or Approvals to be submitted to CPUC
Effectiveness Criteria	Permits or approvals granted by affected rail owners
Responsible Agency	CPUC

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Timing	30 days prior to construction
T-1c	**Obtain permits or approvals for crossing or working in railroad rights-of-way.** SCE shall obtain permits/approvals from affected rail owners (Union Pacific Railroad and Burlington Northern Santa Fay Railway) to ensure project construction activities crossing the rail ROW comply with each company's safety requirements and to avoid disruption to rail traffic. Copies of required permits or approvals shall be submitted to the CPUC at least 30 days prior to construction in or across rail ROWs.
Mitigation Measure T-5a	**Repair Roadways Damaged by Construction Activities**
Location	Roads anticipated to be used by heavy vehicles and those where construction activities could affect roadway surfaces
Monitoring/Reporting Action	Documentation when the coordination has been completed and when the repairs have been completed to be submitted to CPUC
Effectiveness Criteria	Any damage is repaired to pre-construction or better condition
Responsible Agency	CPUC, Caltrans, affected local jurisdictions
Timing	30 days prior to construction; documentation of pre-project conditions. 15 days prior to construction; confirmation of execution of pre-project documentation. 60 days from end of all construction; any damage repaired.
T-5a	**Repair roadways damaged by construction activities.** If roadways, sidewalks, medians, curbs, shoulders, or other roadway features are damaged by project construction activities, as determined by the affected public agency, such damage shall be repaired and streets restored to their pre-project condition or better by SCE. Prior to construction, SCE shall confer with agencies having jurisdiction over the roads anticipated to be used by heavy vehicles and those where construction activities could affect roadway surfaces. At least 30 days prior to construction, SCE shall photograph or video record all public roads within 500 feet in each direction of project access points (i.e., locations where vehicles leave public roads to reach project sites) and where construction activities could affect roadway surfaces. This documentation shall provide the respective local jurisdictions, CPUC, and Caltrans (if applicable) with a copy of these images to show pre-project conditions. At least 15 days prior to construction, SCE shall provide a letter or email to CPUC confirming that the pre-project documentation has been executed. This communication shall identify persons or agencies contacted, contact information, and the date of contact, and shall summarize discussions and/or agreements reached. At the end of major construction, SCE shall coordinate with each affected jurisdiction to confirm the specific repairs required. Any damage is to be repaired to pre-construction or better condition within 60 days from the end of all construction, or on a schedule mutually agreed to by SCE and the jurisdiction. SCE shall provide CPUC confirming documentation when the coordination has been completed and when the repairs have been completed.
Mitigation Measure T-7a	**Prepare and implement a final helicopter use plan**
Location	Areas where helicopter use is required for the Proposed Project
Monitoring/Reporting Action	Final helicopter use plan to be submitted to CPUC
Effectiveness Criteria	Final helicopter use plan is implemented as approved
Responsible Agency	CPUC
Timing	60 days prior to the use of helicopters on the Project
T-7a	**Prepare and implement a final helicopter use plan.** SCE shall prepare and obtain approval of a Final Helicopter Use Plan prior to using helicopters to transport personnel, materials, or equipment for the deconstruction of existing project facilities or construction of new or replacement project facilities. The Final Helicopter Use Plan shall draw upon protocols and methods used on previous transmission line projects and shall be submitted to CPUC for review and approval. The Federal Aviation Agency (FAA) has jurisdiction over U.S. airspace, aircraft, aircraft operations, airports, and pilots and the Department of Defense (DOD) operates several facilities near the

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Project. To the extent that provisions do not conflict with any FAA or DOD requirements, the following shall apply to helicopter use and be incorporated in the Final Helicopter Use Plan.

- Measures for ensuring all aircraft and pilots shall be in full compliance with applicable FAA requirements and standards.
- The specific facilities, towers, poles, and spans requiring deconstruction or construction using helicopters shall be identified.
- The yards to and from which helicopters would fly (fly yards) shall be identified and shall be of sufficient size to ensure safe operations, given the other activities occurring at the yards and the vicinity.
- Measures to ensure temporary staging of materials and assembly of tower sections outside of approved yards shall not occur without prior approval of CPUC, as appropriate.
- Fly yards shall be sufficiently far from occupied residences to not create an unacceptable level of noise or dust.
- The means used for dust and noise control and for safe refueling shall be specified for each fly yard.
- Establish designated flight corridors between staging and work areas avoiding residential areas, including flight corridors between utilized airports and staging/work areas.
- Means to ensure external load operations avoid occupied structures and urban areas.
- Locations of traffic control where external load operations would cross public road-ways.
- Locations where Congested Area Plans may be required for filing with the FAA.
- Identifying any flight restrictions recommended/required by the FAA.
- All project-related flight paths (including those between airports and fly yards) shall minimize flights near residences, schools, hospitals, nursing homes, and other sensitive group receptors.
- Except in an emergency, helicopters shall land or hover near the ground only in areas previously approved for landing, and all dust control and biological and cultural resource protection requirements shall apply.
- External loads will be secured by appropriate rigging, including boxing, netting, choking, and cabling, or other suitable means. Only qualified riggers shall prepare and attach external loads to helicopters, and rigging shall be appropriate to the nature of the load, including the use of devices as necessary to prevent materials being lost in flight. Where appropriate to reduce load in-flight spinning and movement, drag chutes will be attached to loads. The need for drag chutes will be determined by the pilot and rigging personnel, where appropriate. At locations where rigging is to occur, a sufficient supply of appropriate rigging and containment materials in good repair shall be on hand at all times.
- All aircraft are to be configured with weight sensors such that, when preparing to haul external loads, the pilot is able to determine the weight of the load being lifted
- Yards or landing zones shall have a designated qualified individual managing the movement of aircraft in and out of the yard or landing zone when flight activity is high.
- Appropriate protocols for communication among pilots and between pilots and the ground shall be developed and implemented.
- Daily flight notifications shall be documented prior to commencement of any project flight activity. Information provided in the e-mail shall include pilot name, contact number, aircraft type, aircraft registration number, aircraft color, work/flight area, beginning time, estimated completion time, and scope of work. This information shall be available to CPUC monitors as requested.
- Daily helicopter construction information (for the next workday) shall be emailed to CPUC monitors (on the day prior to the planned work). These notification emails shall provide the specific sites to be used for helicopter picks and the destination of the materials or assemblages being lifted out.
- A GPS-based data system shall be installed in each aircraft:
  - The system shall identify for the pilot all project-approved project flight paths and those areas where overflights are restricted (such as seasonally restricted bird nesting areas and sensitive residential or institutional areas) and shall be updated as often as any flight restrictions are implemented or lifted.
  - The system shall automatically record and preserve flight data sufficient to identify the aircraft's flight path, including altitude above ground. The system shall be capable of providing the information required with regard to flight path and aircraft identifier and provide a location "ping" no less frequently the once every 3 seconds. These data shall be collected

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	daily and maintained by SCE or its contractor for a period of no less than six months and made available to CPUC upon request. The Helicopter Use Plan shall be submitted to CPUC for review and approval at least 60 days prior to the use of helicopters on the Project.

8. LIST OF AGENCIES CONSULTED AND EIR PREPARERS

CEQA Guidelines Section 15129 (Organizations and Persons Consulted) states that the EIR shall identify all federal, state, or local agencies, other organizations, and private individuals consulted in preparing the draft EIR, and the persons, firm, or agency preparing the draft EIR, by contract or other authorization.

Section 8.1 identifies the agencies consulted during the preparation of this EIR. Section 8.2 presents the list of preparers and reviewers.

8.1. Agencies Consulted

The following is a list of agencies consulted by the CPUC during preparation of the EIR:

Federal Agencies

- Bureau of Land Management
- Department of Defense
- Federal Aviation Administration
- Forest Service
- Fish & Wildlife Service
- National Park Service

State Agencies

- Caltrans
- Department of Fish & Wildlife
- Native American Heritage Commission*
- Regional Water Quality Control Board
- State Historic Preservation Office
- State Lands Commission

Local Agencies

- Barstow-Daggett Airport
- Great Basin Unified Air Pollution Control District
- Inyo County Planning Department
- Kern County Public Works
- Los Angeles Department of Water and Power
- San Bernardino County
- Air Pollution Control Districts

8.2. List of Preparers

An EIR is an interdisciplinary team effort. In addition, internal review of the document occurs throughout preparation at multiple levels. The California Public Utilities Commission is the CEQA Lead Agency. Aspen Environmental Group provided technical assistance in the preparation of this document. The preparers and technical reviewers of this document are presented below.

Table 8-1. Preparers and Reviewers

Preparers and Reviewers	EIR Issue Area
California Public Utilities Commission	
John Forsythe	All
Michelle Wilson	All
Aspen Environmental Group (Prime Contractor)	
Susan Lee	All
Jennifer Wu	All
Sandra Alarcon-Lopez	All
Jon Davidson	All
Brewster Birdsall, PE	Air Quality; Energy; Greenhouse Gas Emissions; Noise; Alternatives
Rachel Dal Porto, PhD	Air Quality; Energy; Greenhouse Gas Emissions; Noise

Preparers and Reviewers	EIR Issue Area
Lauren DeOliveira	Cultural Resources; Tribal Cultural Resources
Jonathan Hoffman, PhD	Geology, Soils, & Paleontology
Erin Jones	Biological Resources
John Kalish	Alternatives; Geology, Soils, & Paleontology
Lu Kernstine	All
Connor King	Alternatives; Cumulative Scenario; Cultural Resources; Tribal Cultural Resources
Jeanne Ogar	Geology, Soils, & Paleontology; Transportation
Aurie Patterson, PG	Geology, Soils, & Paleontology; Hazards and Hazardous Materials
Krystal Pulsipher	Biological Resources
Kati Simpson	All
Joe Stewart	Geology, Soils, & Paleontology
Vida Strong	MMRP
Kayla Weatherbee	Cultural Resources; Tribal Cultural Resources
Grace Weeks	Population & Housing; Public Services; Recreation; Cumulative
Scott White	Biological Resources
Justin Wood	Biological Resources
GridSME (Subcontractor)	
Gary Brown	Alternatives; Project Engineering
Kevin Feusi	Alternatives; Project Engineering
Frank McElvain	Alternatives; Project Engineering
Granite Financial Solutions (Subcontractor)	
James Thurber	Geology, Soils, & Paleontology
Michael Clayton & Associates (Subcontractor)	
Michael Clayton	Aesthetics
PaleoWest Archaeology (Subcontractor) [1]	
Matthew Tennyson	Cultural Resources; Tribal Cultural Resources
Evan Elliott, MA, RPA	Cultural Resources; Tribal Cultural Resources
Peter Mires	Cultural Resources; Tribal Cultural Resources
Josh Noyer	Cultural Resources; Tribal Cultural Resources
James Potter	Cultural Resources; Tribal Cultural Resources
Panorama Environmental (Subcontractor)	
Corey Fong	Agriculture and Forestry Resources; Land Use and Planning; Mineral Resources; Noise; Wildfire
Susanne Heim	Agriculture and Forestry Resources; Land Use and Planning; Mineral Resources; Noise; Wildfire
Charlotte Hummer	Noise
Peter Langenfeld	Aesthetics

[1] PaleoWest was acquired by the firm Chronicle Heritage in 2022.

Preparers and Reviewers	EIR Issue Area
Aaron Lui	Agriculture and Forestry Resources; Land Use and Planning; Mineral Resources; Noise; Wildfire; Aesthetics; Tribal Cultural Resources
Garret Petersen	Wildfire
Sara Sloan	Mineral Resources; Tribal Cultural Resources
Piñon Heritage Solutions (Subcontractor)	
Beth Bagwell, PhD, RPA	Cultural Resources; Tribal Cultural Resources
Elizabeth Barthold O'Brien, MA	Cultural Resources
Lucien David Osas	Cultural Resources; Tribal Cultural Resources
Michelle Cascio, MA	Cultural Resources; Tribal Cultural Resources
Mark Robinson, MA, RPA	Cultural Resources
Phaseline LLC (Subcontractor	
Chuck Williams, PE	Alternatives; Project Engineering