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4.11 Mineral Resources

This section describes the mineral resources in the area of the Eldorado-Lugo-Mohave Series Capacitor Project (Proposed Project[1]), as well as potential impacts and alternatives.

According to the United States Geological Survey (USGS), a mineral resource is defined as a concentration of naturally occurring solid, liquid, or gaseous materials 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. Mineral resources data were obtained from the following resources:

- USGS
- California Department of Conservation (DOC)
- California Geological Survey (CGS)
- County of San Bernardino General Plan
- City of Hesperia General Plan
- Clark County Comprehensive Plan
- City of Boulder City Master Plan

Aerial photographs were also used to analyze mineral resources in the vicinity of the Proposed Project.

4.11.1 Environmental Setting

The Proposed Project is located in California and Nevada, within the Mojave Basin and Range (Mojave). Federal lands constitute a majority of the land area in the Mojave, including lands under the jurisdiction of the Bureau of Land Management (BLM), National Park Service (NPS), Bureau of Reclamation (BOR), and Department of Defense (DoD). The Proposed Project would modify three existing transmission lines that extend northeast from Lugo Substation (located in San Bernardino County, California) to Eldorado Substation (located in the City of Boulder City, Nevada) and Mohave Substation (located in Clark County, Nevada), and from Mohave Substation northwest to Eldorado Substation. Portions of the Proposed Project would also cross the City of Hesperia, California, the unincorporated community of Lucerne Valley in California, as well as the unincorporated communities of Searchlight and Laughlin in Nevada.

4.11.1.1 Mineral Resources in the Proposed Project Area

Based on a review of published sources and data from the USGS Mineral Resources Data System, there are no active mines[2] and/or mineral plants within 1 mile of the Proposed Project.

[1] The term "Proposed Project" is inclusive of all components of the Eldorado-Lugo-Mohave Series Capacitor Project. Where the discussion in this section focuses on a particular component, that component is called out by its individual work area (e.g., "Ludlow Series Capacitor").

[2] Active mines are defined as U.S. mineral and metal operations that are monitored by the National Minerals Information Center of the USGS, surveyed by the USGS, and considered to be currently active as of 2003.

However, there are 48 sites with either producers,[3] past producers, or mineral prospects located within 1 mile of the Proposed Project, as detailed in Figure 4.11-1: Mineral Resources Producers, Past Producers, and Prospects Within 1 Mile of the Proposed Project[4] and Table 4.11-1: Mineral Resources Producers, Past Producers, and Prospects Within 1 Mile of the Proposed Project.

The DOC's Office of Mine Reclamation (OMR) provides oversight for local governments as they administer the California Surface Mining and Reclamation Act (SMARA) within their respective jurisdictions. Based on a review of existing mining operations from the DOC's OMR, no active mines were located within 1 mile of the Proposed Project.

The DOC Division of Oil, Gas, and Geothermal Resources (DOGGR) oversees the drilling, operation, maintenance, and plugging and abandonment of oil, natural gas, and geothermal wells in California, and tracks all known oil and gas wells. Based on a review of data from the DOC DOGGR, there are no oil wells located within 1 mile of the Proposed Project.

Mineral Resources Zones (MRZs), as classified by the California State Mining and Geology Board (SMGB), were established to designate lands that contain mineral deposits. MRZ definitions are provided in Table 4.11-2: Mineral Resource Zone Definitions. A small portion of the Eldorado-Lugo 500 kV Transmission Line and Lugo-Mohave 500 kV Transmission Line are located in areas classified as MRZ-2a and MRZ-3a, as detailed in Figure 4.11-1: Mineral Resources Producers, Past Producers, and Prospects Within 1 Mile of the Proposed Project. Within the MRZ areas, the Eldorado-Lugo 500 kV Transmission Line and Lugo-Mohave 500 kV Transmission Line do not cross any designated sectors, which are areas formally designated by the SMGB for lands containing mineral resources of regional or Statewide economic significance that are needed to meet future demand.

[3] According to the USGS, producers are mines that produce on demand or seasonally with variable lengths of activity. In addition, producers are considered to be in production at the time of data entry into the Mineral Resources Data System. Past producers are considered to be mines formerly operating that have closed, where the equipment or structures may have been removed or abandoned. Mineral prospects are considered deposits that have gone beyond the occurrence stage; the deposits may or may not have undergone feasibility studies that would lead to a decision on going into production.

[4] Figure 4.11-1: Mineral Resources Producers, Past Producers, and Prospects Within 1 Mile of the Proposed Project does not show Proposed Project areas where resources do not occur.

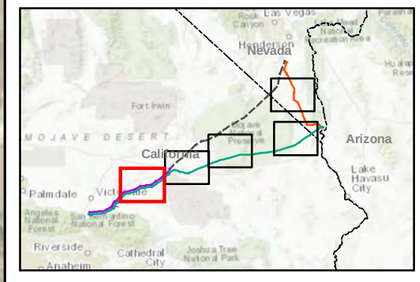
Figure 4.11-1: Mineral Resources, Producers, Past Producers, and Prospects Within 1 Mile of the Proposed Project Map 1 of 5

Eldorado-Lugo-Mohave Series Capacitor Project

- Proposed Fiber Optic Repeater Location
- Eldorado - Lugo 500 kV Transmission Line
- Lugo - Mohave 500 kV Transmission Line
- Mineral Resource
- Mineral Resource Zone
- State Boundary
- Interstate
- State Highway/US Highway

Silver Reef Mine
Silver Cliff
Iron Mountain-Bessemer-Lava Bed
Copper Strand Mine
MRZ-3a
Red Hills
Unnamed Shaft
MRZ-3a
Unnamed Prospect
Unnamed Prospect
Unnamed Prospect
Barstow Repeater
Peterson Limestone Deposit
Star Dust Group
Star Dust Group
40
247

Note: Any area that is not shown as MRZ-1, -2, or -3 has been designated as MRZ-4 and is unmapped. MRZ-4 areas contain no known mineral occurrences where geologic information does not rule out either the presence or absence of significant mineral resources.



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SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

INSIGNIA ENVIRONMENTAL

Source: Insignia, 2018; SCE, 2018;
USGS - Mineral Resources Data System, 2016

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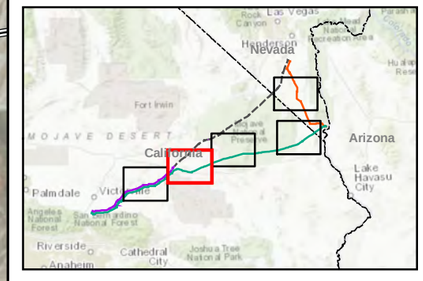
Figure 4.11-1: Mineral Resources, Producers, Past Producers, and Prospects Within 1 Mile of the Proposed Project Map 2 of 5

Eldorado-Lugo-Mohave Series Capacitor Project

- Existing Substation
- Proposed Mid-Line Capacitor Location
- Telecommunication Line
- Eldorado - Lugo 500 kV Transmission Line
- Lugo - Mohave 500 kV Transmission Line
- Transmission Line not part of Project
- Mineral Resource
- Mineral Resource Zone
- State Boundary
- Interstate

Heather Pumice Prospect
Unnamed Strontium Occurrence
Newberry Springs Series Capacitor
Ludlow Series Capacitor
Pisgah Substation
Lee Yim Deposit
Unnamed Barite Deposit
Lee Yim
Hansen Barite Deposit
Reinerth Prospect
MRZ-3a
Fort Cady Deposit
Fort Cady Process Plant
Argos Deposit
Unnamed Strontianite Prospect
Unnamed Pit
Unnamed Pit
MRZ-2a
Mt. Pisgah Volcanic Cinders
Unnamed Strontium Occurrence
Newberry Hectorite Mine
MRZ-2a
Fort Cady Solution Mine
La Douceur
Dupont, Rowe and Buehler
Dupont Stontianite Group
40
Ludlow
40

Note: Any area that is not shown as MRZ-1, -2, or -3 has been designated as MRZ-4 and is unmapped. MRZ-4 areas contain no known mineral occurrences where geologic information does not rule out either the presence or absence of significant mineral resources.



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Source: Insignia, 2018; SCE, 2018;
USGS - Mineral Resources Data System, 2016

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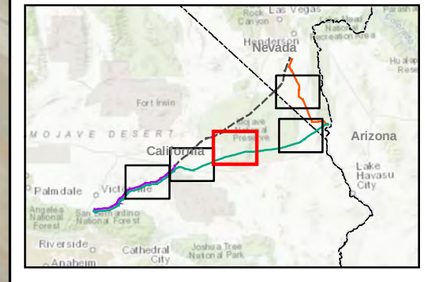
Figure 4.11-1: Mineral Resources, Producers, Past Producers, and Prospects Within 1 Mile of the Proposed Project
Map 3 of 5

Eldorado-Lugo-Mohave Series Capacitor Project

- Proposed Fiber Optic Repeater Location
- Lugo - Mohave 500 kV Transmission Line
- Transmission Line not part of Project
- Mineral Resource
- State Boundary
- Interstate

Note: Any area that is not shown as MRZ-1, -2, or -3 has been designated as MRZ-4 and is unmapped. MRZ-4 areas contain no known mineral occurrences where geologic information does not rule out either the presence or absence of significant mineral resources.



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INSIGNIA ENVIRONMENTAL

Source: Insignia, 2018; SCE, 2018;
USGS - Mineral Resources Data System, 2016

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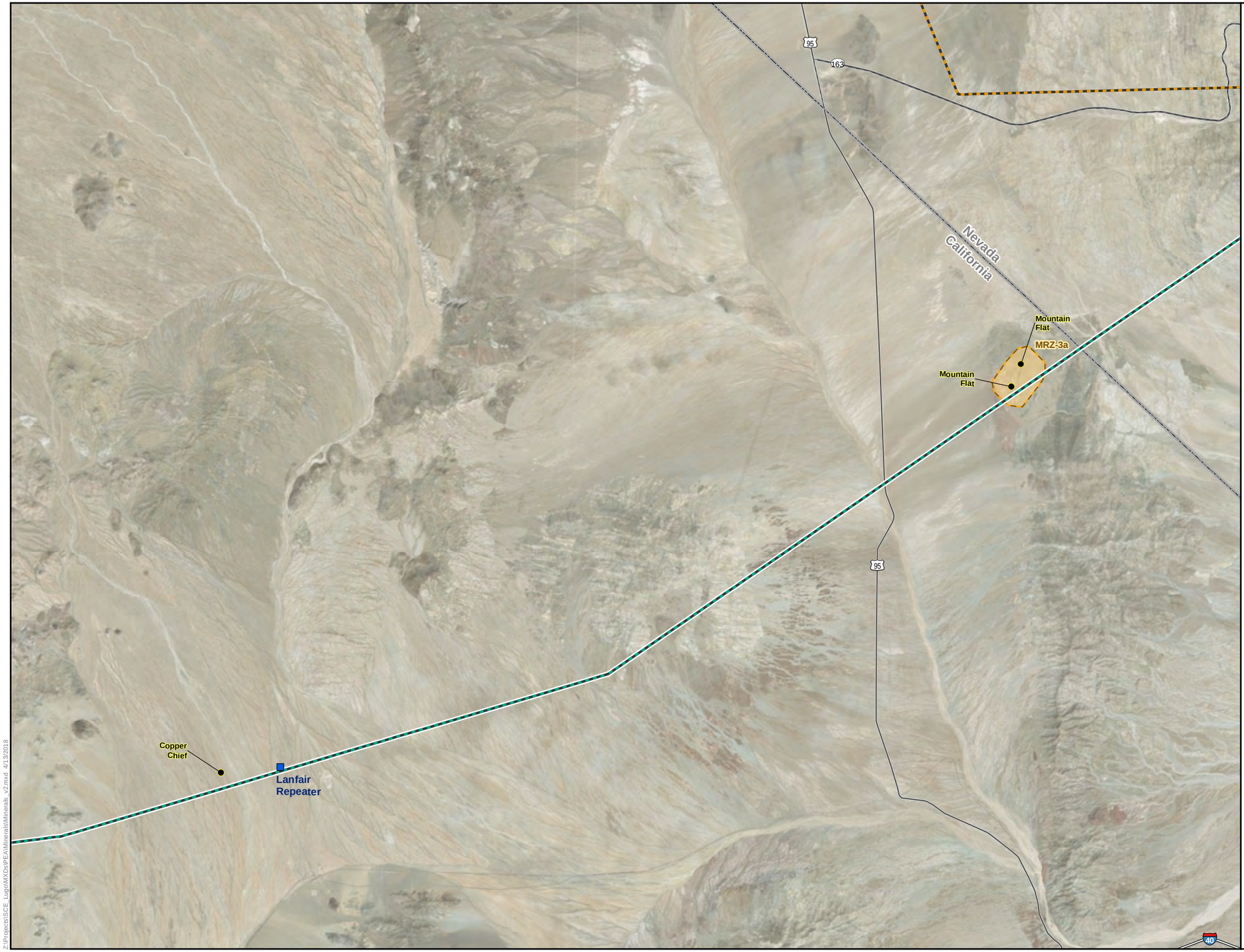
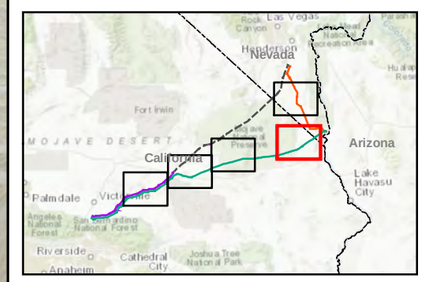
Figure 4.11-1: Mineral Resources, Producers, Past Producers, and Prospects Within 1 Mile of the Proposed Project
Map 4 of 5

Eldorado-Lugo-Mohave Series Capacitor Project



- Proposed Fiber Optic Repeater Location
- Eldorado - Mohave 500 kV Transmission Line
- Lugo - Mohave 500 kV Transmission Line
- Mineral Resource
- Mineral Resource Zone
- City Boundary
- State Boundary
- Interstate
- State Highway/US Highway

Note: Any area that is not shown as MRZ-1, -2, or -3 has been designated as MRZ-4 and is unmapped. MRZ-4 areas contain no known mineral occurrences where geologic information does not rule out either the presence or absence of significant mineral resources.



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SOUTHERN CALIFORNIA EDISON
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INSIGNIA ENVIRONMENTAL

Source: Insignia, 2018; SCE, 2018;
USGS - Mineral Resources Data System, 2016

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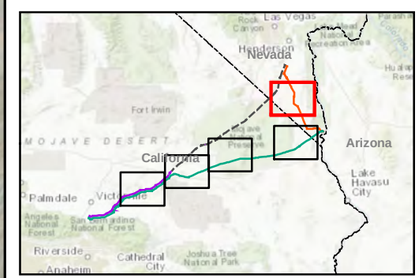
Figure 4.11-1: Mineral Resources, Producers, Past Producers, and Prospects Within 1 Mile of the Proposed Project
Map 5 of 5

Eldorado-Lugo-Mohave Series Capacitor Project

- Eldorado - Mohave 500 kV Transmission Line
- Transmission Line not part of Project
- City Boundary
- State Boundary

Note: Any area that is not shown as MRZ-1, -2, or -3 has been designated as MRZ-4 and is unmapped. MRZ-4 areas contain no known mineral occurrences where geologic information does not rule out either the presence or absence of significant mineral resources.



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Source: Insignia, 2018; SCE, 2018; USGS - Mineral Resources Data System, 2016

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Table 4.11-1: Mineral Resources Producers, Past Producers, and Prospects Within 1 Mile of the Proposed Project

Mineral Prospect/ Past Mining Activity	Development Status	Commodity	Approximate Distance to Nearest Proposed Project Component (Miles)	Relative Location and Nearest Proposed Project Component
California				
Argos Deposit	Past Producer	Strontium	0.1	Lugo-Mohave 500 kilovolt (kV) Transmission Line
Due Group Prospect	Prospect	Gold	0.1	Lugo-Mohave 500 kV Transmission Line
Foshay Pass Barite	Occurrence	Barium-Barite	0.1	Lugo-Mohave 500 kV Transmission Line
Heather Pumice Prospect	Occurrence	Pumice	0.1	Newberry Springs Series Capacitor
La Douceur	Prospect	Strontium	0.1	Lugo-Mohave 500 kV Transmission Line
Mountain Flat	Prospect	Gold	0.1	Lugo-Mohave 500 kV Transmission Line
Unnamed Strontianite Occurrence	Occurrence	Strontium	0.1	Lugo-Mohave 500 kV Transmission Line
Bonanza King	Past Producer	Silver, Lead, Copper, Gold	0.2	Lugo-Mohave 500 kV Transmission Line
Dupont, Rowe and Buehler	Past Producer	Strontium	0.2	Lugo-Mohave 500 kV Transmission Line

Mineral Prospect/ Past Mining Activity	Development Status	Commodity	Approximate Distance to Nearest Proposed Project Component (Miles)	Relative Location and Nearest Proposed Project Component
Hansen Barite Deposit	Past Producer	Barium-Barite	0.2	Lugo-Mohave 500 kV Transmission Line
Providence	Past Producer	Lead, Silver, Copper	0.2	Lugo-Mohave 500 kV Transmission Line
Unnamed Pit	Past Producer	Stone, Crushed/Broken	0.2	Lugo-Mohave 500 kV Transmission Line
Unnamed Strontianite Prospect	Occurrence	Strontium	0.2	Lugo-Mohave 500 kV Transmission Line
Copper Chief	Past Producer	Copper, Gold, Silver	0.3	Lugo-Mohave 500 kV Transmission Line
Crucerro Group	Occurrence	Gold	0.3	Lugo-Mohave 500 kV Transmission Line
Fort Cady Process Plant	Prospect	Boron-Borates, Gypsum-Anhydrite	0.3	Lugo-Mohave 500 kV Transmission Line
Fort Cady Solution Mine	Prospect	Boron-Borates, Gypsum-Anhydrite	0.3	Lugo-Mohave 500 kV Transmission Line
Goldstone Spring Adit	Prospect	Gold, Silver, Copper	0.3	Lugo-Mohave 500 kV Transmission Line
Unnamed Barite Deposit	Occurrence	Barium-Barite	0.3	Lugo-Mohave 500 kV Transmission Line
Unnamed Prospect	Occurrence	Iron	0.3	Lugo-Mohave 500 kV Transmission Line

Mineral Prospect/ Past Mining Activity	Development Status	Commodity	Approximate Distance to Nearest Proposed Project Component (Miles)	Relative Location and Nearest Proposed Project Component
East Burro Prospect	Occurrence	Iron	0.4	Lugo-Mohave 500 kV Transmission Line
Dupont Stontianite Group	Occurrence	Strontianite, Strontium	0.4	Lugo-Mohave 500 kV Transmission Line
Kelso Dunes	Past Producer	Silica, Gold, Iron, Titanium	0.4	Lugo-Mohave 500 kV Transmission Line
Kit Fox	Prospect	Barium-Barite	0.4	Lugo-Mohave 500 kV Transmission Line
Mountain Flat	Past Producer	Gold, Copper	0.4	Lugo-Mohave 500 kV Transmission Line
Parker Mill Site	Producer	Silica, Iron, Feldspar	0.4	Eldorado-Mohave 500 kV Transmission Line
Reinerth Prospect	Past Producer	Manganese	0.4	Lugo-Mohave 500 kV Transmission Line
Sunrise Prospect	Prospect	Gold, Copper	0.4	Lugo-Mohave 500 kV Transmission Line
Unnamed Pit	Past Producer	Sand and Gravel, Construction	0.4	Eldorado-Lugo 500 kV Transmission Line
Unnamed Prospect	Prospect	Copper	0.4	Eldorado-Lugo 500 kV Transmission Line
Unnamed Shaft	Prospect	Silver	0.4	Eldorado-Lugo 500 kV Transmission Line

Mineral Prospect/ Past Mining Activity	Development Status	Commodity	Approximate Distance to Nearest Proposed Project Component (Miles)	Relative Location and Nearest Proposed Project Component
Adams-Anna Ore	Prospect	Gold, Silver	0.6	Lugo-Mohave 500 kV Transmission Line
Blue Danube	Prospect	Gold, Silver	0.6	Lugo-Mohave 500 kV Transmission Line
Burro No. 31 Prospect	Prospect	Gold, Copper	0.6	Lugo-Mohave 500 kV Transmission Line
Iron Mountain-Bessemer-Lava Bed	Producer	Iron	0.6	Eldorado-Lugo 500 kV Transmission Line
Red Hills	Past Producer	Gold	0.6	Eldorado-Lugo 500 kV Transmission Line
Peterson Limestone Deposit	Past Producer	Limestone, General	0.7	Lugo-Mohave 500 kV Transmission Line Barstow Fiber Optic Repeater
Silver Cliff	Occurrence	Silver, Lead	0.7	Eldorado-Lugo 500 kV Transmission Line
Silver Reef Mine	Prospect	Zinc, Silver, Lead	0.7	Eldorado-Lugo 500 kV Transmission Line
Star Dust Group	Occurrence	Tungsten	0.7	Lugo-Mohave 500 kV Transmission Line Barstow Fiber Optic Repeater

Mineral Prospect/ Past Mining Activity	Development Status	Commodity	Approximate Distance to Nearest Proposed Project Component (Miles)	Relative Location and Nearest Proposed Project Component
Star Dust Group	Prospect	Tungsten	0.8	Lugo-Mohave 500 kV Transmission Line Barstow Fiber Optic Repeater
Tip Top Prospect	Prospect	Copper, Silver	0.7	Lugo-Mohave 500 kV Transmission Line
Copper Strand Mine	Past Producer	Copper	0.8	Eldorado-Lugo 500 kV Transmission Line
Newberry Hectorite Mine	Past Producer	Clay	0.8	Eldorado-Lugo 500 kV Transmission Line
Pennsylvania	Prospect	Gold, Silver, Copper	0.8	Eldorado-Mohave 500 kV Transmission Line
Unnamed Prospect	Prospect	Gold, Copper, Silver	0.8	Eldorado-Lugo 500 kV Transmission Line
Vulcan Mine – Burro Prospect	Past Producer	Iron	0.8	Lugo-Mohave 500 kV Transmission Line
Burro Nos. 54 and 55 Prospect	Prospect	Copper	0.9	Lugo-Mohave 500 kV Transmission Line
Fort Cady Deposit	Prospect	Boron-Borates, Gypsum-Anhydrite, Strontium, Halite, Sodium	0.9	Eldorado-Lugo 500 kV Transmission Line
Lee Yim	Producer	Psilomelane, Manganese	0.9	Lugo-Mohave 500 kV Transmission Line

Mineral Prospect/ Past Mining Activity	Development Status	Commodity	Approximate Distance to Nearest Proposed Project Component (Miles)	Relative Location and Nearest Proposed Project Component
Lee Yim Deposit	Past Producer	Silica, Manganese, Iron, Calcium, Barium-Barite, Aluminum, Phosphorus-Phosphates	0.9	Lugo-Mohave 500 kV Transmission Line
Mt. Pisgah Volcanic Cinders	Past Producer	Pumice	0.9	Lugo-Mohave 500 kV Transmission Line
Star Dust Group	Occurrence	Tungsten	0.9	Lugo-Mohave 500 kV Transmission Line
Unnamed Strontium Occurrence	Occurrence	Strontium	0.9	Lugo-Mohave 500 kV Transmission Line
Vulcan Mine Dolomite	Occurrence	Magnesite, Dolomite	0.9	Lugo-Mohave 500 kV Transmission Line
Center Prospect	Prospect	Gold, Silver	1.0	Lugo-Mohave 500 kV Transmission Line
Riley Mine	Past Producer	Gold	1.0	Eldorado-Lugo 500 kV Transmission Line Barstow Fiber Optic Repeater
Unnamed Prospect	Prospect	Gold, Silver, Copper	1.0	Lugo-Mohave 500 kV Transmission Line
Nevada				
Searchlight M & M	Producer	Gold	0.2	Eldorado-Mohave 500 kV Transmission Line

Mineral Prospect/ Past Mining Activity	Development Status	Commodity	Approximate Distance to Nearest Proposed Project Component (Miles)	Relative Location and Nearest Proposed Project Component
Searchlight Parallel Mine	Occurrence	Silver, Gold	0.3	Eldorado-Mohave 500 kV Transmission Line
Golden Dawn's Mine	Occurrence	Gold	0.4	Eldorado-Mohave 500 kV Transmission Line
Searchlight District	Producer	Vanadium, Zinc, Copper, Lead	0.4	Eldorado-Mohave 500 kV Transmission Line
Cyrus Noble	Past Producer	Silver, Gold	0.5	Eldorado-Mohave 500 kV Transmission Line
Oro Plata Mine	Occurrence	Silver	0.5	Eldorado-Mohave 500 kV Transmission Line
Searchlight Parallel Mine	Past Producer	Gold, Silver	0.5	Eldorado-Mohave 500 kV Transmission Line
Continental Heap Leach	Producer	Silver, Gold	0.6	Eldorado-Mohave 500 kV Transmission Line
Coyote Mine and Mill	Unknown	Gold	0.6	Eldorado-Mohave 500 kV Transmission Line
Cyrus Noble Mine	Past Producer	Silver, Gold	0.6	Eldorado-Mohave 500 kV Transmission Line
Search Light Insulation Prod. Mine	Past Producer	Perlite	0.6	Eldorado-Mohave 500 kV Transmission Line
Blossom Mine	Past Producer	Gold, Silver	0.7	Eldorado-Mohave 500 kV Transmission Line

Mineral Prospect/ Past Mining Activity	Development Status	Commodity	Approximate Distance to Nearest Proposed Project Component (Miles)	Relative Location and Nearest Proposed Project Component
Blossom Mine	Past Producer	Gold, Silver, Lead, Copper	0.7	Eldorado-Mohave 500 kV Transmission Line
Pompeii Mine	Past Producer	Silver, Gold	0.7	Eldorado-Mohave 500 kV Transmission Line
Pompeii Mine	Past Producer	Gold, Silver, Zinc	0.7	Eldorado-Mohave 500 kV Transmission Line
Santa Fe	Occurrence	Gold, Silver	0.7	Eldorado-Mohave 500 kV Transmission Line
Sante Fe Mine	Prospect	Gold, Silver	0.7	Eldorado-Mohave 500 kV Transmission Line
Searchlight M & M Mine	Past Producer	Gold, Zinc, Silver	0.7	Eldorado-Mohave 500 kV Transmission Line
Southern Nevada Mine	Past Producer	Gold, Copper, Lead, Silver	0.8	Eldorado-Mohave 500 kV Transmission Line
Good Hope Mine	Past Producer	Gold, Copper, Lead, Silver, Zinc	0.9	Eldorado-Mohave 500 kV Transmission Line
Quartette Mine	Past Producer	Gold, Lead, Molybdenum, Silver, Zinc, Copper	0.9	Eldorado-Mohave 500 kV Transmission Line
Southern Nevada Mine	Occurrence	Silver, Gold	0.9	Eldorado-Mohave 500 kV Transmission Line
Good Hope Mine	Past Producer	Cuprite, Galena, Hematite, Wulfenite, Gold, Silver	1.0	Eldorado-Mohave 500 kV Transmission Line

Mineral Prospect/ Past Mining Activity	Development Status	Commodity	Approximate Distance to Nearest Proposed Project Component (Miles)	Relative Location and Nearest Proposed Project Component
Red Bird Mine	Past Producer	Gold	1.0	Eldorado-Mohave 500 kV Transmission Line

Source: USGS (2016)

Table 4.11-2: Mineral Resource Zone Definitions

MRZ Type	Definition
MRZ-1	Areas where available geologic information indicates there is little likelihood for the presence of mineral resources.
MRZ-2a	Areas that contain significant measured or indicated reserves.
MRZ-2b	Areas where geologic information indicates that significant inferred resources or demonstrated subeconomic resources are present.
MRZ-3a	Areas likely to contain undiscovered mineral deposits similar to known deposits in the same producing district or region (hypothetical resources).
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).
MRZ-4	Areas where geologic information does not rule out either the presence or absence of mineral resources.
ARA-6	Area with aggregate resources rated as highly significant.

Source: SMGB (1988)

The Nevada Bureau of Mines and Geology (NBMG) is a research and public service unit of the University of Nevada and is responsible for the State geological survey. The NBMG conducts research and publishes reports on mineral resources, engineering geology, environmental geology, hydrogeology, and geologic mapping. The NBMG collaborates with numerous state and federal agencies in conducting research and in providing geologic and resource information.

4.11.2 Regulatory Setting

Federal, State, and local regulations were reviewed for applicability to the Proposed Project. The following subsections describe regulations regarding mineral resources that are relevant to the Proposed Project.

4.11.2.1 Federal

In addition to the federal regulation described in the following subsection, federal authorizations will also be required because a majority of the land within the Proposed Project area is under the jurisdiction of the BLM, NPS, BOR, and DoD.

Mineral Leasing Act of 1920

The Mineral Leasing Act authorizes and governs the leasing of public lands to develop deposits of coal, oil, gas, and other hydrocarbons, sulfur, phosphate, potassium, and sodium. The BLM issues right-of-way (ROW) grants for oil and natural gas gathering, distribution pipelines, and related facilities, as well as oil and natural gas transmission pipelines and related facilities.

4.11.2.2 State

California

California Public Utilities Commission General Order 131-D

Pursuant to California Public Utilities Commission (CPUC) General Order (G.O.) 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 the California Environmental Quality Act (CEQA), the CPUC is the Lead Agency with respect to such Proposed Project elements within the State of California. Southern California Edison (SCE) is required to comply with G.O. 131-D and is seeking a Permit to Construct from the CPUC for the Proposed Project.

Surface Mining and Reclamation Act of 1975

The CGS designates MRZs where access to important mineral resources may be threatened, according to the provisions of the SMARA of 1975. The SMARA requires that all jurisdictions incorporate mapped mineral resource designations—as approved by the SMGB—into their general plans. The SMGB and the DOC's OMR are jointly charged with ensuring proper administration of the SMARA's requirements. The SMGB promulgates regulations to clarify and interpret the SMARA's provisions, as well as to serve as a policy and appeals board. The OMR provides an ongoing technical assistance program for lead agencies and operators, maintains a database of mine locations and operational information Statewide, and is responsible for compliance-related matters.

Nevada

Nevada Revised Statutes Section 704.865

Nevada Revised Statutes Section 704.865 provides that "A person, other than a local government, shall not commence to construct a utility facility in the State of Nevada without first having obtained a permit therefor from the Commission. The replacement of an existing facility with a like facility, as determined by the Commission, does not constitute construction of a utility facility." The Public Utilities Commission of Nevada is the Lead Agency for compliance with the Nevada Utility Environmental Protection Act.

Nevada Administrative Code Chapters 445A.350 through 445A.447, and 519A.010 through 519A.415

Mining activities in Nevada are regulated by the Nevada Division of Environmental Protection Bureau of Mining Regulation and Reclamation (BMRR), in cooperation with other federal, State, and local agencies under regulations adopted in 1989 (Nevada Administrative Code Chapters 445A.350 through 445A.447, and 519A.010 through 519A.415). The BMRR has regulation, closure, and reclamation branches; and its mission is to ensure that mining operations do not degrade Nevada's waters and that land disturbed by mining operations is reclaimed in a manner to ensure productive post-mining use.

4.11.2.3 Local

The CPUC has sole and exclusive jurisdiction over the siting and design of the Proposed Project components located in the State of California. Pursuant to CPUC G.O. 131-D, Section XIV.B, "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and cities' regulations are not applicable as the county and cities do not have jurisdiction over the Proposed Project. Accordingly, the following discussion of local regulations is provided for informational purposes only. The Proposed Project is subject to local regulations in the State of Nevada.

California

County of San Bernardino

County of San Bernardino 2007 General Plan

The Land Use Element of the County of San Bernardino 2007 General Plan contains the following policy that is relevant to the Proposed Project:

- Policy LU 7.1: Ensure that land use developments within the state-delineated Mineral Resource Zones (MRZs) are in accordance with the adopted mineral resources management policies of the County.

The Conservation Element of the County of San Bernardino 2007 General Plan contains the following policy that is relevant to the Proposed Project:

- Policy CO 7.2: Implement the state Mineral Resource Zone (MRZ) designations to establish a system that identifies mineral potential and economically viable reserves.

County of San Bernardino Development Code

The development code states that mine development is encouraged in compatible areas before encroachment of conflicting uses. Mineral resource areas that have been classified by the DOC's Division of Mines and Geology or designated by the SMGB shall be protected from intrusion by incompatible land uses that may impede or preclude mineral extraction or processing, to the extent possible for consistency with the County of San Bernardino 2007 General Plan. This also applies to existing surface mining operations that remain in compliance with the provisions of Section 19.68.020 of the development code.

City of Hesperia

City of Hesperia General Plan 2010

The Conservation Element of the City of Hesperia General Plan 2010 does not contain any specific goals or policies that are relevant to the Proposed Project.

Hesperia, California Municipal Code

The City of Hesperia's Municipal Code does not contain any specific regulations that are relevant to the Proposed Project.

Nevada

Clark County

Clark County Comprehensive Plan

The Conservation Element of the Clark County Comprehensive Plan contains the following policy that is relevant to the Proposed Project:

- Policy CON 2.2: Encourage preservation of unique geologic and mineral formations for educational, scientific, recreational and aesthetic value

Clark County Code of Ordinances

The Clark County Code of Ordinances does not contain any specific regulations that are relevant to the Proposed Project.

South County Land Use Plan

The South County Land Use Plan does not contain any specific goals or policies that are relevant to the Proposed Project.

Laughlin Land Use Plan

The Laughlin Land Use Plan does not contain any specific goals or policies that are relevant to the Proposed Project.

City of Boulder City

Boulder City Master Plan

The Boulder City Master Plan does not contain any specific goals or policies that are relevant to the Proposed Project.

Boulder City, Nevada City Code

The Boulder City, Nevada City Code does not contain any specific regulations that are relevant to the Proposed Project.

4.11.3 Significance Criteria

The significance criteria for assessing the impacts to mineral resources come from the CEQA Environmental Checklist.[5] According to the CEQA Checklist, a project causes a potentially significant impact if it would:

[5] CEQA is a statute that requires State of California and local agencies in California to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible. There is no CEQA

- 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
- 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

4.11.4 Impact Analysis

4.11.4.1 Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?

Construction

No Impact. There are no active mining and/or mineral plant sites reported in the State databases within 1 mile of the Proposed Project in the States of California or Nevada. There are 48 mineral resource producers, past producers, or prospects within 1 mile of the Proposed Project; however, none are located within the ROW for the Proposed Project. Construction would occur primarily within existing or to-be-acquired franchise areas and ROWs. Therefore, the Proposed Project would not prevent future extraction of any of these mineral resources. Furthermore, the Proposed Project does not cross any designated sectors; and construction activities would occur within existing or to-be-acquired ROWs. The Proposed Project would not prevent the mineral resources in the surrounding areas from being extracted. Therefore, there would be no loss of availability of regionally valuable aggregate resources, and no impact would occur.

Operation

No Impact. Operation and Maintenance (O&M) activities associated with the Proposed Project would be similar to those currently performed by SCE for existing facilities, and generally include repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, repairing or replacing poles and towers, tree trimming, brush and weed control, and access road maintenance, among other things. O&M practices would also include routine inspections and emergency repair within substations and ROWs, which would require the use of vehicles and equipment. SCE also inspects the transmission and subtransmission overhead facilities in a manner consistent with CPUC G.O. 165, which requires observation a minimum of once per year, but inspection typically occurs more frequently to ensure system reliability. Following construction of the mid-line series capacitors,[6] additional O&M activities would consist of monthly and annual inspections, as well as equipment testing and maintenance of emergency generators, ranging from once a year to once every five years. Additional testing, inspections and maintenance of the building, site, generator, and fuel tank would also be required at the new fiber optic repeater facilities every six months to once a year. Because routine O&M activities would occur within existing or to-be-acquired franchise areas and ROWs and would not reduce the availability of known mineral resources, no impact would occur.

equivalent for the State of Nevada. Therefore, in the absence of such regulations, the Proposed Project (including components in Nevada) has been evaluated against the CEQA significance criteria. Where specific Nevada environmental regulations exist, a discussion has been included in the impact analysis for the Proposed Project.

[6] The Proposed Project includes construction of two new 500 kV mid-line series capacitors—the proposed Newberry Springs Series Capacitor and Ludlow Series Capacitor.

4.11.4.2 Would the project result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

Construction

No Impact. The general, comprehensive, and land use plans prepared for the County of San Bernardino, Clark County, and the Cities of Hesperia and Boulder City do not designate areas outside those already designated by the SMGB as having important mineral resources. As previously discussed, the Proposed Project is located in areas classified as MRZ-1, MRZ-2a, MRZ-2b, MRZ-4, and ARA-6; none of these areas contain designated sectors; and construction activities would occur within existing or to-be-acquired franchise areas and ROWs. As previously discussed, no active mines, mineral plants, producers, or prospects are located within the ROW for the Proposed Project. As a result, there would be no impact to a locally important mineral resource recovery site delineated in a general plan, specific plan, or other land use plan due to construction of the Proposed Project.

Operation

No Impact. As previously described, O&M activities associated with the Proposed Project would be similar to those currently performed for the existing facilities, with additional O&M activities associated with the proposed mid-line series capacitors and fiber optic repeater sites. As routine O&M activities would occur within existing and/or to be acquired franchise areas and ROWs, these activities would not reduce the availability of locally important mineral resource recovery sites. As a result, no impact would occur.

4.11.5 Applicant-Proposed Measures

Because no impacts to mineral resources would occur as a result of the Proposed Project, no avoidance or minimization measures are proposed.

4.11.6 Mid-Line Series Capacitor Site Alternatives

Consistent with Section 15126.6(d) of the CEQA Guidelines, this Proponent's Environmental Assessment analyzes alternatives to the Proposed Project. Section 5.2, Description of Project Alternatives and Impact Analysis, identifies and compares the construction and operation of SCE's Proposed Project with its alternatives, including alternatives that did not meet key Proposed Project objectives and were not carried forward. The alternatives retained for a full evaluation—alternative sites for the Newberry Springs Series Capacitor and the Ludlow Series Capacitor—are analyzed in relation to mineral resources in the following discussion.

The alternative site for the Newberry Springs Series Capacitor is an approximately 3.1-acre site located approximately 930 feet to the northeast of its proposed location along the Eldorado-Lugo 500 kV Transmission Line. The alternative site for the Ludlow Series Capacitor is an approximately 3.1-acre site located approximately 970 feet to the southwest of its proposed location along the Lugo-Mohave 500 kV Transmission Line.

The alternative Newberry Springs Series Capacitor site would have similar physical and geographic characteristics as the proposed mid-line capacitor sites and would not be located in any MRZ areas. The mineral resources located in the vicinity of the mid-line series capacitor at

this alternative site would be the same as those specified for the proposed mid-line series capacitors and would not be located within or span any active mines or any active oil or gas wells. No mineral deposit extraction or removal is anticipated as part of the Proposed Project. As a result, similar to the proposed Newberry Springs Series Capacitor site, there would be no impact to mineral resources from construction or O&M of the alternative Newberry Springs Series Capacitor site.

The alternative Ludlow Series Capacitor site would have similar physical and geographic characteristics as the proposed mid-line capacitor sites and would not be located in any MRZ areas. The mineral resources located in the vicinity of the mid-line series capacitor at this alternative site would be the same as those specified for the proposed mid-line series capacitors and would not be located within or span any active mines or any active oil or gas wells. No mineral deposit extraction or removal is anticipated as part of the Proposed Project. As a result, similar to the proposed Ludlow Series Capacitor site, there would be no impact to mineral resources from construction or O&M of the alternative Ludlow Series Capacitor site.

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4.12 Noise

This section describes the noise in the area of the Eldorado-Lugo-Mohave Series Capacitor Project (Proposed Project[1]), as well as the potential impacts and alternatives.

Information regarding noise standards was obtained from federal, State, regional, and local literature reviews to establish the noise standards for the Proposed Project area. Information on existing noise sources is based on the Noise Technical Report prepared by Eilar Associates, Inc. (Eilar), which is provided in Appendix K: Noise Technical Report.[2] Evaluation of potential noise impacts from the Proposed Project included measuring existing noise levels in the Proposed Project area, characterizing the existing noise environment using noise modeling software, and calculating and examining the noise generation from the proposed construction and operation.

4.12.1 Environmental Setting

The Proposed Project is located in California and Nevada, within the Mojave Basin and Range (Mojave). Federal lands constitute a majority of the land area in the Mojave, including lands under the jurisdiction of the Bureau of Land Management (BLM), National Park Service (NPS), Bureau of Reclamation (BOR), and Department of Defense (DoD). The Proposed Project would modify three existing transmission lines that extend northeast from Lugo Substation (located in San Bernardino County, California) to Eldorado Substation (located in the City of Boulder City, Nevada) and Mohave Substation (located in Clark County, Nevada), and from Mohave Substation northwest to Eldorado Substation. Portions of the Proposed Project would also cross the City of Hesperia, California, the unincorporated community of Lucerne Valley in California, as well as the unincorporated communities of Searchlight and Laughlin in Nevada.

4.12.2 Noise in the Proposed Project Area

4.12.2.1 Noise Background

Noise is defined as an unpleasant or unwanted sound. Whether a sound is considered unpleasant depends on the individual who hears the sound, as well as the setting and circumstance under which the sound is heard. Because an individual's tolerance for noise varies by setting, some land uses are more sensitive to changes in the ambient noise environment. In general, noise-sensitive receptors could include, but are not limited to residences, schools, day-care centers, playgrounds, outdoor recreational areas, and medical facilities.

[1] The term "Proposed Project" is inclusive of all components of the Eldorado-Lugo-Mohave Series Capacitor Project. Where the discussion in this section focuses on a particular component, that component is called out by its individual work area (e.g., "Ludlow Series Capacitor").

[2] Appendix K: Noise Technical Report provides the existing noise sources in the Proposed Project area and project impacts associated with the Proposed Project. The minor adjustments to the Proposed Project work areas, grading quantities, equipment list, the refined design of the mid-line series capacitors, and the refined design and relocation of the fiber optic repeater sites would not require usage of noise-generating equipment in closer proximity to sensitive receptors. Therefore, the minor changes to the Proposed Project are not expected to increase noise impacts, and the noise modeling results in Appendix K: Noise Technical Report are considered to represent the maximum noise impacts associated with the Proposed Project.

The unit of sound measurement is the decibel (dB). The dB scale is a logarithmic measure used to quantify sound power or sound pressure. A number of factors affect the perception of sound, including the actual level of noise, the frequencies involved, the period of exposure to the sound, and changes or fluctuations in the sound level during exposure. The human ear is not uniformly sensitive to all noise frequencies. To measure sound in a manner that accurately reflects human perception, several measuring systems or scales have been developed, and the "A-weighting" scale was devised to correspond with the ear's sensitivity. The A-weighting scale uses specific weighting of sound pressure levels from 31.5 hertz to 8 kilohertz for the purpose of determining the human response to sound. The resulting unit of measure is the A-weighted decibel (dBA).

The subjective human perception of the loudness of a noise source is usually different than what is measured. Generally, a 3 dBA increase in ambient noise levels is considered the minimum threshold at which most people can detect a change in the noise environment; a 5 dBA increase in community noise is considered perceptible by the average human ear; and an increase of 10 dBA is perceived as a doubling of the ambient noise level. As a point of reference, a conversation between two people would typically measure 60 to 65 dBA, and prolonged noise levels above 85 dBA can cause hearing loss.

To reflect the fact that ambient noise levels from various sources vary over time, they are generally expressed as an equivalent noise level (L_{eq}), which is a computed steady noise level over a specified period of time as the noise level varies. L_{eq} values are commonly expressed for one-hour periods, but different averaging times may be specified.

For the evaluation of community noise effects, the Community Noise Equivalent Level (CNEL) is often used. It represents the average A-weighted noise level during a 24-hour day with a 5 dB penalty for the period from 7:00 p.m. to 10:00 p.m., and a 10 dB penalty for the period from 10:00 p.m. to 7:00 a.m. Another noise descriptor termed the Day-Night Average Sound Level (L_{dn}) is also used. The L_{dn} is a calculated 24-hour weighted average, where sound levels during nighttime hours from 10:00 p.m. to 7:00 a.m. have an added 10 dB weighting. The L_{dn} is similar to the CNEL, except there is no penalty for the noise level occurring during the nighttime hours.

4.12.2.2 Noise-Sensitive Land Uses in the Project Proposed Area

The Proposed Project is located in a region with a mix of low-density and rural residential land uses, as well as undeveloped and protected open spaces and recreational areas. The nearest noise-sensitive land uses in the vicinity of the Proposed Project area are described in Table 4.12-1: Sensitive Receptors within 500 Feet of the Proposed Project.

Table 4.12-1: Sensitive Receptors within 500 Feet of the Proposed Project

Sensitive Receptor Name	Receptor Type	Approximate Distance to Nearest Proposed Project Component	Nearest Project Component
Crucero Valley Extensive Recreation Management Area	Outdoor Recreational Area	Spanned	Eldorado-Lugo 500 kilovolt (kV) Transmission Line
Juniper Flats	Outdoor Recreational Area	Spanned	Eldorado-Lugo 500 kV Transmission Line and the Lugo-Mohave 500 kV Transmission Line
Johnson Valley Off-Highway Vehicle Area and Johnson Valley Public Use Area	Outdoor Recreational Area	Spanned	Eldorado-Lugo 500 kV Transmission Line and the Lugo-Mohave 500 kV Transmission Line
Open Access BLM-Administered Land	Outdoor Recreational Area	Spanned	Eldorado-Lugo 500 kV Transmission Line and the Lugo-Mohave 500 kV Transmission Line
Mojave Trails National Monument	Outdoor Recreational Area	Spanned	Eldorado-Lugo 500 kV Transmission Line and the Lugo-Mohave 500 kV Transmission Line
Mojave National Preserve	Outdoor Recreational Area	Spanned	Eldorado-Lugo 500 kV Transmission Line
National Trails Special Recreation Management Area (SRMA)	Outdoor Recreational Area	Spanned	Lugo-Mohave 500 kV Transmission Line
Stoddard/Johnson SRMA	Outdoor Recreational Area	Spanned	Eldorado-Lugo 500 kV Transmission Line and the Lugo-Mohave 500 kV Transmission Line
Mojave Wilderness	Outdoor Recreational Area	Adjacent	Lugo-Mohave 500 kV Transmission Line

Sensitive Receptor Name	Receptor Type	Approximate Distance to Nearest Proposed Project Component	Nearest Project Component
Rodman Mountains Wilderness	Outdoor Recreational Area	Spanned	Eldorado-Lugo 500 kV Transmission Line
Dead Mountains Wilderness	Outdoor Recreational Area	Adjacent	Lugo-Mohave 500 kV Transmission Line
Occupied Residential Dwelling	Residential	300 feet	Mile 7 of the Lugo-Mohave 500 kV Transmission Line
Occupied Residential Dwelling	Residential	340 feet	Stringing site near Mile 173 of the Lugo-Mohave 500 kV Transmission Line
Occupied Residential Dwelling	Residential	400 feet	Mile 25 of the Lugo-Mohave 500 kV Transmission Line
Occupied Residential Dwelling	Residential	400 feet	Helicopter Landing Zone at Tower M7-T3 on the Eldorado-Lugo 500 kV Transmission Line and M7-T4 on the Lugo-Mohave 500 kV Transmission Line
Occupied Residential Dwelling	Residential	430 feet	Helicopter Landing Zone near Tower M0-T4 of the Lugo-Mohave 500 kV Transmission Line
Occupied Residential Dwelling	Residential	480 feet	Mile 7 of the Eldorado-Lugo 500 kV Transmission Line

4.12.2.3 Existing Noise Sources

The primary existing source of noise in the Proposed Project area is vehicular traffic on highways and local streets, including the following:

- State Route (SR-) 18 crossed by the Lugo-Mohave 500 kV Transmission Line
- SR-247 crossed by the Lugo-Mohave 500 kV Transmission Line
- Interstate (I-) 40 crossed by the Lugo-Mohave 500 kV Transmission Line between Towers M68-T1 and M68-T2
- SR-163 near the Eldorado-Mohave 500 kV Transmission Line
- United States (U.S.) Route (US-) 95 near the Eldorado-Mohave 500 kV Transmission Line

The existing noise environment in the Proposed Project area also includes contributions from railroad tracks near Lugo Substation and Pisgah Substation, as well as aircraft traffic from Ludlow Airport and Hesperia Airport near the Lugo-Mohave 500 kV Transmission Line.

A noise survey was conducted between April 14 and 16, 2016 to document the existing noise environment at noise-sensitive receptors and to identify existing noise sources within the Proposed Project area. Noise measurements were taken at seven locations, and brief ambient noise measurements were performed in one additional location in the vicinity of the existing Lugo Substation, the existing Pisgah Substation, and the existing transmission lines. The results of the noise monitoring are presented in Appendix K: Noise Technical Report. Table 4.12-2: Noise Monitoring Summary summarizes the maximum and minimum L_{eq} noise levels measured at each monitoring location. The dominant noise source identified during the survey was wind noise; freight trains on the railroad to the southwest; and vehicular traffic on US-95, I-40, and adjacent roads.

Table 4.12-2: Noise Monitoring Summary

Monitoring Location	Jurisdiction	Minimum L_{eq} (1 hour) (dBA L_{eq})	Maximum L_{eq} (1 hour) (dBA L_{eq})
Lugo Substation	San Bernardino County	42.3	49.5
Arrowhead Lake Road	San Bernardino County	34.6	50.2
Deep Creek Road	San Bernardino County	32.7	50.7
Ocotillo Way	San Bernardino County	40.3	66.4
Barstow Road	San Bernardino County	44.4	62.7
Pisgah Substation	San Bernardino County	49.0	63.7
US-95	Clark County	57.8	72.6

Source: Eilar (2016)

4.12.3 Ground-Borne Vibration and Noise

Ground-borne vibration (GBV) is the periodic oscillation of a medium or object. Typical sources of perceptible GBV during construction include operation of heavy earth-moving equipment, blasting, and pile driving. If a roadway is smooth, the GBV is rarely perceptible. The rumbling sound caused by the vibration of room surfaces is called ground-borne noise (GBN). Vibration amplitude is typically expressed in terms of peak particle velocity (PPV) or root mean square (RMS) particle velocity. The PPV and RMS velocity are typically measured in micro-inch per second. PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is the metric often used to describe blasting vibration and other vibration sources that result in structural stresses in buildings.

Although PPV is appropriate for evaluating the potential for building damage, it is not always suitable for evaluating human response. Consequently, vibration is often expressed in decibel notation as vibration velocity level (VdB), which is related to the RMS velocity amplitude.

The background vibration velocity level that is typical of residential areas is approximately 50 VdB. GBV is normally perceptible to humans at approximately 65 VdB. For most people, a vibration velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels. Table 4.12-3: Human Response to Different Levels of Ground-Borne Vibration and Noise summarizes the general human response to different levels of GBV and GBN.

Table 4.12-3: Human Response to Different Levels of Ground-Borne Vibration and Noise

Human Reaction	Vibration Velocity Level (VdB)	Noise Level (dBA)
Approximate threshold of perception.	65	40
Approximate dividing line between barely perceptible and distinctly perceptible. Many people find that transportation-related vibration at this level is unacceptable.	75	50
Vibration acceptable only if there is an infrequent number of events per day.	85	60

Source: Federal Transit Administration (FTA) (2006)

4.12.3.1 Construction Noise

Construction noise generated by off-road equipment is dependent on the type of equipment, the specific model, the type of activity, and the condition of the equipment. The dominant source of noise from most construction equipment is the engine, which is usually diesel. In addition, the operation of construction equipment is categorized as stationary or mobile. Stationary equipment operates in one location for one or more days at a time, with either a fixed power operation (e.g., pumps, generators, or compressors) or a variable noise operation (e.g., pile drivers or pavement

breakers). Mobile equipment moves around the construction site with power applied in a cyclic fashion (e.g., bulldozers or loaders), or to and from the site (e.g., trucks). Variation in power imposes additional complexity in characterizing the noise source level from a piece of equipment. This is handled by describing the noise at a reference distance from the equipment operating at full power and adjusting the distance based on the duty cycle of the activity to determine the L_{eq} of the operation. Construction activities are characterized by variations in the power expended by equipment, and as a result, noise levels vary with time. Variation in the power is expressed in terms of a "usage factor" of the equipment, which is the percentage of time during the workday that the equipment is operating at full power. Time-varying noise levels are converted to a single number (L_{eq}) for each piece of equipment during the operation. Besides having daily variations in activities, major construction projects are completed in several different phases. Each phase has a specific assortment of equipment, depending on the work to be completed during that phase.

4.12.3.2 Corona Noise

When a transmission or subtransmission line is in operation, an electric field is generated in the air surrounding the conductors, forming a "corona." A corona results from the partial breakdown of the electrical insulating properties of the air that surrounds the conductors. When the intensity of the electric field at the surface of the conductor exceeds the insulating strength of the surrounding air, a corona discharge occurs at the conductor surface, representing a small dissipation of heat and energy. Some of the energy may dissipate in the form of small, local pressure changes that result in audible noise or in radio or television interference. Audible noise generated by corona discharge is characterized as a hissing or crackling sound that may be accompanied by a 120-hertz hum.

Slight irregularities or water droplets on the conductor and/or insulator surface accentuate the electric field strength near the conductor surface, thereby making corona discharge and the associated audible noise more likely. Under weather conditions such as rain and high wind, ambient noise levels would generally be higher than those generated by the operation of the transmission or subtransmission line, and would mask the corona noise levels. Therefore, audible noise from transmission or subtransmission line is generally a wet weather (wet conductor) phenomenon. However, during dry weather, insects and dust on the conductors can also serve as sources of corona discharge, making the associated audible noise more likely.

4.12.4 Regulatory Setting

Federal, State, and local regulations were reviewed for applicability to the Proposed Project.

4.12.4.1 Federal

There are no federal noise standards that specifically regulate environmental noise related to electrical transmission lines and substation facilities that are relevant to the Proposed Project. Although the U.S. Environmental Protection Agency (EPA) established general guidelines for noise levels to identify and address the effects of noise on public health and welfare and the environment in 1974, it transferred responsibilities for regulating noise control policies to the State and local government level in 1982. However, federal authorizations would be required

because a majority of the land within the Proposed Project area is under the jurisdiction of the BLM, NPS, BOR, and DoD.

4.12.4.2 State

California

California Public Utilities Commission General Order 131-D

Pursuant to California Public Utilities Commission (CPUC) General Order (G.O.) 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 the California Environmental Quality Act (CEQA), the CPUC is the Lead Agency with respect to such Proposed Project elements within the State of California. Southern California Edison Company (SCE) is required to comply with G.O. 131-D and is seeking a Permit to Construct from the CPUC for the Proposed Project.

California Noise Control Act

The California Noise Control Act states that excessive noise is a serious hazard to public health and welfare, and that exposure to certain levels of noise can result in physiological, psychological, and economic damage. It also recognizes that continuous and increasing bombardment of noise exists in urban, suburban, and rural areas. This act declares that the State of California has the responsibility to protect the health and welfare of its citizens by the control, prevention, and abatement of noise. The Office of Noise Control in the Department of Health Services provides assistance to local communities developing local noise control programs, and works with the Governor's Office of Planning and Research to provide guidance for the preparation of the required noise elements in city and county general plans, pursuant to Section 65302(f) of the California Government Code.

Nevada

Nevada Revised Statutes Section 704.865

Nevada Revised Statutes Section 704.865 provides that "A person, other than a local government, shall not commence to construct a utility facility in the State without first having obtained a permit therefor from the Commission. The replacement of an existing facility with a like facility, as determined by the Commission, does not constitute construction of a utility facility." The Public Utilities Commission of Nevada is the Lead Agency for compliance with the Nevada Utility Environmental Protection Act.

4.12.4.3 Local

The California Public Utilities Commission has sole and exclusive State jurisdiction over the siting and design of the Proposed Project components located in the State of California. Pursuant to CPUC G.O. 131-D, Section XIV.B, "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and cities' regulations are not applicable as the county and cities do not

have jurisdiction over the Proposed Project. Accordingly, the following discussion of local regulations is provided for informational purposes only. The Proposed Project is subject to local regulations in the State of Nevada.

California

County of San Bernardino

County of San Bernardino 2007 General Plan

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:

- Policy N1.5: 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 N1.6: 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.
- Policy N2.1: The County will require appropriate and feasible on-site noise attenuating measures that may include noise walls, enclosure of noise generating equipment, site planning to locate noise sources away from sensitive receptors, and other comparable features.

San Bernardino County Code of Ordinances

Title 8 of the San Bernardino County Code of Ordinances governs noise. Section 83.01.080(c) provides daytime (7:00 a.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 7:00 a.m.) noise standards for stationary noise sources affecting various land uses. Section 83.01.080(g) exempts temporary construction, maintenance, repair, or demolition activities between 7:00 a.m. and 7:00 p.m., except on Sundays and federal holidays.

Table 4.12-4: County of San Bernardino Noise Standards for Stationary Noise Sources provides a summary of noise standards for stationary noise in San Bernardino County. Table 4.12-5: County of San Bernardino Standards for Adjacent Mobile Noise Sources provides a summary of noise standards for noise from mobile sources that may adversely affect adjacent properties in San Bernardino County.

Table 4.12-4: County of San Bernardino Noise Standards for Stationary Noise Sources

Noise Zone	Time	Allowable Noise Level (dBA)
Residential	7:00 a.m. – 10:00 p.m.	55
	10:00 p.m. – 7:00 a.m.	45
Professional Services	7:00 a.m. – 10:00 p.m.	55
	10:00 p.m. – 7:00 a.m.	55
Other Commercial	7:00 a.m. – 10:00 p.m.	60
	10:00 p.m. – 7:00 a.m.	60
Industrial	7:00 a.m. – 10:00 p.m.	70
	10:00 p.m. – 7:00 a.m.	70

Source: County of San Bernardino (2016)

Table 4.12-5: County of San Bernardino Standards for Adjacent Mobile Noise Sources

Land Uses		L_{dn} (or CNEL) dBA	
Category	**Uses**	**Interior[3]**	**Exterior[4]**
Residential	Single-Family, Duplex Units	45	65
	Mobile Home	45	65
Commercial	Hotel, Motel, and Transient Lodging	45	65
	Commercial Retail, Bank, and Restaurants	50	N/A
	Office Building, Research and Development, and Offices	45	65
	Amphitheater, Hall, Auditorium, and Theater	45	65
Institutional	Hospital, School, Church, and Library	45	65
Open Space	Park	N/A	65

Source: County of San Bernardino (2016)
Notes: "N/A" = Not applicable. An exterior noise level of up to 65 dBA (or CNEL) is allowed, provided that exterior noise levels are substantially mitigated through a reasonable application of the best available noise-reduction technology, and interior noise exposure does not exceed 45 dBA (or CNEL) with windows and doors closed. Requiring that windows and doors remain closed to achieve an acceptable interior noise level would necessitate the use of air conditioning or mechanical ventilation.

[3] The indoor environment excludes bathrooms, kitchens, toilets, closets, and corridors.
[4] The outdoor environment is limited to hospital/office building patios, hotel and motel recreation areas, mobile home parks, multi-family private patios or balconies, park picnic areas, private yards of single-family dwellings, and school playgrounds.

City of Hesperia

City of Hesperia General Plan 2010

The Noise Element in the City of Hesperia General Plan 2010 contains the following specific goals and policies focused on viable approaches to control and reduce noise:

- Policy NS-1.6: Provide developers and builders with development noise policy guidelines. The guidelines shall provide specific design criteria, minimum standards for submittal of acoustical studies and descriptions of acceptable noise mitigation measures.
- Policy NS-1.10: Limit the hours of construction activity in, and around, residential areas in order to reduce the intrusion of noise in the early morning and late evening hours and on weekends and holidays.
- Policy NS-1.13: Ensure adequate noise control measures at construction sites by requiring that construction equipment be fitted with manufacturer-recommended mufflers and ensuring physical separation of machinery maintenance and staging areas from adjacent residential uses.

City of Hesperia Code of Ordinances

Title 16, Chapter 16.20 of the City of Hesperia Code of Ordinances contains the noise standards provided in Table 4.12-6: City of Hesperia Noise Standards. Temporary construction, repair, or demolition work conducted between the hours of 7:00 a.m. and 7:00 p.m., except on Sundays and federal holidays, are exempt from the standards in Table 4.12-6: City of Hesperia Noise Standards.

Table 4.12-6: City of Hesperia Noise Standards

Noise Zone	Time	Allowable Exterior Noise Level (dBA)
Residential Districts	7:00 a.m. – 10:00 p.m.	60
	10:00 p.m. – 7:00 a.m.	55
Business Districts	Anytime	65
Industrial Districts	Anytime	70

Source: City of Hesperia (2016)

Nevada

Clark County

Clark County Comprehensive Plan

The Clark County Comprehensive Plan does not contain any specific goals or policies that are relevant to the Proposed Project.

Clark County Code of Ordinances

Title 30 of the Clark County Code of Ordinances governs the allowable noise levels within Clark County, except for properties located within the Gaming Enterprise District.[5] Section 30.68.020 provides daytime (6:00 a.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 6:00 a.m.) standards for stationary noise sources affecting various land uses. Section 30.68.020(h) exempts construction and demolition activities when conducted during daytime hours. Table 4.12-7: Clark County Standard Permitted Sound Levels during Operation provides a summary of noise standards in Clark County.

Table 4.12-7: Clark County Standard Permitted Sound Levels during Operation

Noise Zone	Time	Allowable Exterior Noise Level (dBA)
Residential Districts	6:00 a.m. – 10:00 p.m.	56
	10:00 p.m. – 6:00 a.m.	46
Business and Industrial Districts	6:00 a.m. – 10:00 p.m.	65
	10:00 p.m. – 6:00 a.m.	61

Source: Clark County (2016)

City of Boulder City

Boulder City Master Plan

The Boulder City Master Plan does not have any plans or policies that are relevant to the Proposed Project.

Boulder City City Code

Title 9, Chapter 1.24 of the Boulder City City Code contains the following policy, which is relevant to the Proposed Project:

- Each permittee shall conduct and carry out excavation work in such manner as to avoid unnecessary inconvenience and annoyance to the general public and occupants of neighboring property. The permittee shall take appropriate measures to reduce to the fullest extent practicable in the performance of the excavation work, noise, dust and unsightly debris and between the hours of 7:00 p.m. and 7:00 a.m. shall not use, except with the express written permission of the administrative authority or in case of an emergency as herein otherwise provided, any tool, appliance or equipment producing noise of sufficient volume to disturb the sleep or repose of occupants of the neighboring property.

[5] The Proposed Project is outside of the Gaming Enterprise District, which is located between Sahara Avenue, St. Rose Parkway, Koval Lane, and Cameron Street in the City of Las Vegas.

4.12.5 Significance Criteria

The significance criteria for assessing the impacts from noise are determined from the CEQA Environmental Checklist.[6] According to the CEQA Checklist, a project causes a potentially significant impact if it would cause:

- Exposure of people to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies
- Exposure of people to, or generation of, excessive GBV or GBN levels
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project
- Exposure of people residing or working in the project area to excessive noise levels 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
- Exposure of people residing or working in the project area to excessive noise levels for a project within the vicinity of a private airstrip

4.12.6 Impact Analysis

4.12.6.1 Would the project result in the exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Construction

Less-Than-Significant Impact. Construction activities would require the temporary use of various types of noise-generating construction equipment, including bulldozers, graders, backhoes, drill rigs, augers, flatbed truck, boom trucks, rigging and mechanic trucks, air compressors, generators, compactors, forklift loaders, trencher, excavator, mobile cranes, concrete trucks, and man lifts. Line stringing would require the use of pullers, tensioners, and cable reel trailers, which have their own motors. Helicopters would also be employed during construction. Table 4.12-8: Construction Equipment Noise Levels provides a list of the typical construction equipment involved in Proposed Project activities.

[6] CEQA is a statute that requires State of California and local agencies in California to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible. There is no CEQA equivalent for the State of Nevada. Therefore, in the absence of such regulations, the Proposed Project (including components in Nevada) has been evaluated against the CEQA significance criteria. Where specific Nevada environmental regulations exist, a discussion has been included in the impact analysis for the Proposed Project.

Table 4.12-8: Construction Equipment Noise Levels

Equipment	L_{eq} (dBA at 50 Feet)
Pickup Truck, 4x4	55.0
Boom/Crane Truck	74.3
Truck, Semi-Tractor	76.3
Track-Type Dozer	77.3
Puller/Tensioner	74.3
Dump Truck	70.3
Rock Crusher	79.3
Helicopter	89.8[7]

Source: Eilar (2016)

As detailed in Section 4.12.4, Regulatory Setting, the local jurisdictions in the Proposed Project area restrict the hours of construction, but not the construction noise levels produced. Construction activity within San Bernardino County and the City of Hesperia is permitted between 7:00 a.m. and 7:00 p.m., except on Sundays and federal holidays. Construction in Clark County is permitted between 6:00 a.m. and 10:00 p.m., including on Sundays and federal holidays. Construction in Boulder City is permitted between 7:00 a.m. and 7:00 p.m., including on Sundays and federal holidays. Construction activities for the Proposed Project would typically occur in accordance with guidance from the local agencies and/or restrictions and standards established by the municipal codes of the cities of Hesperia and Boulder City, as well as the County of San Bernardino and Clark County.

In the event that construction activities are anticipated on days or hours outside of what is specified by the local ordinances (e.g., if existing lines must be taken out of service for the work to be performed safely at night for system reliability reasons, to comply with anticipated encroachment permit conditions, or if construction requires continuous work), SCE would provide five-day advanced notification, where feasible, to the CPUC, the local jurisdiction, and residents within 300 feet of the anticipated work. This notification would include a general description of the work to be performed, the location, and the hours of construction anticipated. SCE would also route construction traffic away from residences, schools, and recreational facilities to the maximum extent feasible. Additionally, potential noise impacts would be further reduced and controlled during equipment operation by using noise-reduction features (e.g., mufflers and engine shrouds), which are typically installed on equipment used by SCE and its contractors. SCE and its contractors would ensure that these noise-reduction features are maintained in accordance with factory specifications. By complying with local noise ordinances

[7] According to manufacturer data sheets for a Hughes 500 C helicopter, while hovering stationary at a height of 200 feet, the maximum noise level measured on the ground is 89.8 dBA.

or providing notice prior to construction activities that would occur outside of the exempted construction hours, impacts would be less than significant.

Operation

No Impact. Operation and Maintenance (O&M) activities associated with the Proposed Project would be similar to those currently performed by SCE for existing facilities, and generally include repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, repairing or replacing poles and towers, tree trimming, brush and weed control, and access road maintenance, among other things. O&M practices would also include routine inspections and emergency repair within substations and rights-of-way (ROWs), which would require the use of vehicles and equipment. SCE also inspects the transmission and subtransmission overhead facilities in a manner consistent with CPUC G.O. 165, which requires observation a minimum of once per year, but inspection typically occurs more frequently to ensure system reliability. Following construction of the mid-line series capacitors,[8] additional O&M activities would consist of monthly and annual inspections, as well as equipment testing and maintenance of emergency generators, ranging from once a year to once every five years. Additional testing, inspections, and maintenance of the building, site, generator, and fuel tank would also be required at the new fiber optic repeater facilities every six months to once a year.

As described in Appendix K: Noise Technical Report, operational noise sources from the Proposed Project's transmissions lines, mid-line series capacitor sites, and fiber optic repeater sites were analyzed. No changes are anticipated that would alter the current noise levels produced by the transmission lines. Assuming the transmission lines operate at a constant noise level of 49 dBA for a full 24-hour period during rain events, this would result in an L_{dn} of 55 dBA. Typical noise levels expected in arid environments, like those found in the Proposed Project area, are usually substantially lower because corona noise is greatest in areas of high humidity and during rain events. At an L_{dn} of 55 dBA, the noise from these facilities would not exceed the thresholds of local jurisdictions. Because operational noise of the transmission lines would not exceed local standards, there would be no impact.

Table 3 of Appendix K: Noise Technical Report provides an analysis of the potential noise generated by each mid-line series capacitor. Noise levels from each capacitor are calculated to have a maximum L_{eq} of approximately 53 dBA at the boundary of the mid-line series capacitor facility, which would be below the U.S. EPA's recommended hourly noise threshold of 55 dBA L_{dn}, indicating potential for annoyance and interference with outdoor activity as previously described. In addition, the closest residential receptor to the mid-line series capacitors is approximately 8 miles to the west of the mid-line series capacitors, and noise generated by the capacitors would not be audible. In addition, the noise would not exceed the thresholds of local jurisdictions; therefore, there would be no impact.

The Barstow, Kelbaker, and Lanfair Fiber Optic Repeater sites would each include a generator and telecommunications equipment inside of an equipment shelter. These sites would be served by two air-conditioning units mounted on the exterior of the buildings, and they would be

[8] The Proposed Project includes construction of two new 500 kV mid-line series capacitors—the proposed Newberry Springs Series Capacitor and Ludlow Series Capacitor.

configured for redundancy so that only one unit would operate at any given time. The generators would only operate in the event of an emergency power failure, or for brief testing and maintenance performed regularly during daytime hours. Noise from the generator is expected to be contained by the placement of the generators inside the proposed equipment shelters. Because generators would only be used and tested occasionally, and because there are no sensitive receptors in the area, noise associated with the generators would not exceed local standards, and there would be no impact.

Noise generated by the anticipated air-conditioning equipment is not expected to exceed the nighttime residential property line noise limits for the local jurisdictions, when measured at the nearest edges of the existing ROWs. In Appendix K: Noise Technical Report, Tables 5 through 7 provide a summary of noise levels generated at each fiber optic repeater site. Noise generated by the Barstow Fiber Optic Repeater site was calculated to have an approximate L_{eq} of 43 dBA at the edge of SCE's existing ROW. This level would not exceed County of San Bernardino's residential noise limit of 45 dBA L_{dn}. Noise generated by the Kelbaker and Lanfair Fiber Optic Repeater sites were calculated to have a maximum L_{eq} of approximately 51 dBA, which would comply with local noise ordinances. Therefore, operational noise from the Proposed Project is not expected to exceed any of the local noise regulations, and there would be no impact.

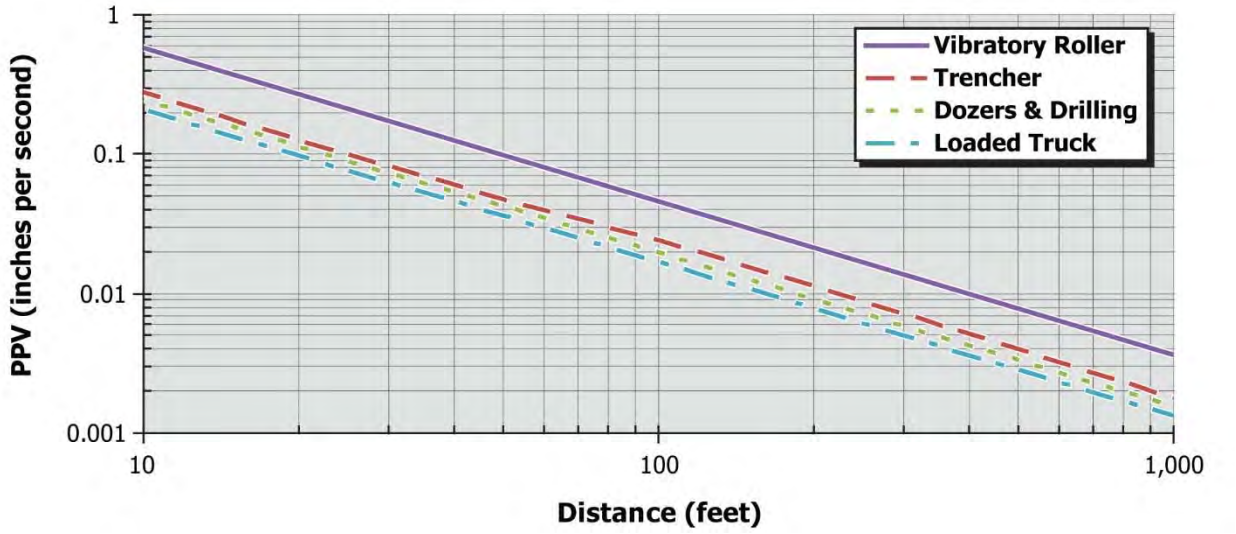
4.12.6.2 Would the project result in the exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?

Construction

Less-Than-Significant Impact. Construction activities can generate varying degrees of GBV and GBN levels, depending on the construction procedures and the construction equipment used. As described in the California Department of Transportation (Caltrans) Transportation and Construction Vibration Guidance Manual, operation of haul trucks and dozers could result in GBV due to travel and transport on cracked or faulting roadway surfaces. Vehicles traveling on smooth roadway are rarely, if ever, the source of perceptible GBV. Based on windshield observations of the existing roadways in the Proposed Project area, roadways that would be traveled during construction activities are maintained and relatively smooth; therefore, GBV is not anticipated due to the use of haul or material delivery trucks.

Operation of construction equipment generates vibrations that spread through the ground and decrease with distance from the source, as presented in Figure 4.12-1: Construction Vibration Amplitudes. Perceptibility of vibrations from construction equipment can be estimated by comparing the vibration thresholds provided in Figure 4.12-1: Construction Vibration Amplitudes.

Figure 4.12-1: Construction Vibration Amplitudes



Source: Caltrans (2013)

Worst-case GBV impacts would be expected to result from the installation or modification of transmission line towers. However, the installation or modification of transmission line towers would be brief, lasting a few days at each location, and would not occur in close enough proximity to sensitive receptors to cause annoyance or damage. Therefore, impacts would be less than significant.

Operation

Less-Than-Significant Impact. As previously described, O&M activities associated with the Proposed Project would be similar to those currently performed for the existing facilities, with additional O&M activities associated with the proposed mid-line series capacitors and fiber optic repeater facilities. These activities would generate GBV and GBN levels that are lower than construction. Therefore, operation of the Proposed Project would not result in the exposure of persons to or generation of excessive GBV or GBN levels, and impacts would be less than significant.

4.12.6.3 Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Construction

No Impact. Construction of the Proposed Project would be temporary, lasting approximately 15 months for the entire Proposed Project and less at any given location. Because the construction phase of the Proposed Project would end, no permanent ambient noise would be created and a permanent increase in ambient noise levels would not occur. Therefore, there would be no impact.

Operation

Less-Than-Significant Impact. The two new mid-line series capacitors and the three new fiber optic repeater facilities would be new sources of ambient noise as a result of regular operation.

As described previously and documented in Appendix K: Noise Technical Report, these sites would generate typical operational noise levels between 43 and 53 dBA. These anticipated noise levels would comply with all applicable noise ordinances; therefore, the ambient noise from these facilities would not represent a significant increase in ambient noise levels, and impacts would be less than significant.

4.12.6.4 Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Construction

Less-Than-Significant Impact. The CEQA Guidelines do not define a substantial increase in construction noise levels; therefore, in the absence of local guidance, a typical standard of 75 dBA is applied, which is used by other southern California jurisdictions, such as the County of San Diego and the City of San Diego. Construction noise levels would vary from hour to hour and day to day, depending on the equipment in use and the operations being performed. Grading, excavation, and construction activities, as well as general truck trips to and from the construction sites, would increase the ambient noise levels in the Proposed Project area on an intermittent basis. As described in Appendix K: Noise Technical Report, noise levels from construction were simulated using computer-aided noise abatement software. The simulated locations were selected to provide a representation of peak construction activities conducted in close proximity to noise-sensitive receptors. Figures 8 through 18 in Appendix K: Noise Technical Report display the resulting noise levels across the equipment locations and adjacent sensitive receptors, and the following paragraphs summarize the modeling results.

As described in Appendix K: Noise Technical Report, noise impacts from construction helicopter use at Towers M7-T3 and M7-T4 on the Lugo-Mohave 500 kV Transmission Line and their associated landing zones were evaluated. This site is expected to represent the nearest helicopter use to occupied residences, which are located between 475 and 950 feet from this site. Noise levels at the residences were simulated assuming that helicopter would be actively used at the landing zones for approximately 50 percent of the 12-hour workday. As a result, noise levels at the adjacent residences would range between 73 and 79 dBA, which would exceed the applied 75 dBA threshold in some locations. To reduce the noise levels at the adjacent residences, SCE would implement Applicant-Proposed Measure (APM-) NOI-01, which would restrict helicopter use to 2 hours per day at landing zones within 700 feet of occupied residences. With APM-NOI-01 implemented, noise levels at these residential receptors would range between 69 and 75 dBA.

Noise levels from construction activities at the landing zone near Tower M16-T4 were evaluated at nearby residences, assuming that the helicopter would operate for approximately 50 percent of the 12-hour workday in this location. Noise levels at the residences, which are located between 900 and 1,400 feet from the landing zone, would be between 68 and 72 dBA. These noise levels would be below the 75-dBA threshold. As a result, impacts in these locations would be less than significant. To further reduce noise levels from helicopter use at sensitive receptors in the vicinity of the Proposed Project, SCE would implement APM-NOI-02, which would ensure flight paths maintain a minimum elevation of 500 feet when not working at a tower work area or assisting with conductor stringing activities.

There are no schools within 500 feet of the helicopter flight paths. William G. Bennett Elementary School is the closest school to the Proposed Project and is located approximately 0.5 mile (2,640 feet) from anticipated helicopter use. APM-NOI-02 would also require that helicopter flight paths maintain a minimum lateral distance of 500 feet from all schools. This APM would ensure that noise from helicopters would be less than significant.

Based on the anticipated construction schedule and the assumption that the Proposed Project equipment would be maintained in proper operating condition and with appropriate mufflers, and with the implementation of APM-NOI-01 and APM-NOI-02, noise from temporary construction activities is expected to be less than significant.

As described in Appendix K: Noise Technical Report, noise levels were simulated at the pulling and tensioning site at Tower M9-T1 on the Lugo-Mohave 500 kV Transmission Line for helicopter use at Landing Zones 12, 13, and 14. Occupied residences are located between 1,050 and 2,700 feet from the landing zones associated with this tower. As documented in Appendix K: Noise Technical Report, noise levels at the surrounding residences would range from 61 to 73 dBA, which would be below the applied 75 dBA threshold. Noise contours and receiver locations are provided as Figure 18 in Appendix K: Noise Technical Report. Additionally, construction at this site would be temporary, lasting approximately one week. Based on the anticipated construction schedule and with the assumption that equipment is maintained in proper operating condition and using appropriate mufflers, noise from temporary construction is expected to be less than significant.

Operation

Less-Than-Significant Impact. As previously described, O&M activities associated with the Proposed Project would be similar to those currently performed for the existing facilities, with additional O&M activities associated with the proposed mid-line series capacitors and fiber optic repeater facilities. These sites would not be manned; therefore, regular maintenance activities would include routine inspections and preventive maintenance. This work would be conducted by existing staff and would include equipment testing, monitoring, and repair, as needed. The equipment that would be used to conduct these activities would be typically include on-road vehicles and limited heavy equipment. As a result, no substantial increase in noise would occur, and impacts would be less than significant.

4.12.6.5 For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Construction

No Impact. As described in Section 4.8, Hazards and Hazardous Materials, the nearest public airport is Hesperia Airport, which is located approximately 0.9 mile northwest of the discrepancy[9] work area between Tower M4-T2 and Tower M4-T3 on the Lugo-Mohave 500 kV

[9] SCE has defined "discrepancies" 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

Transmission Line. However, the Proposed Project is not located within any noise contours specified in the Comprehensive Land Use Plan for Hesperia Airport. Additional public airport facilities within 2 miles of the Proposed Project include Laughlin/Bullhead International Airport, Kidwell Airport, and Searchlight Airport. All planned construction in the vicinity of Laughlin/Bullhead International Airport is located outside of the 65 dBA noise impact zone, and Kidwell and Searchlight airports do not have existing airport land use compatibility plans that overlap with the Proposed Project. As a result, construction crews working on the Proposed Project would not be exposed to excessive airport noise levels.

During construction activities, construction equipment use would be the dominant noise source in the area; therefore, construction crews would not be exposed to excessive noise levels from public airport traffic. In addition, there are no residences in close proximity to these facilities. As a result, no impact would occur.

Operation

No Impact. As previously described, the Proposed Project is not located within the airport noise compatibility contours for Hesperia Airport, Laughlin/Bullhead International Airport, Kidwell Airport, and Searchlight Airport. Therefore, there would be no impact.

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

Construction and Operation

No Impact. The Proposed Project would not be located within the vicinity of an active private airstrip. The nearest private airstrips are Dick Taylor Airstrip and Rabbit Ranch Airport, which were identified within 0.2 and 0.6 mile of the Proposed Project, respectively. However, a review of available data, including aerial photography, indicates that these facilities are no longer in operation. If these airstrips became operational, use of construction equipment would be the dominant noise source in the area, and construction crews would not be exposed to excessive noise levels from private airport traffic. Therefore, no impacts would occur.

4.12.7 Applicant-Proposed Measures

SCE has designed and incorporated the following APMs into the Proposed Project to avoid or minimize potential impacts associated with noise:

- **APM-NOI-01: Duration of Helicopter Use.** Active helicopter operation at landing zones within 700 feet of occupied residences would be limited to 2 hours per day. Helicopter use may be extended if required to ensure that electrical service is maintained for customers or for safety reasons.

ground. SCE has identified approximately 16 discrepancies along the Eldorado-Lugo, Eldorado-Mohave, and Lugo-Mohave 500 kV Transmission Lines, where minor grading or relocation, replacement, or modification of transmission, subtransmission, or distribution facilities is needed to address CPUC G.O. 95 and National Electrical Safety Code overhead clearance requirements.

- **APM-NOI-02: Helicopter Use in Residential Areas.** Helicopters would be required to maintain a height of at least 500 feet when passing over residential areas, except at temporary construction areas or when actively assisting with conductor stringing. All helicopters would be required to maintain a lateral distance of at least 500 feet from all schools.

4.12.8 Mid-Line Series Capacitor Site Alternatives

Consistent with Section 15126.6(d) of the CEQA Guidelines, this Proponent's Environmental Assessment analyzes alternatives to the Proposed Project. Section 5.2, Description of Project Alternatives and Impact Analysis, identifies and compares the construction and operation of SCE's Proposed Project with its alternatives, including alternatives that did not meet key Proposed Project objectives and were not carried forward. The alternatives retained for a full evaluation—alternative sites for the Newberry Springs Series Capacitor and the Ludlow Series Capacitor—are analyzed in relation to noise in the following discussion.

The alternative site for the Newberry Springs Series Capacitor is an approximately 3.1-acre site located approximately 930 feet to the northeast of its proposed location along the Eldorado-Lugo 500 kV Transmission Line. The alternative site for the Ludlow Series Capacitor is an approximately 3.1-acre site located approximately 970 feet to the southwest of its proposed location along the Lugo-Mohave 500 kV Transmission Line.

Construction techniques at the alternative Newberry Springs Series Capacitor site would be similar as the construction techniques and equipment at the proposed mid-line series capacitor. Similar to the proposed mid-line series capacitor, the closest residential receptor to the alternative Newberry Springs Series Capacitor would be located approximately 8 miles to the west, and noise generated by the construction and O&M of the capacitor would not be audible at that location. As a result, potential impacts to sensitive receptors from construction and operational noise at the alternative site would not differ from the proposed mid-line series capacitor site. In addition, APMs discussed in Section 4.12.7, Applicant-Proposed Measures would be applied to construction of the alternative Newberry Springs Series Capacitor to avoid or minimize potential impacts associated with construction noise.

Construction techniques at the alternative Ludlow Series Capacitor site would be similar as the construction techniques and equipment at the proposed mid-line series capacitor. Similar to the proposed mid-line series capacitor, the closest residential receptors to the alternative Ludlow Series Capacitor would be located approximately 8 miles to the west, and noise generated by the construction and O&M of the capacitor would not be audible at that location. As a result, potential impacts to sensitive receptors from construction and operational noise at the alternative site would not differ from the proposed mid-line series capacitor site. In addition, APMs discussed in Section 4.12.7, Applicant-Proposed Measures would be applied to construction of the alternative Ludlow Series Capacitor to avoid or minimize potential impacts associated with construction noise.

4.12.9 References

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4.13 Population and Housing

This section describes the population and housing in the area of the Eldorado-Lugo-Mohave Series Capacitor Project (Proposed Project[1]), as well as the potential impacts and alternatives.

Data used to conduct demographic and economic analyses were obtained primarily from statistical reports published by the United States (U.S.) Census Bureau and the California Employment Development Department. A literature search was also conducted and included local jurisdiction publications and government websites, such as the Nevada State Library, Archives and Public Records website.

4.13.1 Environmental Setting

The Proposed Project is located in California and Nevada, within the Mojave Basin and Range (Mojave). Federal lands constitute a majority of the land area in the Mojave, including lands under the jurisdiction of the Bureau of Land Management (BLM), National Park Service (NPS), Bureau of Reclamation (BOR), and Department of Defense (DoD). The Proposed Project would modify three existing transmission lines that extend northeast from Lugo Substation (located in San Bernardino County, California) to Eldorado Substation (located in the City of Boulder City, Nevada) and Mohave Substation (located in Clark County, Nevada), and from Mohave Substation northwest to Eldorado Substation. Portions of the Proposed Project would also cross the City of Hesperia, California, the unincorporated community of Lucerne Valley in California, as well as the unincorporated communities of Searchlight and Laughlin in Nevada.

4.13.1.1 Population

A description of the population trends within the Proposed Project area and the types of available housing are described in the subsections that follow. Table 4.13-1: Historic Population Trends identifies population totals and trends for San Bernardino County and the City of Hesperia, as well as Clark County and the City of Boulder City. Table 4.13-2: Forecasted Population Trends summarizes the forecasted population growth for San Bernardino County and the City of Hesperia, as well as Clark County and the City of Boulder City.

[1] The term "Proposed Project" is inclusive of all components of the Eldorado-Lugo-Mohave Series Capacitor Project. Where the discussion in this section focuses on a particular component, that component is called out by its individual work area (e.g., "Ludlow Series Capacitor").

Table 4.13-1: Historic Population Trends

Jurisdiction	2010 Census Total	2014 Census Total	Approximate Growth from 2010 to 2014 (Percent)
California			
San Bernardino County	2,005,287	2,078,586	3.5
City of Hesperia	86,405	91,757	5.8
Nevada			
Clark County	1,895,521	2,003,613	5.4
City of Boulder City	15,399	15,162	-1.6

Source: U.S. Census Bureau (2015)

Table 4.13-2: Forecasted Population Trends

Jurisdiction	2020	2035	Approximate Projected Growth from 2020 to 2035 (Percent)
California			
San Bernardino County	4,535,800	5,499,900	17.5
City of Hesperia	98,200	132,500	25.9
Nevada			
Clark County	2,142,324	2,365,232	9.4
City of Boulder City	16,248	16,426	1.1

Source: Southern California Association of Governments (SCAG) (2015), Nevada State Demographer's Office (2013); Regional Transportation Commission of Southern Nevada (2016)

California

San Bernardino County

Covering approximately 20,056 square miles, San Bernardino County is geographically the largest county in the contiguous U.S. San Bernardino County is bordered to the north by Inyo County, to the west by Kern and Los Angeles counties, to the south by Orange and Riverside counties, and to the east by the Nevada state line. According to the 2014 census, San Bernardino County had a population of 2,078,586—an approximately 3.5-percent increase from the 2010 census. According to the SCAG Regional Transportation Plan (RTP), San Bernardino County is anticipated to grow by approximately 17.5 percent between 2020 and 2035.

City of Hesperia

With a population of 91,757 in 2014, the City of Hesperia experienced growth of approximately 5.8 percent since 2010. According to the SCAG RTP, the City of Hesperia is anticipated to grow by approximately 25.9 percent between 2020 and 2035.

Nevada

Clark County

Covering approximately 8,091 square miles, Clark County is the 13th largest county in the country. Clark County is bordered to the north by Lincoln County, to the west by Nye County, to the east by the Utah and Arizona state lines, and to the south by the California state line. In 2014, Clark County had a population of 2,003,613—an approximately 5.4-percent increase from the 2010 census. According to the Nevada State Demographer's Office, Clark County is anticipated to grow by approximately 9.4 percent between 2020 and 2035.

City of Boulder City

In 2014, the City of Boulder City had a population of 15,162. This marked a small population decline of 1.6 percent since 2010. According to the Regional Transportation Commission of Southern Nevada, Boulder City is anticipated to grow by 1.1 percent between 2020 and 2035.

4.13.1.2 Housing

A description of the housing stock within the Proposed Project area is provided in the subsections that follow. Table 4.13-3: Housing Units and Vacancy Rates identifies the number of housing units and associated vacancy rates for San Bernardino County and the City of Hesperia, as well as Clark County and the City of Boulder City.

Table 4.13-3: Housing Units and Vacancy Rates

Jurisdiction	Total Housing Units	Approximate Vacancy Rate (Percent)
California		
San Bernardino County	607,604	15.8
City of Hesperia	26,203	10.3
Nevada		
Clark County	715,415	18.9
City of Boulder City	6,360	15.3

Source: U.S. Census Bureau (2015)

California

San Bernardino County

San Bernardino County contains diverse housing options; however, single-family homes are the most common. In 2014, approximately 74.4 percent of the housing units in the county were single-family homes, approximately 19.8 percent were multi-family units, and approximately 5.8 percent were mobile homes and other types of units. The 2014 vacancy rate for housing units in San Bernardino County was approximately 15.8 percent.

City of Hesperia

The City of Hesperia is composed of predominately single-family homes. In 2014, approximately 82.9 percent of the housing units in the City of Hesperia were single-family homes, approximately 13.1 percent were multi-family units, and approximately 4.0 percent were mobile homes and other types of units. The 2014 vacancy rate for housing units in the City of Hesperia was approximately 10.3 percent.

Nevada

Clark County

Clark County contains diverse housing options; however, single-family homes are the most common. In 2014, approximately 66.7 percent of the housing units in the county were single-family homes, approximately 30.1 percent were multi-family homes, and approximately 3.2 percent were mobile homes and other types of units. The 2014 vacancy rate for housing units in Clark County was approximately 18.9 percent.

City of Boulder City

In 2014, approximately 64.9 percent of housing in the City of Boulder City consisted of single-family homes, approximately 15.4 percent were multi-family homes, and 19.7 percent were mobile homes and other types of units. The 2014 vacancy rate for housing units in the City of Boulder City was approximately 15.3 percent.

4.13.1.3 Temporary Housing

Temporary housing facilities in the vicinity of the Proposed Project are described in the following subsections.

California

According to the San Bernardino County Government Center, there are a variety of temporary housing options available, including hotels and resorts, lodges, campgrounds, and rental units within San Bernardino County. The majority of temporary housing options in the vicinity of the Proposed Project are concentrated in the Cities of Barstow, Hesperia, and Victorville. According to the City of Barstow Chamber of Commerce and the Hesperia Chamber of Commerce, there are various temporary housing options available, including hotels, motels, and lodges in this part of San Bernardino County.

Nevada

As of 2015, the Clark County Business Resource Center reported that more than 150,000 hotel and motel rooms were available to visitors within Clark County. The majority of these accommodations are found approximately 15 miles north within the vicinity of the City of Las Vegas. However, the Proposed Project area is remote, and there are no temporary housing facilities within 1 mile of the Proposed Project. The majority of temporary housing options in the vicinity of the Proposed Project are concentrated in the Cities of Henderson, Las Vegas, and Boulder City, as well as the unincorporated community of Searchlight. According to the City of Henderson Department of Economic Development and Tourism, the City of Henderson offers over 4,000 hotel rooms to accommodate its visitors. According to the Las Vegas Convention and Visitors Authority (LVCVA), the City of Las Vegas offers 149,213 rooms to accommodate its visitors.

4.13.1.4 Employment and Income

Table 4.13-4: Employment Figures and Unemployment Rate identifies the total number of employed residents and the unemployment rate for the Proposed Project area.

Table 4.13-4: Employment Figures and Unemployment Rate

Jurisdiction	Total Employed	Approximate Unemployment Rate (Percent)
California		
San Bernardino County	1,565,925	13.9
City of Hesperia	67,041	17.5
Nevada		
Clark County	1,570,602	12.1
City of Boulder City	12,830	12.3

Source: U.S. Census Bureau (2015).

Median annual household income data for 2015 from the U.S. Census Bureau is summarized in Table 4.13-5: Median Annual Household Income Data for the jurisdictions in the Proposed Project area.

Table 4.13-5: Median Annual Household Income Data

Jurisdiction	Median Annual Household Income
California	
San Bernardino County	$54,100
City of Hesperia	$44,472
Nevada	
Clark County	$52,070
City of Boulder City	$55,583

Source: U.S. Census Bureau (2015).

4.13.2 Regulatory Setting

Federal, State, and local regulations were reviewed for applicability to the Proposed Project. The following subsections describe federal, State, and local regulations regarding population and housing that are relevant to the Proposed Project.

4.13.2.1 Federal

There are no federal regulations related to population and housing that are relevant to the Proposed Project. However, federal authorizations would be required because a majority of the land within the Proposed Project area is under the jurisdiction of the BLM, NPS, BOR, and DoD.

4.13.2.2 State

California

California Public Utilities Commission General Order 131-D

Pursuant to California Public Utilities Commission (CPUC) General Order (G.O.) 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 the California Environmental Quality Act (CEQA), the CPUC is the Lead Agency with respect to such Proposed Project elements within the State of California. SCE is required to comply with G.O. 131-D and is seeking a Permit to Construct from the CPUC for the Proposed Project.

Nevada

Nevada Revised Statutes Section 704.865

Nevada Revised Statutes Section 704.865 provides that "A person, other than a local government, shall not commence to construct a utility facility in the State without first having

obtained a permit therefor from the Commission. The replacement of an existing facility with a like facility, as determined by the Commission, does not constitute construction of a utility facility." The Public Utilities Commission of Nevada is the Lead Agency for compliance with the Nevada Utility Environmental Protection Act.

4.13.2.3 Local

The CPUC has sole and exclusive jurisdiction over the siting and design of the Proposed Project components located in the State of California. Pursuant to CPUC G.O. 131-D, Section XIV.B, "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and cities' regulations are not applicable as the county and cities do not have jurisdiction over the Proposed Project. Accordingly, the following discussion of local regulations is provided for informational purposes only. The Proposed Project is subject to local regulations in the State of Nevada.

California

County of San Bernardino

County of San Bernardino 2007 General Plan

The Housing Element of the County of San Bernardino 2007 General Plan sets forth planning strategies to support the production of housing consistent with the vision specified for the county. In addition, the Housing Element establishes goals, policies, and programs related to housing needs. The Housing Element does not contain any specific goals or policies that are relevant to the Proposed Project.

City of Hesperia

City of Hesperia General Plan 2010

The Housing Element of the City of Hesperia General Plan 2010 sets forth goals and policies addressing existing and future housing needs for residents of the City of Hesperia. The Housing Element does not contain any specific goals or policies that are relevant to the Proposed Project.

Nevada

Clark County

Clark County Comprehensive Plan

The Housing Element of the Clark County Comprehensive Plan establishes policies to meet the diverse housing needs within Clark County. The Housing Element does not contain any specific goals or policies that are relevant to the Proposed Project.

South County Land Use Plan

The South County Land Use Plan does not contain any specific goals or policies that are relevant to the Proposed Project.

Laughlin Land Use Plan

The Laughlin Land Use Plan does not contain any specific goals or policies that are relevant to the Proposed Project.

City of Boulder City

Boulder City Master Plan

The Housing and Neighborhoods Element of the Boulder City Master Plan establishes policies that represent the community's values and vision regarding the neighborhood and housing choices. The Housing and Neighborhoods Element does not contain any specific goals or policies that are relevant to the Proposed Project.

4.13.3 Significance Criteria

The significance criteria for assessing the impacts to population and housing are derived from the CEQA Environmental Checklist.[2] According to the CEQA Checklist, a project causes a potentially significant impact if it would:

- Induce substantial population growth in the area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through the extension of new roads or other infrastructure)
- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere

4.13.4 Impact Analysis

4.13.4.1 Would the project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Construction

No Impact. During the peak construction periods, Southern California Edison Company (SCE) anticipates as many as 15 to 346 (or an average of 159) construction personnel would be working on the Proposed Project at any given time, and some of these crew members would likely

[2] CEQA is a statute that requires State of California and local agencies in California to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible. There is no CEQA equivalent for the State of Nevada. Therefore, in the absence of such regulations, the Proposed Project (including components in Nevada) has been evaluated against the CEQA significance criteria. Where specific Nevada environmental regulations exist, a discussion has been included in the impact analysis for the Proposed Project.

commute from the surrounding areas, including San Bernardino and Clark counties. Because construction would be temporary and last approximately 15 months, and because the workforce would be relatively small and would likely commute from the surrounding areas, construction of the Proposed Project would not result in a permanent increase in the area's population. If the need for temporary accommodations arose, adequate lodging options would be available in the surrounding area, including hotels and resorts, lodges, and campgrounds within San Bernardino and Clark counties. Therefore, no permanent or long-term population growth in the area would occur due to construction of the Proposed Project, and there would be no impact.

Construction of the Proposed Project is not expected to increase the desirability or affordability of the area, or facilitate population growth in the area. While the populations of San Bernardino County, the City of Hesperia, Clark County, and the City of Boulder City may increase slightly during the construction phase, the increase would be temporary and would not cause a permanent increase in population. The Proposed Project would not directly induce any permanent population growth because it does not involve the construction of any new homes or businesses, and it would not indirectly induce population growth by extending infrastructure into previously unserved areas. Therefore, no permanent population growth resulting from construction of the Proposed Project would occur, and there would be no impact.

Operation

No Impact. Operation and Maintenance (O&M) activities associated with the Proposed Project would be similar to those currently performed by SCE for existing facilities, and generally include repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, repairing or replacing poles and towers, tree trimming, brush and weed control, and access road maintenance, among other things. O&M practices would also include routine inspections and emergency repair within substations and rights-of-way (ROWs), which would require the use of vehicles and equipment. SCE also inspects the transmission and subtransmission overhead facilities in a manner consistent with CPUC G.O. 165, which requires observation a minimum of once per year, but inspection typically occurs more frequently to ensure system reliability. Following construction of the mid-line series capacitors[3], additional O&M activities would consist of monthly and annual inspections, as well as equipment testing, and maintenance of emergency generators, ranging from once a year to once every five years. Additional testing, inspections, and maintenance of the building, site, generator, and fuel tank would also be required at the new fiber optic repeater facilities every six months to once a year. SCE anticipates that all routine O&M needs can be met by existing staff and/or contract personnel, and that no new personnel would be brought to the area in association with the Proposed Project. As previously discussed, the Proposed Project would be built to meet the electrical needs of the Los Angeles Basin and to ensure reliability of the system; therefore, the Proposed Project would not induce population growth in the area either directly or indirectly. As a result, the Proposed Project is not expected to cause a direct or indirect increase in population growth. As such, no impact to population growth would occur as a result of O&M of the Proposed Project.

[3] The Proposed Project includes construction of two new 500 kV mid-line series capacitors—the proposed Newberry Springs Series Capacitor and Ludlow Series Capacitor.

4.13.4.2 Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

Construction

No Impact. Construction would occur primarily within existing or to-be-acquired franchise areas and SCE ROWs, and within existing access roads or new permanent access roads for the mid-line series capacitors. The nearest residential communities are located approximately 0.7 mile north of the Lugo-Mohave 500 kV Transmission Line in San Bernardino County and adjacent to the Lugo-Mohave 500 kV Transmission Line in Clark County. Construction would temporarily increase the number of people in the vicinity of the Proposed Project; however, construction of the Proposed Project would not require displacement of any existing housing units. As a result, no houses would be displaced and none would be built elsewhere; therefore, no impact would occur as a result of construction of the Proposed Project.

Operation

No Impact. As previously described, O&M activities associated with the Proposed Project would be similar to those currently performed for the existing facilities, with additional O&M activities associated with the proposed mid-line series capacitors and fiber optic repeater facilities. O&M activities would include regular inspection, repair work, and vegetation management, as needed. These activities currently occur for the existing SCE facilities and would generally remain the same as a result of the Proposed Project. As previously discussed, the nearest residential communities are located approximately 0.7 mile north of the Lugo-Mohave 500 kV Transmission Line in San Bernardino County and adjacent to the Lugo-Mohave 500 kV Transmission Line in Clark County. No houses would be displaced and none would be built elsewhere; therefore, there would be no impact from O&M of the Proposed Project.

4.13.4.3 Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

Construction

No Impact. As previously discussed, construction would occur primarily within existing or to-be-acquired franchise areas and SCE ROWs, and within new and existing access roads or new permanent access roads for the mid-line series capacitors. As a result, construction of the Proposed Project would not displace people or require the construction of replacement housing elsewhere. Therefore, no impact would result from construction of the Proposed Project.

Operation

No Impact. As previously described, O&M activities associated with the Proposed Project would be similar to those currently performed for the existing facilities, with additional O&M activities associated with the proposed mid-line series capacitors and fiber optic repeater facilities. These activities would not displace any people, nor would they necessitate the construction of replacement housing. Therefore, there would be no impact from O&M of the Proposed Project.

4.13.5 Applicant-Proposed Measures

Because no impacts to population and housing would occur as a result of the Proposed Project, no avoidance or minimization measures are proposed.

4.13.6 Mid-Line Series Capacitor Site Alternatives

Consistent with Section 15126.6(d) of the CEQA Guidelines, this Proponent's Environmental Assessment analyzes alternatives to the Proposed Project. Section 5.2, Description of Project Alternatives and Impact Analysis, identifies and compares the construction and operation of SCE's Proposed Project with its alternatives, including alternatives that did not meet key Proposed Project objectives and were not carried forward. The alternatives retained for a full evaluation—alternative sites for the Newberry Springs Series Capacitor and the Ludlow Series Capacitor—are analyzed in relation to population and housing in the following discussion.

The alternative site for the Newberry Springs Series Capacitor is an approximately 3.1-acre site located approximately 930 feet to the northeast of its proposed location along the Eldorado-Lugo 500 kV Transmission Line. The alternative site for the Ludlow Series Capacitor is an approximately 3.1-acre site located approximately 970 feet to the southwest of its proposed location along the Lugo-Mohave 500 kV Transmission Line.

The alternative site for the proposed Newberry Springs Series Capacitor would be constructed mainly within the existing ROW. As a result, any potential impacts from construction and O&M of the mid-line series capacitor at the alternative Newberry Springs Series Capacitor site would be similar to that of the proposed Newberry Springs Series Capacitor site and would not displace housing or residents. Because construction of the Proposed Project would be temporary, and because workers would likely commute from the surrounding area, construction of the alternative Newberry Springs Series Capacitor would not result in a permanent increase in the area's population. As discussed previously, SCE anticipates that all routine O&M needs can be met by existing staff, and that no new personnel would be brought to the area in association with the Proposed Project. As a result, any potential impacts from construction and O&M of the mid-line series capacitor at the alternative Newberry Springs Series Capacitor site would be similar to that of the proposed Newberry Springs Series Capacitor site and would not induce population growth.

The alternative Ludlow Series Capacitor site would be constructed mainly within the existing ROW. As a result, any potential impacts from construction and O&M of the mid-line series capacitor at the alternative Ludlow Series Capacitor site would be similar to that of the proposed Ludlow Series Capacitor and would not displace housing or residents. Because construction of the Proposed Project would be temporary, and because the workforce would be relatively small and would likely commute from the surrounding area, construction of the alternative Ludlow Series Capacitor would not result in a permanent increase in the area's population. As previously discussed, SCE anticipates that all routine O&M needs can be met by existing staff, and that no new personnel would be brought to the area in association with the Proposed Project. As a result, any potential impacts from construction and O&M of the mid-line capacitor at the alternative Ludlow Series Capacitor site would be similar to that of the proposed Ludlow Series Capacitor and would not induce population growth.

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4.14 Public Services

This section describes public services in the area of the Eldorado-Lugo-Mohave Series Capacitor Project (Proposed Project[1]), as well as the potential impacts and alternatives.

Public services were identified through review of general and comprehensive plans, county and city websites, school district websites, and aerial imagery. Information in this section is organized by the public service type and the providers of those services in each jurisdiction within the Proposed Project area.

4.14.1 Environmental Setting

The Proposed Project is located in California and Nevada, within the Mojave Basin and Range (Mojave). Federal lands constitute a majority of the land area in the Mojave, including lands under the jurisdiction of the Bureau of Land Management (BLM), National Park Service (NPS), Bureau of Reclamation (BOR), and Department of Defense (DoD). The Proposed Project would modify three existing transmission lines that extend northeast from Lugo Substation (located in San Bernardino County, California) to Eldorado Substation (located in the City of Boulder City, Nevada) and Mohave Substation (located in Clark County, Nevada), and from Mohave Substation northwest to Eldorado Substation. Portions of the Proposed Project would also cross the City of Hesperia, California, the unincorporated community of Lucerne Valley in California, as well as the unincorporated communities of Searchlight and Laughlin in Nevada.

4.14.1.1 Fire Protection

In the vicinity of the Proposed Project, emergency responses are coordinated within the State of California by the California Department of Forestry and Fire Protection (CAL FIRE), the BLM, the County of San Bernardino, and the City of Hesperia. Within the State of Nevada, emergency responses are coordinated by Clark County and the City of Boulder City, in addition to the Nevada Division of Forestry and the BLM. No fire stations are located within 1 mile of the Proposed Project. A summary of all fire stations within the vicinity of the Proposed Project is provided in the subsections that follow. Fire station locations are depicted in Figure 4.14-1: Public Services Within the Vicinity of the Proposed Project.

Federal

The California Desert District of the BLM provides fire protection to the area covered in the California Desert Conservation Area[2] and is comprised of two zones—the north zone and the south zone. The Proposed Project is located within the north zone. Additionally, dispatching services are consolidated and provided by the Federal Interagency Communications Center (FICC), established for the California Desert District, Death Valley National Park, Santa Rosa and San Jacinto Mountains National Monument, Mojave National Preserve, San Bernardino National Forest, and Southern California Agency Bureau of Indian Affairs. The FICC is located

[1] The term "Proposed Project" is inclusive of all components of the Eldorado-Lugo-Mohave Series Capacitor Project. Where the discussion in this section focuses on a particular component, that component is called out by its individual work area (e.g., "Ludlow Series Capacitor").

[2] The California Desert Conservation Area is discussed further in Section 4.10, Land Use and Planning.

at 602 South Tippecanoe Avenue in the City of San Bernardino, approximately 18.5 miles south of the Lugo-Mohave 500 kilovolt (kV) Transmission Line. The area served by the FICC covers approximately 30 million acres in five separate counties, reaching California's borders to Arizona, Nevada, and Mexico.

Hole in the Wall Interagency Fire Center, an interagency station staffed by firefighters from the BLM and NPS, is located approximately 8.6 miles north of the existing Lugo-Mohave 500 kV Transmission Line in the Mojave National Preserve. The goal of the Hole in the Wall Interagency Fire Center is fire suppression within the Needles Resource Area and Mojave National Preserve. The center also assists San Bernardino County with providing medical services in the Mojave Desert.

The BLM's Southern Nevada District Office provides fire protection for federally managed public land and maintains three fire stations. The stations are equipped with three Type 3 fire engines, two Type 6 fire engines, one interagency Type 6 fire engine, one interagency helicopter, one Type 2 initial attack hand crew, and one support water tender. The BLM, NPS, United States (U.S.) Fish and Wildlife Service, and U.S. Forest Service (USFS) fire suppression resources are dispatched from the Las Vegas Interagency Communication Center. The BLM's Southern Nevada District Office also coordinates with the DoD, Department of Energy, Bureau of Indian Affairs, Bureau of Reclamation, Nevada Division of Forestry, Nye County, and Clark County on wildland fire suppression. Due to the remote location of the Proposed Project, no BLM stations are located within 1 mile of the Proposed Project. The closest BLM station to the Proposed Project is the Red Rock Canyon Fire Station, which is located off State Route 159 near Red Rock Campground, and approximately 31.4 miles northwest of Eldorado Substation. The primary response area for the Red Rock Canyon Fire Station is Red Rock Canyon National Conservation Area, Sloan Canyon National Conservation Area, the east side of Spring Mountains National Recreation Area, and Sandy Valley.

State

California

CAL FIRE maintains fire stations in San Bernardino County. However, due to the remote location of the Proposed Project, no CAL FIRE stations are located within 1 mile of the Proposed Project. The closest CAL FIRE station to the Proposed Project is the Lucerne Valley Station in the San Bernardino Unit, which is located at 33679 Highway 247 in the community of Lucerne Valley, California. The Lucerne Valley Station is approximately 4.8 miles southeast of the existing Lugo-Mohave 500 kV Transmission Line.

Nevada

The Nevada Division of Forestry provides wildlife protection statewide in Nevada through the Wildland Fire Protection Program. Due to the remote location of the Proposed Project, no Nevada Division of Forestry stations are located within 1 mile of the Proposed Project. The closest Nevada Division of Forestry station to the Proposed Project is the Las Vegas Office, which is located at 4747 Vegas Drive in the City of Las Vegas and approximately 28.8 miles northwest of Eldorado Substation.

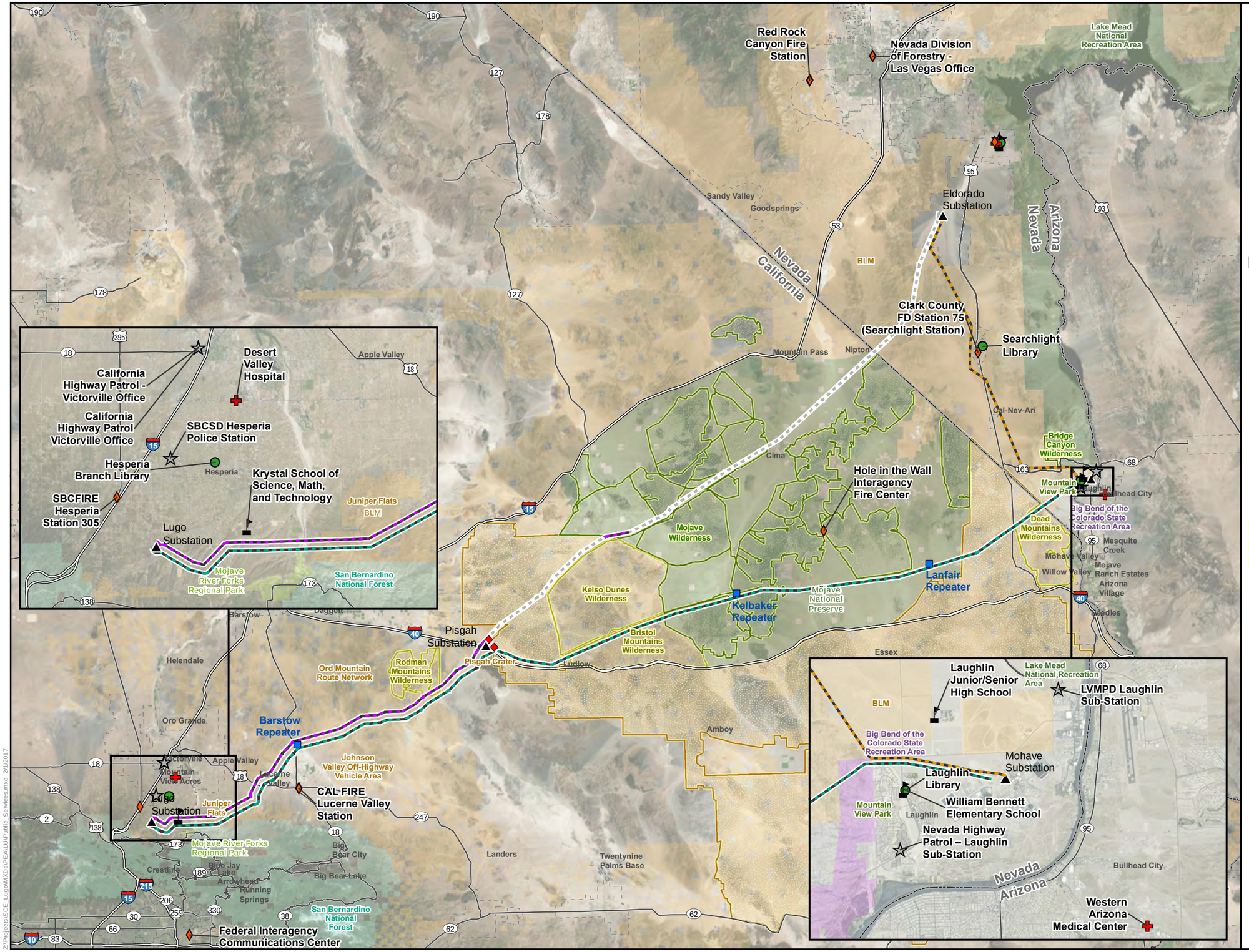

Figure 4.14-1: Public Services Within the Vicinity of the Proposed Project

Eldorado-Lugo-Mohave Series Capacitor Project

- Existing Substation
- Proposed Mid-Line Capacitor Location
- Proposed Fiber Optic Repeater Location
- Eldorado - Lugo 500 kV Transmission Line
- Eldorado - Mohave 500 kV Transmission Line
- Lugo - Mohave 500 kV Transmission Line
- Transmission Line not part of Proposed Project
- City Boundary
- State Boundary
- Interstate
- State Highway/US Highway

Public Services

- Fire Protection
- Hospital
- Library
- Police Protection
- School

Park/Land Administration

- County Park
- BLM
- NPS
- Other State Park
- USFS
- NPS Administered Wilderness Area
- BLM Administered Wilderness Area
- BLM Administered Monument

1:1,000,000

0 15 30 Miles

Source:CPAD, 2015; Clark County GIS Management Office 2016; Insignia, 2016; SCE, 2017

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Local

California

San Bernardino County

Fire protection services are collaboratively provided through various agencies in San Bernardino County. The San Bernardino County Fire Department (SBCFIRE) provides fire protection and life safety services to San Bernardino County. SBCFIRE's jurisdiction encompasses approximately 16,535 square miles, providing services to more than 2 million residents in 60 communities/cities and all unincorporated areas of the county. SBCFIRE maintains 56 active fire stations and employs approximately 977 fire and 639 fire suppression personnel. There are five divisions of SBCFIRE—the Mountain, North Desert, High Desert, South Desert, and Valley Divisions. However, due to the remote location of the Proposed Project, no SBCFIRE stations are located within 1 mile of the Proposed Project. The closest SBCFIRE station to the Proposed Project is Hesperia Station 305, located at 8331 Caliente Road in Hesperia, approximately 2.9 miles northwest of Lugo Substation. Hesperia Station 305 is funded by both the County of San Bernardino and the City of Hesperia, and is managed by the City of Hesperia Fire Department (HFD). Hesperia Station 305 is staffed by four personnel and one Battalion Chief daily, and its equipment includes one paramedic fire engine, one paramedic ambulance, one water tender, one brush patrol vehicle, and two reserve engines. SBCFIRE's response time to the Proposed Project area would vary depending on the nature and location of the call.

City of Hesperia

HFD provides fire safety and emergency medical services for a population of approximately 92,975 residents within the city limits. HFD maintains four stations, which are located at strategic points throughout the city. Due to the remote location of the Proposed Project, no HFD stations are located within 1 mile of the Proposed Project. The closest HFD station to the Proposed Project is Hesperia Station 305, which was described previously. The HFD's response time to the Proposed Project area would vary depending on the nature and location of the call.

Nevada

Clark County

The Clark County Fire Department (Clark County FD) provides emergency response services, including emergency medical services, fire and rescue, and special operations (e.g., aircraft rescue and fire investigation). The fire department serves approximately 914,563 Clark County residents over approximately 7,420 square miles. The Clark County FD is comprised of approximately 706 full-time personnel at 29 fire stations, as well as approximately 180 volunteers who serve at 13 volunteer fire stations in the rural parts of the county. Due to the remote location of the Proposed Project, no Clark County FD stations are located within 1 mile of the Proposed Project. The closest Clark County FD station to the Proposed Project is Station 75 (Searchlight Station), which is located at 255 South Nevada Street and approximately 1.4 miles east of the existing Eldorado-Mohave 500 kV Transmission Line. Clark County FD's response times to the Proposed Project area would vary depending on the nature of the emergency and exact location of the incident. Each station is equipped with an engine, water tender, squad vehicle, and rescue vehicle.

City of Boulder City

Fire protection and emergency response in the City of Boulder City is provided by the Boulder City Fire Department (BCFD). The BCFD operates out of one station and houses 18 response personnel (i.e., Battalion 12) on three 6-person shifts. Station 1 is located at 1101 Elm Street in Boulder City, approximately 14.8 miles from Eldorado Substation. The BCFD's response time to the Proposed Project area would vary depending on the nature and location of the emergency.

4.14.1.2 Police Protection

Police and law enforcement services in the vicinity of the Proposed Project are provided by the California Highway Patrol (CHP) and the San Bernardino County Sheriff's Department (SBCSD) in the State of California; and by the Nevada Highway Patrol (NHP), the Las Vegas Metropolitan Police Department (LVMPD), and the Boulder City Police Department in the State of Nevada. The BLM and NPS also provide law enforcement services within their jurisdictions. Due to the remote location of the Proposed Project, there are no police stations within 1 mile of the Proposed Project. Police stations within the vicinity are depicted in Figure 4.14-1: Public Services Within the Vicinity of the Proposed Project.

Federal

Within the Mojave National Preserve, the NPS provides law enforcement services, including front-country and backcountry patrols, criminal investigations, case management, and wildlife enforcement.

The BLM has resource protection and law enforcement responsibilities for BLM-managed lands and resources. Approximately 200 law enforcement rangers and 70 special agents enforce laws affecting public land resources on a national level.

State

California

The CHP provides uniform traffic law enforcement throughout the State of California. The CHP is divided into eight divisions, and the Proposed Project is located within the Inland Division. The Inland Division contains three communications and dispatch centers and 11 offices. The closest CHP office to the Proposed Project is the Victorville Office, located at 14210 Amargosa Road in the City of Victorville, approximately 10 miles north of the existing Lugo-Mohave 500 kV Transmission Line.

Nevada

The NHP provides law enforcement traffic services to the motoring public on Nevada highways. The NHP has northern and southern command sub-stations. The closest NHP office to the Proposed Project is the Laughlin Sub-Station, located at 3650 South Pointe Circle, Suite 104B in the community of Laughlin, approximately 1.6 miles south of the existing Lugo-Mohave 500 kV Transmission Line and Mohave Substation.

Local

California

San Bernardino County

The SBCSD provides law enforcement to 14 cities and towns and nine unincorporated areas of San Bernardino County. The SBCSD headquarters are located at 655 East Third Street in San Bernardino, and there are 22 patrol stations throughout the county. Due to the remote location of the Proposed Project, no patrol stations are located within 1 mile of the Proposed Project. The closest SBCSD patrol station is the Hesperia Police Station, which is discussed in the following subsection.

City of Hesperia

The City of Hesperia contracts its police services with the SBCSD to maintain the Hesperia Police Department. The Hesperia Police Department is comprised of approximately 57 sworn law enforcement, and 19 non-sworn personnel. The Hesperia Police Station is located at 15849 Smoketree Street, which is approximately 4.3 miles north of Lugo Substation.

Nevada

Clark County

Clark County receives law enforcement services from eight departments within the vicinity of Clark County. LVMPD serves the City of Las Vegas and unincorporated areas of Clark County. Each city in Clark County maintains its own local law enforcement agency. In 2015, LVMPD employed approximately 2,606 police officers and 1,192 civilians. LVMPD operates over 30 facilities, including sub-stations, a police academy, a traffic bureau, and a communications center. However, due to the remote location of the Proposed Project, no police stations are located within 1 mile of the Proposed Project. The closest police station to the Proposed Project is the Laughlin Sub-Station, located at 101 Civic Way # 3 in Laughlin, approximately 1.9 miles northeast of Mohave Substation.

City of Boulder City

The Boulder City Police Department provides police protection throughout an approximately 210-square-mile patrol territory. The department consists of full-time patrol officers and specialized patrols broken into four shifts, with each patrol commanded by a patrol sergeant. The Boulder City Police Department headquarters is located at 1005 Arizona Street in Boulder City, approximately 15.6 miles northeast of the Eldorado Substation.

4.14.1.3 Schools

School districts in the vicinity of the Proposed Project are described in the following subsections. Schools located within 1 mile of the Proposed Project are summarized in Table 4.14-1: Schools Within 1 Mile of the Proposed Project and depicted in Figure 4.14-1: Public Services Within the Vicinity of the Proposed Project.

Table 4.14-1: Schools Within 1 Mile of the Proposed Project

School Name	Grades	Address	Approximate Distance from Proposed Project (Miles)	Nearest Proposed Project Component
California				
Krystal School of Science, Math & Technology	Kindergarten to sixth grade	17160 Krystal Drive, Hesperia	1.0	Eldorado-Lugo 500 kV Transmission Line
Nevada				
William G. Bennett Elementary School	Kindergarten to fifth grade	2750 South Needles Highway, Laughlin	0.5	Lugo-Mohave 500 kV Transmission Line
Laughlin Junior/Senior High School	Sixth to 12th grade	1900 Cougar Drive, Laughlin	0.8	Eldorado-Mohave 500 kV Transmission Line

Sources: Clark County School District (CCSD) (2015b), Krystal School of Science, Math & Technology (2016), Google (2015)

California

San Bernardino County

Within San Bernardino County, the Proposed Project crosses the following schools districts:

- Silver Valley Unified School District
- Needles Unified School District
- Baker Valley Unified School District
- Apple Valley Unified School District
- Montebello Unified School District
- Lucerne Valley Unified School District
- Hesperia Unified School District

Due to the remote location of the Proposed Project, only one school within these districts is located within 1 mile of the Proposed Project. The Krystal School of Science, Math and Technology—part of the Hesperia Unified School District—is located approximately 1 mile north of the existing Lugo-Mohave 500 kV Transmission Line.

City of Hesperia

Within the City of Hesperia, the Proposed Project crosses the Hesperia Unified School District. As previously discussed, the Krystal School of Science, Math and Technology is located approximately 1 mile north of the existing Lugo-Mohave 500 kV Transmission Line.

Nevada

Clark County

Within the State of Nevada, the Proposed Project crosses through the CCSD. The CCSD—the fifth largest school district in the country—serves over 320,000 students from kindergarten through 12th grade. Despite the large populations throughout the rest of Clark County, the Proposed Project location is remote and only two CCSD schools are located within 1 mile of the Proposed Project. William Bennet Elementary School is located approximately 0.5 mile south of the Proposed Project along the existing Lugo-Mohave 500 kV Transmission Line. Laughlin Junior/Senior High School is located approximately 0.8 mile north of the existing Eldorado-Mohave 500 kV Transmission Line.

City of Boulder City

The CCSD, discussed in the previous section, includes the City of Boulder City. Due to the remote location of the Proposed Project, there are no CCSD schools in Boulder City within 1 mile of the Proposed Project. The closest CCSD school to the Proposed Project in Boulder City is Martha P. King Elementary School, located at 888 Adams Boulevard in Boulder City, approximately 15.2 miles northeast of Eldorado Substation.

4.14.1.1 Other Services

Hospitals

California

San Bernardino County

Due to the remote location of the Proposed Project, no hospitals are located within 1 mile of the Proposed Project. The closest hospital to the Proposed Project is the Desert Valley Hospital, located at 16850 Bear Valley Road in Victorville, approximately 7.3 miles north of the existing Lugo-Mohave 500 kV Transmission Line. The Desert Valley Hospital is an acute care hospital with medical, surgical, and diagnostic services and with inpatient, outpatient, and day treatment.

City of Hesperia

There are no hospitals in the City of Hesperia.

Nevada

Clark County

Due to the remote location of the Proposed Project, no hospitals are located within 1 mile of the Proposed Project. The closest hospital to the Proposed Project in Nevada is the Western Arizona Medical Center, which is located across the Colorado River at 2735 Silver Creek Road in Bullhead City, Arizona. The Western Arizona Medical Center is a general medical and surgical

hospital with inpatient, outpatient, and emergency room facilities, and it is located approximately 3.3 miles southeast of Mohave Substation.

City of Boulder City

Due to the remote location of the Proposed Project, no hospitals are located within 1 mile of the Proposed Project in Boulder City. The closest hospital to the Proposed Project is the Boulder City Hospital, which is located at 901 Adams Boulevard in Boulder City and approximately 14.7 miles northeast of Eldorado Substation.

Parks

There are 14 federally managed parks, recreational areas, and preserves within 1 mile of the Proposed Project. There is one Nevada State Park, and two local parks within 1 mile of the Proposed Project. These areas are shown in Figure 4.14-1: Public Services Within the Vicinity of the Proposed Project. Section 4.15, Recreation provides more information on the parks and recreational facilities near the Proposed Project.

Libraries

California

San Bernardino County

Due to the remote location of the Proposed Project, no libraries are located within 1 mile of the Proposed Project. The closest library to the Proposed Project is the Hesperia Branch Library, located at 9650 7th Avenue in Hesperia, approximately 4.2 miles north of the existing Lugo-Mohave 500 kV Transmission Line.

City of Hesperia

Due to the remote location of the Proposed Project, no libraries are located within 1 mile of the Proposed Project in Hesperia. The closest library to the Proposed Project is the Hesperia Branch Library, as previously discussed.

Nevada

Clark County

Within Clark County, the public libraries within 1 mile of the Proposed Project include Laughlin Library and Searchlight Library, which are both operated by the Las Vegas-Clark County Library District. The Laughlin Library is located at 2840 South Needles Highway in the unincorporated community of Laughlin, and approximately 0.5 mile south of the existing Lugo-Mohave 500 kV Transmission Line. The Searchlight Library is located at 200 Michael Wendell Way in the unincorporated community of Searchlight, and approximately 2.1 miles east of the existing Eldorado-Mohave 500 kV Transmission Line.

City of Boulder City

Due to the remote location of the Proposed Project, no libraries are located within 1 mile of the Proposed Project in Boulder City. The closest library to the Proposed Project is the Boulder City

Library, which is located at 701 Adams Boulevard in Boulder City and approximately 15.6 miles northeast of the existing Eldorado-Mohave 500 kV Transmission Line.

4.14.2 Regulatory Setting

Federal, State, and local regulations were reviewed for applicability to the Proposed Project. The following subsections describe regulations regarding public services that are relevant to the Proposed Project.

4.14.2.1 Federal

The Code of Federal Regulations and the Federal Emergency Management Agency, the United States (U.S.) Department of Health and Human Services, and the U.S. Department of Education websites revealed that there are no federal regulations or policies related to public services that are relevant to the Proposed Project. However, federal authorizations would be required because a majority of the land within the Proposed Project area is under the jurisdiction of the BLM, NPS, BOR, and DoD.

4.14.2.2 State

California

California Public Utilities Commission General Order 131-D

Pursuant to California Public Utilities Commission (CPUC) General Order (G.O.) 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 the California Environmental Quality Act (CEQA), the CPUC is the Lead Agency with respect to such Proposed Project elements within the State of California. SCE is required to comply with G.O. 131-D and is seeking a Permit to Construct from the CPUC for the Proposed Project.

California Public Utilities Commission General Order 95, Section 35

Section 35 of CPUC G.O. 95 covers all aspects of design, construction, and Operation and Maintenance (O&M) of electrical power lines, as well as fire safety hazards.

California Code of Regulations, Title 14, Sections 1250 to 1258

Title 14, Sections 1250 to 1258 of the California Code of Regulations provide specific clearance standards to be maintained by utility companies between electric power lines and all vegetation.

California Public Resources Code Sections 4292 and 4293

California Public Resources Code (PRC) Section 4292 states:

> "… any person that owns, controls, operates, or maintains any electrical transmission or distribution line shall, during such times and in such areas as are determined to be necessary by the director or the agency, has primary responsibility for fire protection of such areas, maintain around and adjacent to any pole or tower which supports a switch, fuse, transformer, lightening arrester, line junction, or dead end or corner

pole, a firebreak which consists of a clearing of not less than 10 feet in each direction from the outer circumference of such a pole or tower."

California PRC Section 4293 states:

"… any person that owns, controls, operates, or maintains any electrical transmission or distribution line upon any mountainous land, or in forest-covered land, or grass-covered land shall, during such times and in such areas as are determined to be necessary by the director or the agency which has primary responsibility for the fire protection of such area, maintain a clearance of the respective distances which are specified in this section in all directions between all vegetation and all conductors which are carrying electric current:

(a) For any line which is operating at 2,400 or more volts, but less than 72,000 volts, four feet
(b) For any line which is operating at 72,000 or more volts, but less than 110,000 volts, six feet
(c) For any line which is operating at 110,000 or more volts, 10 feet

In every case, such distance shall be sufficiently great to furnish the required clearance at any position of the wire, or conductor when the adjacent air temperature is 120 degrees Fahrenheit, or less. Dead trees, old decadent or rotten trees, trees weakened by decay or disease and trees or portions thereof that are leaning toward the line which may contact the line from the side or may fall on the line shall be felled, cut, or trimmed so as to remove such hazard."

Nevada

Nevada Revised Statutes Section 704.865

Nevada Revised Statutes Section 704.865 provides that "A person, other than a local government, shall not commence to construct a utility facility in the State without first having obtained a permit therefor from the Commission. The replacement of an existing facility with a like facility, as determined by the Commission, does not constitute construction of a utility facility." The Public Utilities Commission of Nevada is the Lead Agency for compliance with the Nevada Utility Environmental Protection Act.

4.14.2.3 Local

The CPUC has sole and exclusive jurisdiction over the siting and design of Proposed Project components located in the State of California. Pursuant to CPUC G.O. 131-D, Section XIV.B, "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and cities' regulations are not applicable as the county and cities do not have jurisdiction over the Proposed Project. Accordingly, the following discussion of local regulations is provided for

informational purposes only. The Proposed Project is subject to local regulations in the State of Nevada.

California

County of San Bernardino

County of San Bernardino 2007 General Plan

The Safety Element of the County of San Bernardino 2007 General Plan contains goals and policies for fire protection and emergency response. The Safety Element contains goals to protect residents and visitors from injury and loss of life, and to protect property from fires. The Safety Element of the County of San Bernardino 2007 General Plan does not contain any specific goals or policies that are relevant to the Proposed Project.

City of Hesperia

City of Hesperia General Plan 2010

The Safety Element of the City of Hesperia General Plan 2010 contains policies and goals for fire prevention and police protection. The Safety Element contains policies to minimize potential risks to residents, workers, and visitors, and identifies procedures that the city can use in emergency situations. The Safety Element of the City of Hesperia General Plan 2010 does not contain any specific goals or policies that are relevant to the Proposed Project.

Nevada

Clark County

Clark County Comprehensive Plan

The Public Facilities and Services Element of the Clark County Comprehensive Plan contains goals and policies for schools. The Safety Element contains policies for fire and emergency services, as well as police protection. The following policies from the Safety Element are relevant to the Proposed Project:

- Fire and Emergency Services Policy 1: Ensure that all developments provide adequate access for fire and other emergency vehicles and equipment (including fire hydrants)
- Police Protection Policy 3: Ensure that all developments provide adequate access to police and other emergency vehicles and equipment.

South Clark County Land Use Plan

The South Clark County Land Use Plan does not contain any specific goals or policies that are relevant to the Proposed Project.

Laughlin Land Use Plan

The following policies from the Public Services and Facilities component of the Laughlin Land Use Plan are relevant to the Proposed Project:

- Policy 31.1: When a project impacts the Clark County Fire Department the developer shall assist the Fire Department in meeting accepted levels of service standards.

- Policy 31.2: Development within Laughlin should be limited to areas where adequate fire protection services exist or can be efficiently provided.

- Policy 31.3: Development within Laughlin should demonstrate the ability to provide adequate fire protection services in any area outside the Fire Protection Service Zone, or in an area where such services may be compromised.

City of Boulder City

Boulder City Master Plan

The Public Facilities chapter of the Boulder City Master Plan includes policies for fire and police protection. The Public Facilities Element of the Boulder City Master Plan does not contain any specific goals or policies that are relevant to the Proposed Project.

4.14.3 Significance Criteria

The significance criteria for assessing the impacts to public services are derived from the CEQA Environmental Checklist.[3] According to the CEQA Checklist, 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 for any of the public services:

- fire protection
- police protection
- schools
- parks
- other public facilities

4.14.4 Impact Analysis

4.14.4.1 Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

Construction

Fire and Police Protection

No Impact. Construction of the Proposed Project would not directly interfere with fire and police protection or other emergency services in the immediate area. While several emergency

[3] CEQA is a statute that requires State of California and local agencies in California to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible. There is no CEQA equivalent for the State of Nevada. Therefore, in the absence of such regulations, the Proposed Project (including components in Nevada) has been evaluated against the CEQA significance criteria. Where specific Nevada environmental regulations exist, a discussion has been included in the impact analysis for the Proposed Project.

providers are located in the vicinity of the Proposed Project, none are located within 1 mile. As a result, the Proposed Project would not cause direct impacts to fire or police stations or their access. Construction is not anticipated to affect response times due to road closures, because any road closures that are necessary would be temporary, and alternative routes would be coordinated with emergency services prior to construction. Though temporary lane closures would be necessary during construction, traffic controls would be implemented as required by local jurisdictions through the encroachment permit process. As a result, there would be no impact to fire and police protective services and other emergency services as a result of construction of the Proposed Project.

Schools

No Impact. As discussed in Section 4.13, Population and Housing, Southern California Edison Company (SCE) anticipates as many as 15 to 346 construction personnel would be working at any given time, and some of these crew members would likely commute from the surrounding areas, including San Bernardino and Clark counties. Construction would be temporary and last approximately 15 months, and because the workforce would be relatively small and would likely commute from the surrounding areas, construction of the Proposed Project would not result in a permanent increase in the area's population. As a result, construction of the Proposed Project would not create a significant new workforce that would result in a new or increased demand for school services. Therefore, school enrollment would not be affected, and no new schools would be constructed as a result of the Proposed Project. Additionally, as discussed in Section 4.16, Transportation and Traffic, no schools are located within 0.25 mile of the Proposed Project, and there would be no impacts to access to schools as a result of construction. Therefore, there would be no impact to schools as a result of construction of the Proposed Project.

Other – Public Facilities – Parks, Hospitals, and Libraries

No Impact. Proposed Project construction activities would not require the expansion of nor result in an adverse impact to other types of public facilities, including parks, hospitals, and libraries. As discussed in Section 4.13, Population and Housing, the Proposed Project would not result in substantial population growth in the area, and thus would not create an increased demand for public facilities. As discussed in Section 4.15, Recreation, 10 recreational facilities would potentially be affected by construction-generated noise, traffic congestion, or access limitations. Given the limited duration of construction and the availability of other recreational facilities in the vicinity of the Proposed Project, any resulting increase in the use of nearby recreational facilities would be brief and temporary, and would have a negligible effect on the condition of the nearby parks. Further, the recreational facilities would not be physically altered, nor would the Proposed Project permanently affect trails or facility use. The surrounding land would remain accessible for open access. Construction of the Proposed Project would not increase local population growth, nor would it result in the need for new hospitals or hospital expansion. Therefore, no impacts to hospital facilities would result. No other public facilities are located within 0.25 mile of the Proposed Project. The closest public library—the Laughlin Library—is located approximately 0.5 mile south of the existing Lugo-Mohave 500 kV Transmission Line. The Proposed Project would not increase the local population nor otherwise result in a change that would necessitate alteration or expansion of the public library or other

existing public services. As a result, there would be no impact to other public facilities due to construction of the Proposed Project.

Operation

No Impact. O&M activities associated with the Proposed Project would be similar to those currently performed by SCE for existing facilities, and generally include repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, repairing or replacing poles and towers, tree trimming, brush and weed control, and access road maintenance, among other things. O&M practices would also include routine inspections and emergency repair within substations and rights-of-way (ROWs), which would require the use of vehicles and equipment. SCE also inspects the transmission and subtransmission overhead facilities in a manner consistent with CPUC G.O. 165, which requires observation a minimum of once per year, but inspection typically occurs more frequently to ensure system reliability. Following construction of the mid-line series capacitors,[4] additional O&M activities would consist of monthly and annual inspections, as well as equipment testing and maintenance of emergency generators, ranging from once a year to once every five years. Additional testing, inspections, and maintenance of the building, site, generator, and fuel tank would also be required at the new fiber optic repeater facilities every six months to once a year. SCE anticipates that all routine O&M needs can be met by existing staff and/or contract personnel, and that no new personnel would be brought to the area in association with the Proposed Project. These activities would not require additional full-time personnel; therefore, O&M would not cause an increase in the use of existing public services, nor would they result in a need for new schools, hospitals, fire protection, law enforcement, or other services. As discussed in Section 4.13, Population and Housing, the Proposed Project would be built to meet the electrical needs of the Los Angeles Basin and to ensure reliability of the system; therefore, the Proposed Project would not induce population growth in the area either directly or indirectly. As discussed in Chapter 5, Detailed Discussion of Significant Impacts, the Proposed Project would have no growth-inducing impacts; therefore, it would not create a need for new schools, hospitals, fire protection, or law enforcement services.

Fire and Police Protection

Routine maintenance on access roads would be conducted on an as-needed basis. This would include maintaining vegetation-free access roads to facilitate access and for fire prevention. As discussed in Section 4.8, Hazards and Hazardous Materials, O&M for the Proposed Project includes regular vegetation clearing to minimize the potential for fire. Vehicles would use existing roads and temporary roads installed during construction to access the Proposed Project area for operation activities, which would reduce the potential for vehicle heat to ignite dry vegetation and start fires. Consistent with CPUC G.O. 95 and other applicable federal and State laws, SCE would maintain an area of cleared brush around the equipment, minimizing the potential for fire. SCE participates—as well as CAL FIRE, the California Governor's Office of Emergency Services, the USFS, and various city and county fire agencies—in the Red Flag Fire Prevention Program and complies with California PRC Sections 4292 and 4293 related to

[4] The Proposed Project includes construction of two new 500 kV mid-line series capacitors—the proposed Newberry Springs Series Capacitor and Ludlow Series Capacitor.

vegetation management in transmission line corridors. As a result, the risk of fire and the subsequent need for fire services would be minimized.

As discussed previously, O&M activities would not require additional full-time personnel; therefore, O&M would not cause an increase in the use of existing public services, nor would they result in a need for new fire protection or law enforcement services. The Proposed Project would be built to meet the electrical needs of the Los Angeles Basin and to ensure reliability of the system; therefore, the Proposed Project would not induce population growth in the area either directly or indirectly or create a need for additional fire or police protection. As discussed in Chapter 5, Detailed Discussion of Significant Impacts, the Proposed Project would have no growth-inducing impacts; therefore, it would not create a need for new fire protection or law enforcement services. As a result, there would be no impact to police and fire protection as a result of O&M of the Proposed Project.

Schools

As discussed previously, O&M activities would not require additional full-time personnel; therefore, O&M would not cause an increase in the use of existing public services, nor would they result in a need for new schools. The Proposed Project would be built to meet the electrical needs of the Los Angeles Basin and to ensure reliability of the system; therefore, the Proposed Project would not induce population growth in the area either directly or indirectly or create a need for additional schools. As discussed in Chapter 5, Detailed Discussion of Significant Impacts, the Proposed Project would have no growth-inducing impacts; therefore, it would not create a need for new schools. As a result, there would be no impact to schools as a result of O&M of the Proposed Project.

Other – Public Facilities – Parks, Hospitals, and Libraries

As discussed in Section 4.15, Recreation, there would be no permanent impact to parks as a result of the Proposed Project. Therefore, there would be no impact to public services as a result of the O&M of the Proposed Project. As discussed previously, O&M activities would not require additional full-time personnel; therefore, O&M would not cause an increase in the use of existing public services, nor would they result in a need for new hospitals, libraries, or other services. The Proposed Project would be built to meet the electrical needs of the Los Angeles Basin and to ensure reliability of the system; therefore, the Proposed Project would not induce population growth in the area either directly or indirectly or create a need for additional public services. As discussed in Chapter 5, Detailed Discussion of Significant Impacts, the Proposed Project would have no growth-inducing impacts; therefore, it would not create a need for new hospitals, libraries, or other services. As a result, there would be no impact to other public facilities as a result of O&M of the Proposed Project.

4.14.5 Applicant-Proposed Measures

Because no potentially significant impacts to public services would occur as a result of the Proposed Project, no avoidance or minimization measures are proposed.

4.14.6 Mid-Line Series Capacitor Site Alternatives

Consistent with Section 15126.6(d) of the CEQA Guidelines, this Proponent's Environmental Assessment analyzes alternatives to the Proposed Project. Section 5.2, Description of Project Alternatives and Impact Analysis, identifies and compares the construction and operation of SCE's Proposed Project with its alternatives, including alternatives that did not meet key Proposed Project objectives and were not carried forward. The alternatives retained for a full evaluation—alternative sites for the Newberry Springs Series Capacitor and the Ludlow Series Capacitor—are analyzed in relation to public services in the following discussion.

The alternative site for the Newberry Springs Series Capacitor is an approximately 3.1-acre site located approximately 930 feet to the northeast of its proposed location along the Eldorado-Lugo 500 kV Transmission Line. The alternative site for the Ludlow Series Capacitor is an approximately 3.1-acre site located approximately 970 feet to the southwest of its proposed location along the Lugo-Mohave 500 kV Transmission Line.

No fire or police stations, schools, hospitals, or libraries are located within 1 mile of the proposed or alternative mid-line series capacitors. Therefore, similar to the proposed mid-line series capacitor sites, the alternative mid-line series capacitor sites would not impact fire or police stations, schools, hospitals, or libraries. As discussed in Section 4.15, Recreation, any potential recreation impacts from the alternative Newberry Springs Series Capacitor site would be incrementally greater than those for the proposed Newberry Springs Series Capacitor site; however, most of the Proposed Project construction activities would generally be confined to existing or to-be-acquired franchise areas and SCE ROWs, existing roads, and road shoulders. Further, the recreational facilities would not be physically altered, nor would the Proposed Project permanently affect trails or facility use. Any potential recreation impacts from the proposed or alternative Ludlow Series Capacitor site would be the same. Therefore, no impacts to public services from the proposed or alternative mid-line series capacitor sites are anticipated.

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4.15 Recreation

This section describes recreation in the area of the Eldorado-Lugo-Mohave Series Capacitor Project (Proposed Project[1]), as well as the potential impacts and alternatives.

The assessment of impacts to recreational facilities in the vicinity of the Proposed Project involved a review of applicable federal, State, and local agency plans, websites, and other related documents. In addition, aerial images were reviewed to determine the potential for impacts to recreational facilities in the Proposed Project area. The following subsections describe recreational facilities located within 1 mile of the Proposed Project.

4.15.1 Environmental Setting

The Proposed Project is located in California and Nevada, within the Mojave Basin and Range (Mojave). Federal lands constitute a majority of the land area in the Mojave, including lands under the jurisdiction of the Bureau of Land Management (BLM), National Park Service (NPS), Bureau of Reclamation (BOR), and Department of Defense (DoD). The Proposed Project would modify three existing transmission lines that extend northeast from Lugo Substation (located in San Bernardino County, California) to Eldorado Substation (located in the City of Boulder City, Nevada) and Mohave Substation (located in Clark County, Nevada), and from Mohave Substation to Eldorado Substation. Portions of the Proposed Project would also cross the City of Hesperia, California, the unincorporated community of Lucerne Valley in California, as well as the unincorporated communities of Searchlight and Laughlin in Nevada.

4.15.1.1 Public Recreational Facilities

Public recreational facilities within the Proposed Project area are described in the following subsections. These facilities are specifically listed by jurisdiction and are described further in Table 4.15-1: Recreational Facilities Within 1 Mile of the Proposed Project. The locations of the recreational facilities within 1 mile of the Proposed Project are shown in Figure 4.15-1: Recreational Facilities Within 1 Mile of the Proposed Project.

[1] The term “Proposed Project” is inclusive of all components of the Eldorado-Lugo-Mohave Series Capacitor Project. Where the discussion in this section focuses on a particular component, that component is called out by its individual work area. (e.g., “Ludlow Series Capacitor”).

Table 4.15-1: Recreational Facilities Within 1 Mile of the Proposed Project

Facility	Jurisdiction	Approximate Size (Acres)	Amenities	Approximate Distance to Nearest Proposed Project Component (Miles)	Nearest Proposed Project Component
California					
Crucero Valley Extensive Recreation Management Area (ERMA)	BLM	27,430	Campgrounds, hunting, backcountry touring, and open space	Spanned	Eldorado-Lugo 500 kV Transmission Line
Johnson Valley Off-Highway Vehicle (OHV) Area and Public Use Area	BLM	188,000	OHV area, and hiking trails	Spanned	Eldorado-Lugo 500 kV Transmission Line Lugo-Mohave 500 kilovolt (kV) Transmission Line
Juniper Flats	BLM	--	OHV area, open space, and hiking trails	Spanned	Eldorado-Lugo 500 kV Transmission Line Lugo-Mohave 500 kV Transmission Line

Facility	Jurisdiction	Approximate Size (Acres)	Amenities	Approximate Distance to Nearest Proposed Project Component (Miles)	Nearest Proposed Project Component
Open Access BLM Land	BLM	--	Open space and hiking trails	Spanned	Eldorado-Lugo 500 kV Transmission Line Lugo-Mohave 500 kV Transmission Line Newberry Springs Series Capacitor
				0.4	Barstow Fiber Optic Repeater
Ord Mountain Route Network	BLM	--	OHV area and hiking trails	Spanned	Lugo-Mohave 500 kV Transmission Line
Mojave Trails National Monument	BLM	965,000	Hiking trails, campgrounds, picnic areas, fossil sites, historic sites, rock collecting, and four- wheel drive trails	Spanned	Eldorado-Lugo 500 kV Transmission Line Lugo-Mohave 500 kV Transmission Line
				Adjacent	Ludlow Series Capacitor
Mojave National Preserve	NPS	1,600,000	Campgrounds, food service, stores, picnic areas, and hiking trails	Spanned	Lugo-Mohave 500 kV Transmission Line Kelbaker Fiber Optic Repeater

Facility	Jurisdiction	Approximate Size (Acres)	Amenities	Approximate Distance to Nearest Proposed Project Component (Miles)	Nearest Proposed Project Component
National Trails Special Recreation Management Area (SRMA)	BLM	483,642	Historic sites, campgrounds, and hiking trails	Spanned	Lugo-Mohave 500 kV Transmission Line
Rodman Mountains Wilderness	BLM	34,264	Open space and hiking trails	Spanned	Eldorado-Lugo 500 kV Transmission Line
				Adjacent	Lugo-Mohave 500 kV Transmission Line
Stoddard/ Johnson SRMA	BLM	351,790	OHV use, rock climbing, campgrounds, hiking trails, and open space	Spanned	Eldorado-Lugo 500 kV Transmission Line Lugo-Mohave 500 kV Transmission Line
Dead Mountains Wilderness	BLM	47,158	Open space and hiking trails	Adjacent	Lugo-Mohave 500 kV Transmission Line
Mojave Wilderness	NPS	695,200	Campgrounds, picnic areas, self-guided trails, and hiking trails	Adjacent	Lugo-Mohave 500 kV Transmission Line Kelbaker Fiber Optic Repeater

Facility	Jurisdiction	Approximate Size (Acres)	Amenities	Approximate Distance to Nearest Proposed Project Component (Miles)	Nearest Proposed Project Component
Kelso Dunes Wilderness	BLM	144,915	Open space, hiking trails, and roadside camping	<0.1	Eldorado-Lugo 500 kV Transmission Line
				<0.1	Lugo-Mohave 500 kV Transmission Line
Bristol Mountains Wilderness	BLM	71,389	Open space and hiking trails	0.1	Lugo-Mohave 500 kV Transmission Line
Mojave River Forks Regional Park	County of San Bernardino	2,393	Tent, recreational vehicle, and group camping areas, showers and restrooms, equestrian area, hiking trails, and horse trails	0.1	Lugo-Mohave 500 kV Transmission Line
Pacific Crest Trails SRMA	BLM	111,006	Hiking trails, equestrian trails, and campgrounds	0.3	Lugo-Mohave 500 kV Transmission Line
San Bernardino National Forest	United States (U.S.) Forest Service (USFS)	679,380	Campgrounds, picnic areas, recreational shooting sites, hiking trails, and equestrian trails	0.8	Lugo-Mohave 500 kV Transmission Line

Facility	Jurisdiction	Approximate Size (Acres)	Amenities	Approximate Distance to Nearest Proposed Project Component (Miles)	Nearest Proposed Project Component
Pisgah Crater	BLM/ Private	--	Rock collecting	1.0[2]	Lugo-Mohave 500 kV Transmission Line
Nevada					
Open Access BLM Land	BLM	--	Open space and hiking trails	Spanned	Eldorado-Lugo 500 kV Transmission Line Lugo-Mohave 500 kV Transmission Line
				0.3	Mohave Substation
Big Bend of the Colorado State Recreation Area	Nevada State Parks	1,966	Campgrounds, hiking trails boat launch, picnic areas, historic sites, swimming, and fishing	Spanned	Eldorado-Lugo 500 kV Transmission Line Lugo-Mohave 500 kV Transmission Line
Lake Mead National Recreation Area	NPS	1,500,000	Picnic areas, marinas, boat launches, campgrounds, and stores	0.2	Eldorado-Mohave 500 kV Transmission Line
Bridge Canyon Wilderness	NPS	7,761	Open space and hiking trails	0.2	Eldorado-Mohave 500 kV Transmission Line

[2] Boundary data was not available for Pisgah Crater; thus, the approximate distance to the nearest Proposed Project component is an approximation determined by aerial images.

Facility	Jurisdiction	Approximate Size (Acres)	Amenities	Approximate Distance to Nearest Proposed Project Component (Miles)	Nearest Proposed Project Component
Mountain View Park	Clark County	20	Tennis courts, basketball courts, and hiking trails walking trail, horseshoe pits, volleyball courts, and picnic areas	0.2	Eldorado-Lugo 500 kV Transmission Line Lugo-Mohave 500 kV Transmission Line
Old Spanish National Historic Trail	BLM and NPS	--	Historic sites, wayside exhibits, and markers	Spanned	Eldorado-Mohave 500 kV Transmission Line

Notes: "--" = information not available.
Sources: BLM, California (2015b); BLM, California (2016); Clark County (2015a); Clark County (2015b); Google (2015); NPS (2015a); NPS (2015b); NPS (2016c); NPS (2017a); NPS Business Management Group (2007); Nevada Department of Conservation and Natural Resources: Nevada State Parks (2015); Wilderness.net (2015c).

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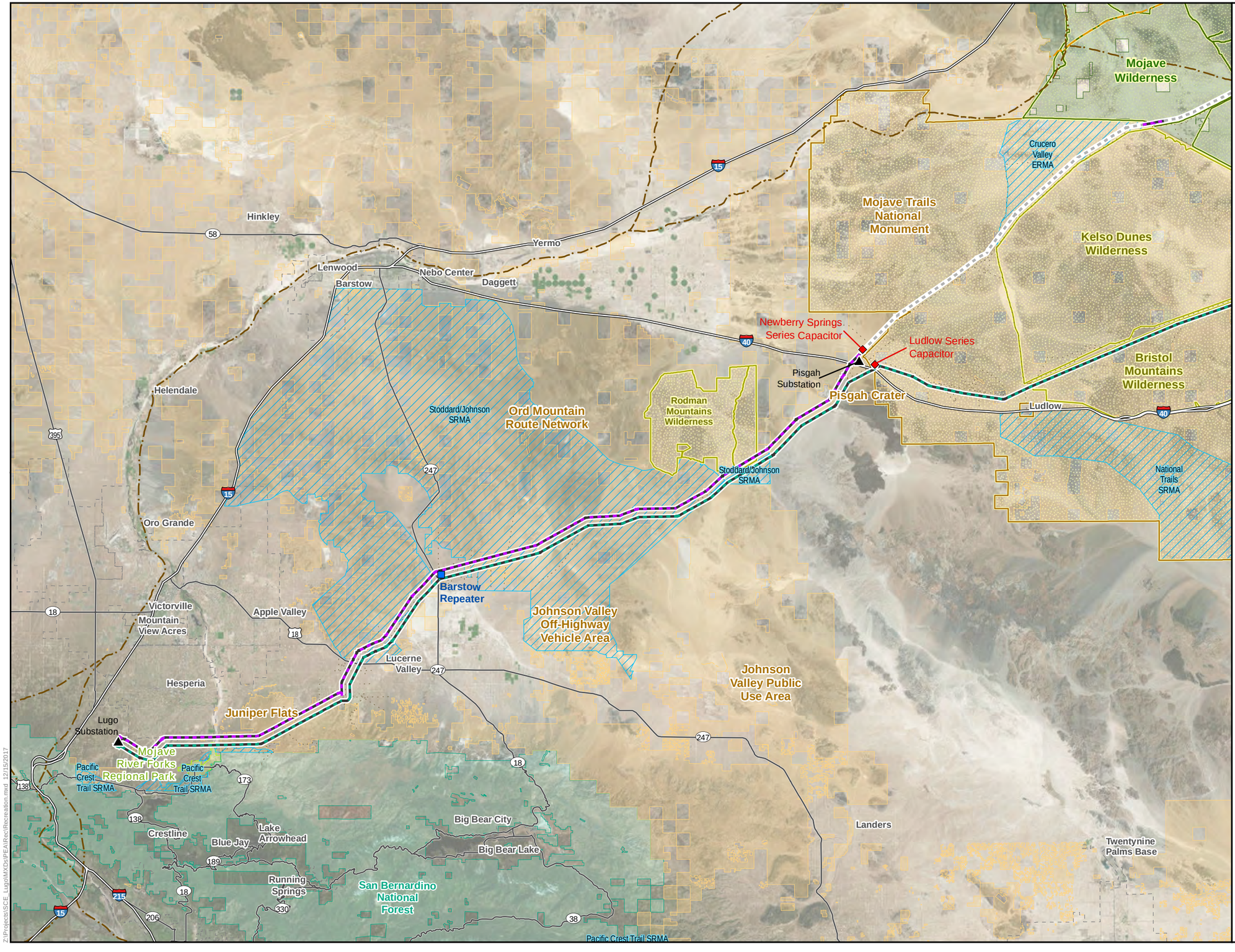
Figure 4.15-1: Recreational Facilities Within 1 Mile of the Proposed Project Map 1 of 3

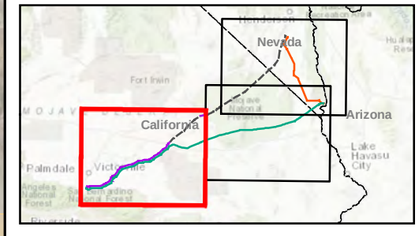
Eldorado-Lugo-Mohave Series Capacitor Project



- Existing Substation
- Proposed Mid-Line Capacitor Location
- Proposed Fiber Optic Repeater Location
- Eldorado - Lugo 500 kV Transmission Line
- Eldorado - Mohave 500 kV Transmission Line
- Lugo - Mohave 500 kV Transmission Line
- Transmission Line not part of Proposed Project
- Old Spanish Trail
- Mojave Road/Trail
- Trail/Track
- City Boundary
- State Boundary
- Interstate
- State Highway/US Highway

Park/Land Administration

- County Park
- Bureau of Land Management (BLM)
- National Park Service (NPS)
- Other State Park
- United States Forest Service
- NPS Administered Wilderness
- BLM Administered Wilderness
- BLM Administered Monument
- Special Recreation Management Area



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Source: Clark County GIS Management Office, 2016; CPAD, 2015; Insignia, 2017; SCE, 2017

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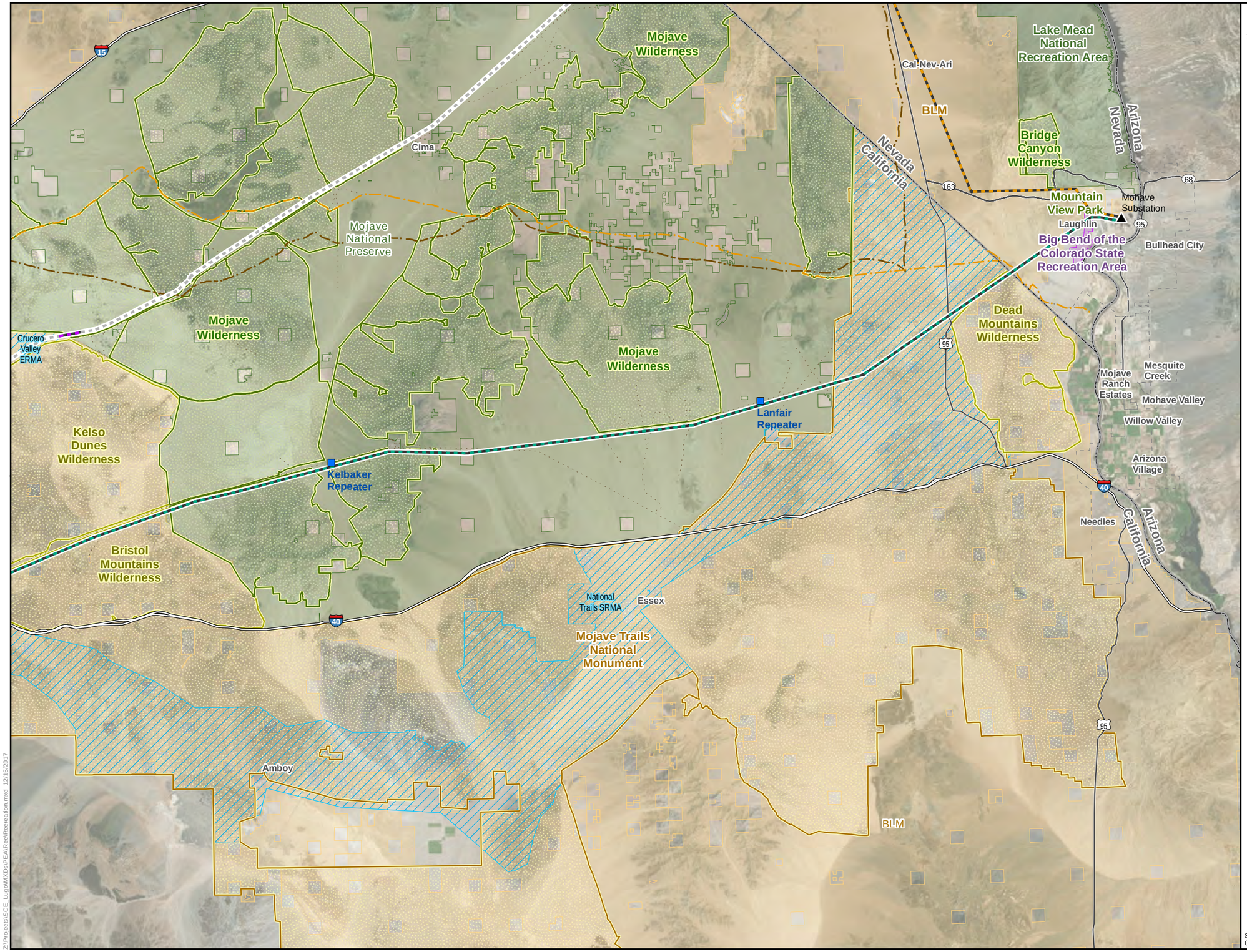
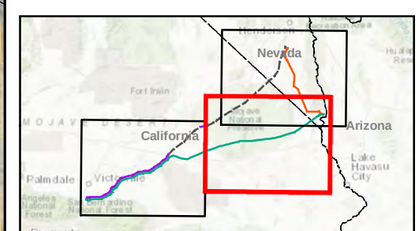
Figure 4.15-1: Recreational Facilities Within 1 Mile of the Proposed Project Map 2 of 3

Eldorado-Lugo-Mohave Series Capacitor Project





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- Eldorado - Mohave 500 kV Transmission Line
- Lugo - Mohave 500 kV Transmission Line
- Transmission Line not part of Proposed Project
- Old Spanish Trail
- Mojave Road/Trail
- Trail/Track
- City Boundary
- State Boundary
- Interstate
- State Highway/US Highway

Park/Land Administration

- County Park
- Bureau of Land Management (BLM)
- National Park Service (NPS)
- Other State Park
- United States Forest Service
- NPS Administered Wilderness
- BLM Administered Wilderness
- BLM Administered Monument
- Special Recreation Management Area

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SOUTHERN CALIFORNIA EDISON
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INSIGNIA ENVIRONMENTAL

Source: Clark County GIS Management Office, 2016; CPAD, 2015; Insignia, 2017; SCE, 2017

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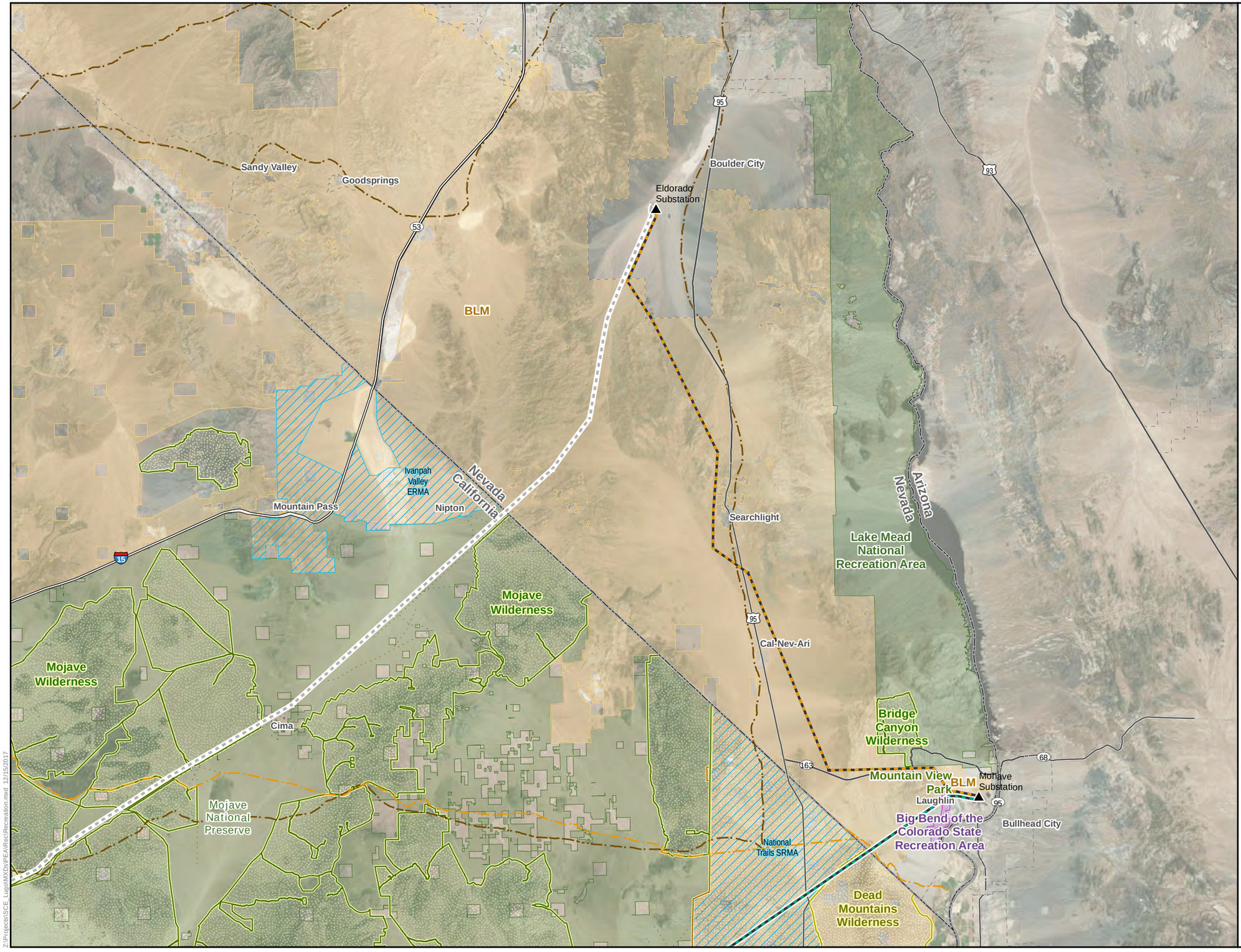
Figure 4.15-1: Recreational Facilities Within 1 Mile of the Proposed Project Map 3 of 3

Eldorado-Lugo-Mohave Series Capacitor Project



- Existing Substation
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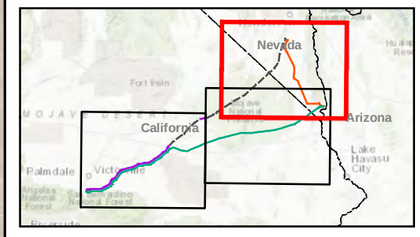
- BLM Administered Wilderness
- BLM Administered Monument
- Special Recreation Management Area



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INSIGNIA ENVIRONMENTAL

Source: Clark County GIS Management Office, 2016; CPAD, 2015; Insignia, 2017; SCE, 2017

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Federal

Bureau of Land Management[3]

California Desert District

The California Desert Conservation Area (CDCA) was created by the U.S. Congress in 1976, and approximately 10.4 million acres of the 26-million-acre preserve is managed by the California Desert District of the BLM. The California Desert District of the BLM is the southernmost BLM district of California. Its headquarters are located at 22835 Calle San Juan De Los Lagos in the City of Moreno Valley, and there are field offices in the cities of Ridgecrest, Palm Springs, El Centro, Barstow, and Needles. Recreational activities in the California Desert District include hiking, hunting, camping, land sailing, sightseeing, and the use of recreational OHVs. The existing Eldorado-Lugo 500 kV Transmission Line spans approximately 63.9 miles and the existing Lugo-Mohave 500 kV Transmission Line spans approximately 81.8 miles of BLM-managed land within the California Desert District.

Special Recreation Management Areas

SRMAs are high-priority areas for outdoor recreation opportunities, as defined in the BLM Land Use Planning Handbook. SRMAs help the BLM direct recreation program priorities toward areas with high resource values, high levels of public concern, or significant amounts of recreational activity. The following three SRMAs are located within 1 mile of the Proposed Project and are managed by the BLM.

- National Trails SRMA, spanned by the existing Lugo-Mohave 500 kV Transmission Line
- Stoddard/Johnson SRMA, spanned by both the existing Eldorado-Lugo 500 kV Transmission Line and the existing Lugo-Mohave 500 kV Transmission Line
- Pacific Crest Trails SRMA, located approximately 0.3 mile south of the existing Lugo-Mohave 500 kV Transmission Line

Extensive Recreation Management Areas

ERMAs are BLM administrative units that require specific management consideration to address recreation use and demand. These areas are managed by the BLM to support and sustain principal recreation activities and associated qualities and conditions. Recreation management actions within an ERMA are limited to only those of a custodial nature. The Crucero Valley ERMA spans the existing Eldorado-Lugo 500 kV Transmission Line.

[3] Highland Range Crucial Bighorn Sheep Habitat, located in Nevada and managed by the BLM, is within 1 mile of the Proposed Project; however, this area does not offer public access. Highland Range Crucial Bighorn Sheep Habitat is discussed further in Section 4.4 Biological Resources and Section 4.10 Land Use and Planning.

Wilderness Areas

The following four wilderness areas are within 1 mile of the Proposed Project and managed by the California Desert District of the BLM:

- Dead Mountain Wilderness, located adjacent to and south of the existing Lugo-Mohave 500 kV Transmission Line
- Rodman Mountains Wilderness, spanned by the existing Eldorado-Lugo 500 kV Transmission Line for approximately 1.6 miles and located adjacent to and north of the existing Lugo-Mohave 500 kV Transmission Line
- Kelso Dunes Wilderness, located less than 1 mile north of the existing Eldorado-Lugo 500 kV Transmission Line and less than 1 mile north of the existing Lugo-Mohave 500 kV Transmission Line
- Bristol Mountains Wilderness, located adjacent to and south of the existing Lugo-Mohave 500 kV Transmission Line

In 2014, approximately 1,785 people visited the Rodman Mountains Wilderness and approximately 15 people visited the Kelso Dunes Wilderness.[4] Visitor statistics for the Dead Mountains Wilderness and Bristol Mountains Wilderness was not available.

Johnson Valley Off-Highway Vehicle Area and Johnson Valley Public Use Area

The Johnson Valley OHV Area is located north of the unincorporated community of Johnson Valley. This OHV area offers opportunities for four-wheel-drive travel, hiking, rockhounding, and wildlife watching. Approximately 5.4 miles of the existing Eldorado-Lugo 500 kV Transmission Line and approximately 5.5 miles of the existing Lugo-Mohave 500 kV Transmission Line are located within the Johnson Valley OHV Area. In 2014, approximately 162,497 people visited the Johnson Valley OHV Area.[5]

An approximately 53,000-acre section of the community of Johnson Valley—the Johnson Valley Shared Use Area—is managed by the BLM; however, the Marine Corps occupy the Shared Use Area for two 30-day periods annually. During these times, the Johnson Valley Shared Use Area will be closed to the public and the adjacent Johnson Valley OHV Area will remain open to the public. The Johnson Valley Shared Use Area is located approximately 4.2 miles from the existing Lugo-Mohave 500 kV Transmission Line.

Ord Mountain Route Network

The Ord Mountain Route Network is located south of the City of Barstow and links the BLM-managed open areas of Stoddard Valley OHV Area to the north and Johnson Valley OHV Area to the south. This road network offers hunting, hiking, and four-wheel-drive travel. The nearest

[4] Visitation rates are not recorded for these wilderness areas, and these numbers are estimates based on an average of visits recorded in BLM-managed areas nearby.

[5] Visitation rates are not recorded for these wilderness areas, and these numbers are estimates based on an average of visits recorded in BLM-managed areas nearby.

open route of the Ord Mountain Route Network is spanned by the existing Lugo-Mohave 500 kV Transmission Line. Visitor statistics for this facility were not available.

Juniper Flats

Juniper Flats is a route network located in the northern foothills of the San Bernardino Mountains, north of San Bernardino National Forest and southeast of Victor Valley. Approximately 6.9 miles of the existing Eldorado-Lugo 500 kV Transmission Line and approximately 7 miles of the existing Lugo-Mohave 500 kV Transmission Line are located within Juniper Flats. Juniper Flats offers opportunities for vehicle touring, camping, hiking, horseback riding, and hunting. Visitor statistics for this facility were not available.

Pisgah Crater

Pisgah Crater is located within the Pisgah Lava Field, south of Interstate (I-) 40, off of Route 66 in San Bernardino County. Pisgah Crater, located approximately 1 mile south of the existing Lugo-Mohave 500 kV Transmission Line, offers opportunities for rockhounding, wildlife viewing, and hiking. Visitor statistics for this facility were not available.

Mojave Trails National Monument

The Mojave Trails National Monument is located between Joshua Tree National Park and the Mojave National Preserve along Route 66 in San Bernardino County. The Mojave Trails National Monument is managed by the BLM and covers approximately 965,000 acres. Approximately 25.3 miles of the existing Eldorado-Lugo 500 kV Transmission Line and 28.3 miles of the existing Lugo-Mohave 500 kV Transmission Line span the Mojave Trails National Monument. The proposed Ludlow Series Capacitor would be located adjacent to the Mojave Trails National Monument. The Mojave Trails National Monument offers opportunities for camping, hiking, and hunting. Visitor statistics for this facility were not available.

Old Spanish National Historic Trail

The Old Spanish National Historic Trail runs through New Mexico, Colorado, Arizona, Utah, Nevada and California. The BLM and the NPS administer the trail together to encourage preservation and public use. The Old Spanish National Historic Trail is crossed by the existing Eldorado-Mohave 500 kV Transmission Line between Tower M29-T2 and M29-T3 on land administered by the BLM. The Old Spanish National Historic Trail is not a constructed contiguous trail with a demarcated alignment, and there are very few officially designated hiking trails along the trail corridor. A variety of trail-related historic sites, wayside exhibits, and markers are located in multiple points along the trail route.

Other Open Space Areas

A majority of the BLM-managed lands spanned by the Proposed Project are open access lands in California and Nevada, and include areas for four-wheel-drive travel, hiking, hunting, and dispersed camping.

The Mojave Trail/Mojave Road (Mojave Road) is an east-west route that enters the Mojave National Preserve near Piute Spring on the east side and on Soda Dry Lake near Zzyzx on the west side and routes southeast through Nevada to the Colorado River. The Mojave Road is a

popular four-wheel drive road and it crosses the Lugo-Mohave 500 kV Transmission Line in Nevada on land administered by the BLM, east of the existing Tower M166-T1.

United States National Park Service

Mojave National Preserve

The Mojave National Preserve is located east of the City of Barstow in Southern California, between I-15 and I-40. This national preserve has three information centers, and its Headquarters Information Center is located at 2701 Barstow Road in the City of Barstow. The Mojave National Preserve was established by the California Desert Protection Act and offers four-wheel-drive roads, backcountry camping, wildflower viewing, and hunting. The Mojave National Preserve covers approximately 1.6 million acres, and approximately 49.3 miles of the existing Lugo-Mohave 500 kV Transmission Line span the Mojave National Preserve.

Providence Mountains State Recreation Area, the University of California Natural Reserve System's Sweeney Granite Mountains Desert Research Center, and California State University's Desert Studies Center at Soda Springs are also within the preserve's boundaries. Approximately 700,000 acres of the Mojave National Preserve is designated as wilderness, including the Mojave Wilderness. In 2015, approximately 589,155 people visited the Mojave National Preserve.

Mojave Wilderness

The Mojave Wilderness is also managed by the NPS and is located within the Mojave National Preserve. The Mojave Wilderness covers approximately 695,200 acres, and is adjacent to the existing Lugo-Mohave 500 kV Transmission Line.

Lake Mead National Recreation Area

Lake Mead National Recreation Area is located in Clark County, Nevada, and Mohave County, Arizona, and there is a visitor center located at 601 Nevada Way in the City of Boulder City, Nevada. Lake Mead National Recreation Area offers boating, fishing, hiking, photography, picnicking, and sightseeing. This recreation area is located approximately 0.2 mile north of the existing Eldorado-Mohave 500 kV Transmission Line. In 2015, approximately 7,298,465 people visited Lake Mead National Recreation Area.

Bridge Canyon Wilderness

Bridge Canyon Wilderness is managed by the NPS and is located in the Lake Mead National Recreation Area, northwest of the unincorporated community of Laughlin in Nevada. This wilderness area offers backpacking, camping, fishing, hunting, and equestrian activities. Bridge Canyon Wilderness is located approximately 0.2 mile north of the existing Eldorado-Mohave 500 kV Transmission Line. Visitor statistics for this facility were not available.

United States Forest Service

San Bernardino National Forest

San Bernardino National Forest is headquartered at 602 South Tippecanoe Avenue in San Bernardino, and is located in San Bernardino County, California. The national forest offers bicycling, camping, fishing, hiking, hunting, picnicking, and winter sports. There are eight

designated wilderness areas in the San Bernardino National Forest. The San Bernardino National Forest is located approximately 0.8 mile south of the existing Lugo-Mohave 500 kV Transmission Line. Visitor statistics for this facility were not available.

State

California

There are no California State parks within 1 mile of the Proposed Project in California.

Nevada

Big Bend of the Colorado State Recreation Area

Big Bend of the Colorado State Recreation Area is headquartered at 4220 Needles Highway in the unincorporated community of Laughlin. This recreation area offers picnicking, boating, fishing, swimming, camping, hiking, and group facilities that are open to the public. Approximately 0.7 mile of the existing Eldorado-Mohave 500 kV Transmission Line and the existing Lugo-Mohave 500 kV Transmission Line span Big Bend of the Colorado State Recreation Area. An average of approximately 75,000 people visit Big Bend of the Colorado State Recreation Area annually.

Local

California

County of San Bernardino

Mojave River Forks Regional Park

Mojave River Forks Regional Park is located at 17891 State Route 173 near the City of Hesperia, and this park offers camping, equestrian camping, hiking, and equestrian trails. Mojave River Forks Regional Park is located approximately 0.1 mile south of the existing Lugo-Mohave 500 kV Transmission Line. Visitor statistics for this facility were not available.

Nevada

Clark County

Mountain View Park

Mountain View Park is located at 2610 Needles Highway in the unincorporated community of Laughlin, and is managed by the Clark County Department of Parks and Recreation. The park offers tennis, basketball, and volleyball courts; a walking trail; and picnic areas. Mountain View Park is located approximately 0.2 mile south of the existing Eldorado-Mohave 500 kV Transmission Line and existing Lugo-Mohave 500 kV Transmission Line. Visitor statistics for this facility were not available.

4.15.2 Regulatory Setting

Federal, State, and local regulations were reviewed for applicability to the Proposed Project. The following subsections describe regulations regarding recreation that are relevant to the Proposed Project.

4.15.2.1 Federal

The Proposed Project is located within the NPS-managed Mojave National Preserve, BLM-managed wilderness areas, and land managed by the DoD and BOR. In addition to the federal regulations described in the following subsections, federal authorizations would also be required because a majority of the land within the Proposed Project area is under the jurisdiction of the BLM, NPS, BOR, and DoD.

The Wilderness Act of 1964

As codified by Title 16, Chapter 23 of the U.S. Code, the Wilderness Act of 1964 defines "wilderness" as an area where "the earth, and its community of life, are untrammeled by man and where man himself is a visitor who does not remain." This act also established the National Wilderness Preservation System (NWPS) that coordinates the wilderness activities of four federal agencies: the USFS, BLM, NPS, and U.S. Fish and Wildlife Service (USFWS). The NWPS provides a system by which land is evaluated and can be added to the list of wilderness areas. With some exceptions (e.g., existing private rights), the Wilderness Act prohibits motorized equipment or mechanized transport in designated wilderness areas, timber harvest, or development.

Federal Land Policy and Management Act

The Federal Land Policy and Management Act (FLPMA) provides a regulatory framework for the management and use of BLM resources. An important aspect of the FLPMA is that it supports multiple uses on public lands. In addition, under the FLPMA, the BLM regulates rights-of-way (ROWs) for electrical power generation, transmission and distribution systems, systems for the transmission and reception of electronic signals and other means of communication, pipelines (other than oil and gas), railroads, highways, and other facilities or systems developed in the interest of the public. The FLPMA also designated the approximately 26-million-acre CDCA in Southern California, of which approximately 10.4 million acres are administered by the BLM. Lands in the CDCA are also managed by the NPS, DoD, and the USFS.[6]

California Desert Conservation Area Plan

The CDCA Plan is a comprehensive, long-range plan for the management, use, development, and protection of lands within the CDCA, and it is required as part of the FLPMA and implemented by the BLM. The CDCA Plan contains an Energy Production and Utility Corridors Element, in which the BLM encourages applicants for utility ROWs to use designated corridors.

The West Mojave (WEMO) Route Network Project and Plan Amendment applies to the western portion of California's Mojave Desert; the West Mojave Planning Area covers approximately 9.4 million acres and the Proposed Project is located within this area. The WEMO Route Network Project and Plan Amendment supplements the 2006 West Mojave Plan/Amendment to the CDCA Plan. The 2006 West Mojave Plan was a proposed Habitat Conservation Plan and CDCA Plan Amendment. The goals of the WEMO Route Network Project and Plan Amendment are to identify a travel and transportation management strategy, implementation framework,

[6] As shown in Table 4.15-1: Recreational Facilities Within 1 Mile of the Proposed Project, the Proposed Project is located 0.8 mile from San Bernardino National Forest and does not cross USFS land.

access network for public land users, and livestock grazing alternatives. The public comment period for the Final Draft of the Programmatic Agreement to the WEMO Route Network Project and Plan Amendment closed on January 25, 2016.

Desert Renewable Energy Conservation Plan

The Desert Renewable Energy Conservation Plan (DRECP) is a collaborative effort between the California Energy Commission, California Department of Fish and Wildlife, BLM, and USFWS to advance federal and State natural resource conservation goals and other federal land management goals; meet the requirements of the federal Endangered Species Act, California Endangered Species Act, Natural Community Conservation Planning Act, and FLPMA; and facilitate the timely and streamlined permitting of renewable energy projects in the Mojave and Colorado/Sonoran desert regions of Southern California. The DRECP covers approximately 22.5 million acres in the desert regions of Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego counties. The DRECP is being prepared in two phases. Phase I consists of the BLM Land Use Plan Amendment to the CDCA Plan and Bishop and Bakersfield Resource Management Plan. Phase II will consist of a General Conservation Plan for approximately 5.5 million acres of non-federal land and a Conceptual Plan-Wide Natural Community Conservation Plan that encompasses the entire DRECP area. The DRECP includes two types of recreation designations: SRMAs and ERMAs.

California Desert Protection Act of 1994

The California Desert Protection Act of 1994 is a federal law that established Death Valley National Park, Joshua Tree National Park, and the Mojave National Preserve in California. Section 511 Utility Rights of Way states that Southern California Edison Company (SCE) activities within the ROW of the Mojave National Preserve are to remain valid. This includes upgrades to the existing electrical transmission line for the purpose of increasing capacity, and in the existing Eldorado-Lugo 500 kV Transmission Line ROW and existing Lugo-Mohave 500 kV Transmission Line ROW, no additional land would be issued, granted, or permitted for such an upgrade unless an addition would reduce the impacts to resources in the Mojave National Preserve.

Mojave General Management Plan

The Mojave General Management Plan (i.e., the management strategy for the Mojave National Preserve) was developed as a requirement of the California Desert Protection Act of 1994, and is implemented by the NPS. The Mojave General Management Plan does not contain policies that are relevant to the Proposed Project.

National Forest Management Act of 1976

The National Forest Management Act (NFMA)—as codified by Title 16, Section 1604 (g)(3)(B) of the U.S. Code—reorganized, expanded, and amended the Forest and Rangeland Renewable Resources Planning Act of 1974, which promoted the management of renewable resources on federally owned forest lands. The objective of the NFMA is to maintain species diversity and multiple use on forest lands by requiring the Secretary of Agriculture to evaluate forest lands, develop a management system based on multiple-use and sustained-yield concepts, and

implement a resource management plan for each unit of the National Forest System. The NFMA does not contain policies that are relevant to the Proposed Project.

Clark County Conservation of Public Land and Natural Resources Act of 2002

The Clark County Conservation of Public Land and Natural Resources Act of 2002 establishes wilderness areas, promotes conservation, improves public land, and provides for high-quality development in Clark County, Nevada. It established Bridge Canyon Wilderness as part of the NWPS, which is located within the Lake Mead National Recreation Area. No policies regarding recreation resources are relevant to the Proposed Project.

4.15.2.2 State

California

California Public Utilities Commission General Order 131-D

Pursuant to California Public Utilities Commission (CPUC) General Order (G.O.) 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 the California Environmental Quality Act (CEQA), the CPUC is the Lead Agency with respect to such Proposed Project elements within the State of California. SCE is required to comply with G.O. 131-D and is seeking a Permit to Construct from the CPUC for the Proposed Project.

Nevada

Nevada Revised Statutes Section 704.865

Nevada Revised Statutes Section 704.865 provides that "A person, other than a local government, shall not commence to construct a utility facility in the State without first having obtained a permit therefor from the Commission. The replacement of an existing facility with a like facility, as determined by the Commission, does not constitute construction of a utility facility." The Public Utilities Commission of Nevada is the Lead Agency for compliance with the Nevada Utility Environmental Protection Act.

No additional State of Nevada policies regarding recreation resources are relevant to the Proposed Project.

4.15.2.3 Local

The CPUC has sole and exclusive jurisdiction over the siting and design of Proposed Project components located in the State of California. Pursuant to CPUC G.O. 131-D, Section XIV.B, "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and cities' regulations are not applicable as the county and cities do not have jurisdiction over the Proposed Project. Accordingly, the following discussion of local regulations is provided for

informational purposes only. The Proposed Project is subject to local regulations in the State of Nevada.

California

County of San Bernardino

County of San Bernardino 2007 General Plan

The Conservation Element of the County of San Bernardino 2007 General Plan does not contain any specific goals or policies that are relevant to the Proposed Project.

City of Hesperia

City of Hesperia General Plan 2010

The Conservation and Open Space elements of the City of Hesperia General Plan 2010 do not contain any specific goals or policies that are relevant to the Proposed Project.

Nevada

Clark County

Clark County Comprehensive Plan

The Recreation and Open Space Element of the Clark County Comprehensive Plan was reviewed for recreation policies that are relevant to the Proposed Project. The Clark County Comprehensive Plan contains the following policy, which is relevant to the Proposed Project and addressed in Section 4.10, Land Use and Planning:

- Utilities 13: Explore opportunities with utility providers to locate trails within existing and future utility corridors wherever possible.

South Clark County Land Use Plan

The South Clark County Land Use Plan was reviewed for recreation policies that are relevant to the Proposed Project. The South Clark County Land Use Plan contains the following policy, which is relevant to the Proposed Project and addressed in Section 4.10, Land Use and Planning:

- Policy 30.2: Promote the joint use of high voltage transmission line corridors and transportation systems that allow for the development of pedestrian, equestrian, and bicycle trails within existing and planned transmission line corridors. Incorporate strategies that take into consideration access for routine and emergency transmission line maintenance.

Laughlin Land Use Plan

The Laughlin Land Use Plan does not contain any specific goals or policies that are relevant to the Proposed Project.

City of Boulder City

Boulder City Master Plan

The Parks and Recreation Element of the Boulder City Master Plan does not contain any specific goals or policies that are relevant to the Proposed Project.

4.15.3 Significance Criteria

The significance criteria for assessing the impacts to recreational resources are derived from the CEQA Environmental Checklist.[7] According to the CEQA Checklist, a project causes a potentially significant impact if it would:

- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated
- Include recreational facilities, or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment

4.15.4 Impact Analysis

4.15.4.1 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?

Construction

Less-Than-Significant Impact. SCE anticipates as many as 15 to 346 construction personnel would be working on the Proposed Project at any given time during the approximately 15 months of Proposed Project construction. Crew members would likely commute from the San Bernardino and Clark County areas, and are not anticipated to permanently relocate to the area. The minor increase in daily worker population would be temporary and would not put additional demand on existing recreational facilities. In addition, as described in Section 4.13, Population and Housing, the Proposed Project would not induce population growth in the area either directly or indirectly. Therefore, the Proposed Project would not promote new growth or development that would increase the use of existing recreational facilities and result in substantial physical deterioration.

Most of the Proposed Project construction activities would generally be confined to existing or to-be-acquired franchise areas and SCE ROWs, existing roads, and road shoulders; however, parks and recreational facilities spanned by or adjacent to the Proposed Project may be temporarily affected by construction-generated noise, traffic congestion, or access limitations.

[7] CEQA is a statute that requires State of California and local agencies in California to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible. There is no CEQA equivalent for the State of Nevada. Therefore, in the absence of such regulations, the Proposed Project (including components in Nevada) has been evaluated against the CEQA significance criteria. Where specific Nevada environmental regulations exist, a discussion has been included in the impact analysis for the Proposed Project.

The following 10 recreational facilities are spanned by or adjacent to the Proposed Project; however, they would not be physically altered by construction of the Proposed Project:

- Rodman Mountains Wilderness
- Kelso Dunes Wilderness
- Bristol Mountains Wilderness
- Dead Mountains Wilderness
- Mojave Trails National Monument
- Mojave National Preserve and Mojave Wilderness
- Lake Mead National Recreation Area
- Bridge Canyon Wilderness
- Big Bend of the Colorado State Recreation Area
- Old Spanish National Historic Trail

As discussed in Section 4.16, Transportation and Traffic, SCE or SCE's contractor would obtain encroachment permits where necessary from State and local agencies and conduct temporary or partial lane closures if needed in accordance with the permit requirements. Because these closures would be temporary, short in duration, potentially lasting several hours at a time, and coordinated with local agencies through the permitting process, the Proposed Project would not cause significant impacts to transportation and traffic in the area. As previously discussed, there are very few officially designated hiking trails along the Old Spanish National Historic Trail corridor; therefore, it is unlikely that construction activities will impact access. Depending on construction work areas and potential lane closures along the existing Lugo-Mohave 500 kV Transmission Line, access to Box Canyon (OJ295), a four-wheel drive road, may temporarily be impacted. Within Kelso Dunes Wilderness, access to Tonopah and Tidewater Old Railroad Grade by way of Crucero Road may be temporarily impacted. Access to the Mojave National Preserve and trails by way of Kelbaker Road, Essex Road, and Lanfair Road may temporarily be impacted, including access to Kelso Dunes Trailhead and roadside vehicle camping that is permitted in selected sites on Kelso Dunes Road. Additionally, access to the Mojave Trails National Monument, Mojave Road, Dead Mountains Wilderness, Lake Mead National Recreation Area, and Bridge Canyon Wilderness may also temporarily be impacted. Construction activities in each of these areas would not occur simultaneously, and construction in each area would last approximately a few days to 15 weeks. Therefore, the potential access limitations to this areas could increase the use of surrounding recreational facilities.

Given the limited duration of construction and the availability of other recreational facilities in the vicinity of the Proposed Project, any resulting increase in the use of nearby recreational facilities would be brief and temporary, and would have a negligible effect on the condition of the nearby parks. Additionally, SCE or SCE's contractor would provide advance notice of temporary trail or access restrictions would be provided at the affected facilities before periods of active construction and during temporary access restrictions. Construction areas within recreational facilities would be demarcated to prevent the public from entering specific areas when in use. Further, all access to one single recreational facility would not be closed during the entire 15-month construction period, as construction would occur in linear phases. Within the Mojave National Preserve and the Mojave Trails National Monument, there would be alternative access to trails. As a result, potential impacts to nearby recreation areas would be less than significant.

Operation

No Impact. Operation and Maintenance (O&M) activities associated with the Proposed Project would be similar to those currently performed by SCE for existing facilities, and generally include repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, repairing or replacing poles and towers, tree trimming, brush and weed control, and access road maintenance, among other things. O&M practices would also include routine inspections and emergency repair within substations and ROWs, which would require the use of vehicles and equipment. SCE also inspects the transmission and subtransmission overhead facilities in a manner consistent with CPUC G.O. 165, which requires observation a minimum of once per year, but inspection typically occurs more frequently to ensure system reliability. Following construction of the mid-line series capacitors,[8] additional O&M activities would consist of monthly and annual inspections, as well as equipment testing and maintenance of emergency generators, ranging from once a year to once every five years. Additional testing, inspections, and maintenance of the building, site, generator, and fuel tank would also be required at the new fiber optic repeater facilities every six months to once a year. Because the number of new personnel in the Proposed Project area would not increase, no additional park and recreational facility usage is expected, and no impact would occur. As described in Section 4.13, Population and Housing, the Proposed Project would not create a need for additional housing or long-term population immigration that would result in a permanent increase in park or recreational facility use. The Proposed Project would accommodate existing and planned growth within the SCE service area and would not alter the location, distribution, density, or growth rate of the population.

4.15.4.2 Would the project include recreational facilities, or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

Construction

No Impact. The Proposed Project does not include or require the construction of recreational facilities. Furthermore, as previously described, the impacts to any existing facilities would be temporary and less than significant. Therefore, no additional recreational facilities would be required to accommodate users as a result of the Proposed Project. Additionally, as described in Section 4.13, Population and Housing, the Proposed Project would not induce population growth in the area directly or indirectly. Therefore, the Proposed Project would not promote new growth or development that would increase the use of existing recreational facilities. As a result, the Proposed Project would not require the construction or expansion of recreational facilities and no impact would occur.

Operation

No Impact. As previously described, O&M activities associated with the Proposed Project would be similar to those currently performed for the existing facilities, with additional O&M activities associated with the proposed mid-line series capacitors and fiber optic repeater facilities. O&M practices do not typically impact recreational uses or facilities in the area, and

[8] The Proposed Project includes construction of two new 500 kV mid-line series capacitors—the proposed Newberry Springs Series Capacitor and Ludlow Series Capacitor.

O&M of the Proposed Project would not introduce new employees into the area that would require construction of new or expanded recreational facilities. Therefore, as the Proposed Project would not require the construction or expansion of recreational facilities, there would be no adverse physical effect on the environment.

4.15.5 Applicant-Proposed Measures

Because no impacts to recreation resources would occur as a result of the Proposed Project, no avoidance or minimization measures are proposed.

4.15.6 Mid-Line Series Capacitor Site Alternatives

Consistent with Section 15126.6(d) of the CEQA Guidelines, this Proponent's Environmental Assessment analyzes alternatives to the Proposed Project. Section 5.2, Description of Project Alternatives and Impact Analysis, identifies and compares the construction and operation of SCE's Proposed Project with its alternatives, including alternatives that did not meet key Proposed Project objectives and were not carried forward. The alternatives retained for a full evaluation—alternative sites for the Newberry Springs Series Capacitor and the Ludlow Series Capacitor—are analyzed in relation to recreation in the following discussion.

The alternative site for the Newberry Springs Series Capacitor is an approximately 3.1-acre site located approximately 930 feet to the northeast of its proposed location along the existing Eldorado-Lugo 500 kV Transmission Line. The alternative site for the Ludlow Series Capacitor is an approximately 3.1-acre site located approximately 970 feet to the southwest of its proposed location along the existing Lugo-Mohave 500 kV Transmission Line.

This section analyzes the alternative siting locations for the mid-line series capacitors. The alternative Newberry Springs Series Capacitor site is an approximately 3.1-acre site located approximately 930 feet to the northeast of its proposed location along the existing Eldorado-Lugo 500 kV Transmission Line. The alternative Ludlow Series Capacitor site is an approximately 3.1-acre site located approximately 970 feet to the southwest of its proposed location along the existing Lugo-Mohave 500 kV Transmission Line.

The proposed Newberry Springs Series Capacitor site is located within open access BLM land and adjacent to the Mojave Trails National Monument boundary. The alternative Newberry Springs Series Capacitor site is also located within open access BLM land and is located partially within the Mojave Trails National Monument boundary. The amount and location of construction personnel working on the Proposed Project would remain the same for the proposed Newberry Springs Series Capacitor site and the alternative site, and neither would promote new growth or development that would increase the use of existing recreational facilities and result in substantial physical deterioration. The alternative Newberry Springs Series Capacitor site would be a new, permanent, aboveground component partially within the Mojave Trails National Monument boundary; however, siting the alternative capacitor at this location would not cause substantial physical deterioration of the facility because the alternative mid-line series capacitor site would be on the border of the Mojave Trails National Monument boundary and not located near any existing trails or access to the park. Access into the Mojave Trails National Monument would not be impacted as a result of the alternative, as visitors would have access by way of Crucero Road east of the mid-line series capacitor. Therefore, there would not be an increase in

the use of surrounding recreational facilities as a result of the alternative mid-line series capacitor site location. As a result, any potential recreation impacts from the alternative site would be incrementally greater than those for the proposed Newberry Springs Series Capacitor.

The proposed Ludlow Series Capacitor site is located within Mojave Trails National Monument boundary and is not located within open access BLM land. The alternative Ludlow Series Capacitor site is located partially within open access BLM land and completely within the Mojave Trails National Monument boundary. Both the proposed Ludlow Series Capacitor site and the alternative site would be located within the Mojave Trails National Monument boundary, and associated impacts would be the same. A new access road would be constructed for each capacitor site; however, access into the Mojave Trails National Monument would not be impacted as a result of either site, as visitors would have access by way of Crucero Road east of the mid-line series capacitor. Similar to the alternative Newberry Springs Series Capacitor site, the amount and location of construction personnel working on the Proposed Project would not change, and the Proposed Project would not promote new growth or development that would increase the use of existing recreational facilities and result in substantial physical deterioration. A new access road would be constructed for each mid-line series capacitor site; however, siting the alternative capacitor at either location would not impact access into the Mojave Trails National Monument or open access BLM land, as visitors would have access by way of Crucero Road east of the capacitor sites or Pisgah Crater Road south of the capacitor sites. Therefore, there would not be an increase in the use of surrounding recreational facilities as a result of the alternative capacitor site location. As a result, any potential recreation impacts from the alternative site would be the same as those for the proposed Ludlow Series Capacitor site.

The proposed and alternative mid-line series capacitors would not require the construction or expansion of recreational facilities, and the impacts would be the same. O&M activities for the proposed and alternative mid-line series capacitor sites would be similar.

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4.16 Transportation and Traffic

This section describes the transportation and traffic in the area of the Eldorado-Lugo-Mohave Series Capacitor Project (Proposed Project[1]), as well as the potential impacts and alternatives.

Transportation and traffic data for the Proposed Project area were obtained primarily through Internet research and reviews of relevant literature from the following sources:

- United States (U.S.) Department of Transportation (DOT)
- California Department of Transportation (Caltrans)
- Nevada Department of Transportation (NDOT)
- General plans for the County of San Bernardino, Clark County, and the cities of Hesperia and Boulder City
- San Bernardino County Transportation Department
- Congestion Management Program (CMP) for San Bernardino County
- Clark County Traffic Report
- Traffic study prepared by Fehr & Peers for the Proposed Project

4.16.1 Environmental Setting

The Proposed Project is located in California and Nevada, within the Mojave Basin and Range (Mojave). Federal lands constitute a majority of the land area in the Mojave, including lands under the jurisdiction of the Bureau of Land Management (BLM), National Park Service (NPS), Bureau of Reclamation (BOR), and Department of Defense (DoD). The Proposed Project would modify three existing transmission lines that extend northeast from Lugo Substation (located in San Bernardino County, California) to Eldorado Substation (located in the City of Boulder City, Nevada) and Mohave Substation (located in Clark County, Nevada), and from Mohave Substation northwest to Eldorado Substation. Portions of the Proposed Project would also cross the City of Hesperia, California, the unincorporated community of Lucerne Valley in California, as well as the unincorporated communities of Searchlight and Laughlin in Nevada.

4.16.2 Existing Roadway Network Setting

A list of roadways spanned by existing and proposed transmission facilities associated with Proposed Project that may be used for construction vehicle travel has been included in Table 4.16-1: Roadway Network in the Vicinity of the Proposed Project. Table 4.16-1: Roadway Network in the Vicinity of the Proposed Project also includes the classification, number of lanes, traffic volume data, average annual daily traffic (AADT), and Level of Service (LOS) information (where available) for these roadways. In addition, the results of the Eldorado-Lugo-Mohave Traffic Study conducted by Fehr and Peers were incorporated into Table 4.16-1: Roadway Network in the Vicinity of the Proposed Project. Roadways in the Proposed Project vicinity are depicted on Figure 4.16-1: Roadway Network in the Vicinity of the Proposed Project, and the Traffic Study is provided in Appendix L: Traffic Study.

[1] The term "Proposed Project" is inclusive of all components of the Eldorado-Lugo-Mohave Series Capacitor Project. Where the discussion in this section focuses on a particular component, that component is called out by its individual work area (e.g., "Ludlow Series Capacitor").

Table 4.16-1: Roadway Network in the Vicinity of the Proposed Project

Roadway	Nearest Cross Street	Roadway Location	Classification	Approximate Number of Lanes[2]	Existing Traffic Volume (ADT)	Roadway Capacity (AADT)	Existing LOS
Lugo Substation							
Fuente Avenue	Whitehaven Street	Spanned	Local	Two	12	400	A
Escondido Avenue	Ranchero Road	Adjacent	Local	Two	LOS analyzed in Traffic Study*	LOS analyzed in Traffic Study*	A*
Eldorado-Lugo and Lugo-Mohave 500 kilovolt (kV) Transmission Lines[3]							
Summit Valley Road	Telephone Canyon Road	Spanned	Minor Arterial	Two	--	--	--
Los Flores Road	Summit Valley Road	Spanned	Minor Arterial	Unpaved road, no lanes	--	--	--
Arrowhead Lake Road	State Route (SR-) 173	Spanned	Local	Two	810	6,300	A
Bowen Ranch Road	South Valley View Road	Spanned	Local	Unpaved road, no lanes	196	400	A
SR-18	Bear Valley Cutoff	Spanned	Minor Arterial	Two	9,500	14,000	B

[2] This column specifies the total number of lanes traveling in both directions.
[3] Not all roads are spanned by the Eldorado-Lugo 500 kV Transmission Line, which separates from the Lugo-Mohave 500 kV Transmission Line southwest of Pisgah Substation.

Roadway	Nearest Cross Street	Roadway Location	Classification	Approximate Number of Lanes[2]	Existing Traffic Volume (ADT)	Roadway Capacity (AADT)	Existing LOS
High Road	SR-18	Spanned	Local	Unpaved road, no lanes	713	1,100	B
Exeter Street	West Cove Road	Spanned	Local	Unpaved road, no lanes	153	400	A
Banta Road	Chuckawalla Road	Spanned	Local	Unpaved road, no lanes	20	400	--
SR-247/Barstow Road	Haynes Road	Spanned	Minor Arterial	Two	--	--	--
Meridian Road	Powerline Road	Spanned	Local	Two	74	400	A
Huff Road	North Northside Road	Spanned	Local	Unpaved road, no lanes	44	400	A
Camp Rock Road	Troy Road	Spanned	Local	Unpaved road, no lanes	13	400	A
Kelbaker Road	Kelso Dunes Road	Spanned	Major Collector	Two	--	--	--
Essex Road	North Black Canyon Road	Spanned	Major Collector	Two	25	400	A
Black Canyon Road	Essex Road	Spanned	Minor Collector	Two	--	--	--
Lanfair Road	North Goffs Road	Spanned	Major Collector	Two	35	400	A

Roadway	Nearest Cross Street	Roadway Location	Classification	Approximate Number of Lanes[2]	Existing Traffic Volume (ADT)	Roadway Capacity (AADT)	Existing LOS
U.S. Highway (US-) 95	Goffs Road	Spanned	Other Principal Arterial	Two	2,700	8,500	A
Santa Rosa Road	East Willow Wells Avenue	Adjacent	Local	Unpaved road, no lanes	28	400	A
Pisgah Substation, Newberry Springs Series Capacitor, and Ludlow Series Capacitor							
I-40	Pisgah Crater Road	Spanned	Principal Arterial	Four	--	--	--
Pisgah Crater Road	National Trails Highway	Spanned	Local	Two	11	400	A
National Trails Highway	Pisgah Crater Road	Adjacent	Major Collector	Two	--	--	--
Hector Road*	Interstate (I-) 40 East Ramps	Approximately 3.9 miles west of Pisgah Substation	Local	Two	LOS analyzed in Traffic Study*	LOS analyzed in Traffic Study*	A
Hector Road*	I-40 West Ramps	Approximately 3.9 miles west of Pisgah Substation	Local	Two	LOS analyzed in Traffic Study*	LOS analyzed in Traffic Study*	A

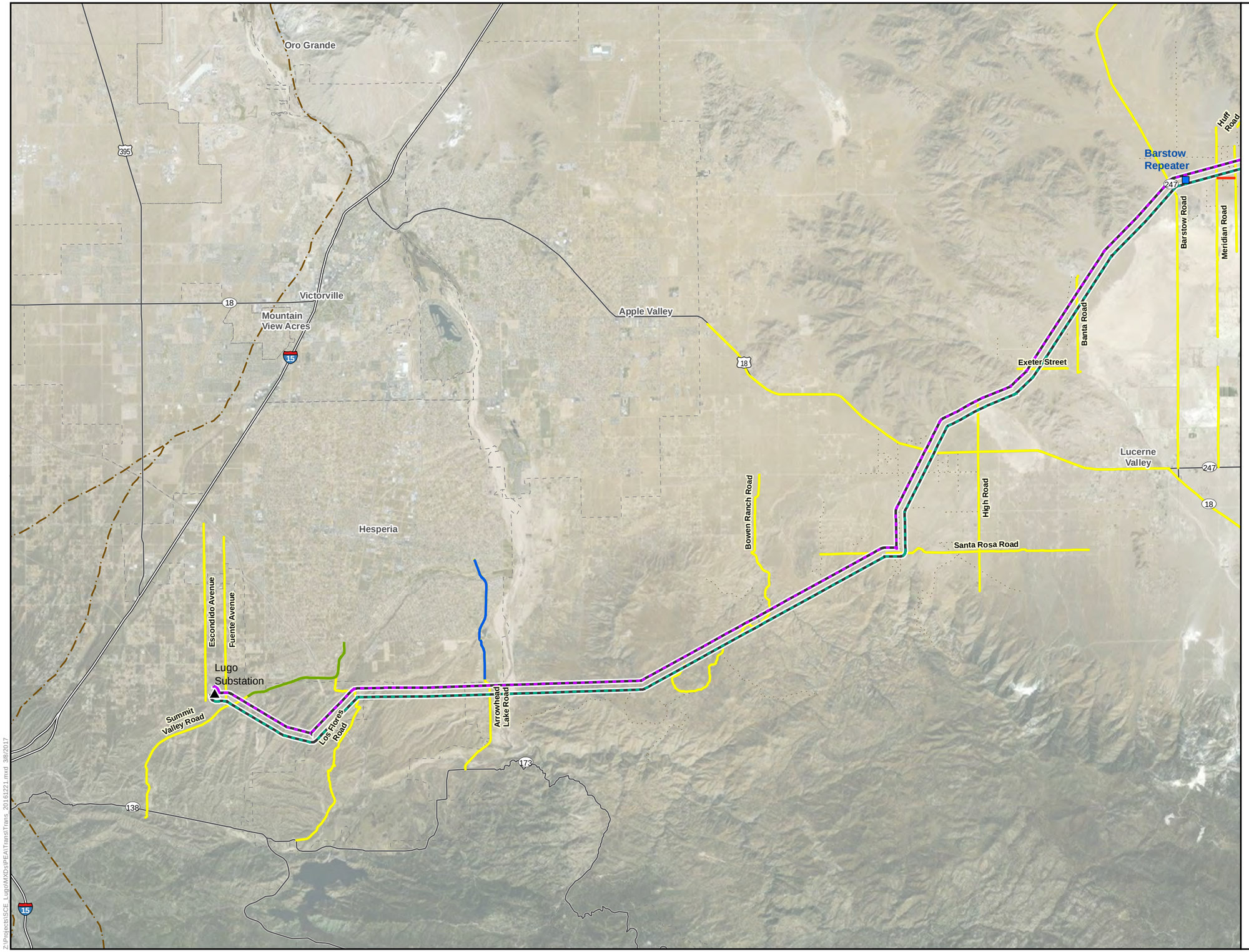
Roadway	Nearest Cross Street	Roadway Location	Classification	Approximate Number of Lanes[2]	Existing Traffic Volume (ADT)	Roadway Capacity (AADT)	Existing LOS
Mohave Substation							
Edison Way*	Bruce Woodbury Drive	Adjacent	Local	Two	LOS analyzed in Traffic Study*	LOS analyzed in Traffic Study*	A*
Eldorado-Mohave 500 kV Transmission Line							
Needles Highway	Bruce Woodbury Drive	Spanned	Interstate/State Highway	Two to Four	1,700	34,000	A
Nevada SR-163/Laughlin Highway	Christmas Tree Pass Road	Spanned	Minor Arterial	Four	--	--	--
Christmas Tree Pass Road	US-95	Spanned	Local	Unpaved road, no lanes	--	--	--
Loran Station Road	US-95	Spanned	Local	Unpaved road, no lanes	--	--	--
US-95	Old Airport Road	Spanned	Other Principal Arterials	Four	--	--	--
SR-163/Nipton Road	Gas Pipeline Road	Spanned	Major Collector	Two	550	2,600	--

Roadway	Nearest Cross Street	Roadway Location	Classification	Approximate Number of Lanes[2]	Existing Traffic Volume (ADT)	Roadway Capacity (AADT)	Existing LOS
Eldorado Substation							
US-95*	Eldorado Valley Road	Spanned	Interstate	Four	LOS analyzed in Traffic Study*	LOS analyzed in Traffic Study*	A

Sources: Caltrans (2014), Clark County (2014), County of San Bernardino Transportation Department (2014), U.S. DOT (2013), Fehr and Peers (2016), Google (2016), NDOT (2015a, 2015b), OpenStreetMap (2016), San Bernardino Associated Governments (SANBAG) (2016a, 2016b, 2016c)
Notes: "--" = information not available; "N/A" = not applicable; "ADT" = Average Daily Trip
* = The LOS for roadways serving Eldorado, Lugo, Mohave, and Pisgah Substations were evaluated in the Traffic Study conducted by Fehr and Peers using methods from Chapters 18 and 19 of the Transportation Research Board's 2010 Highway Capacity Manual. These methods use various intersection characteristics (e.g., traffic volumes, lane geometry, and signal phasing) to estimate the average control delay experienced by motorists traveling through an intersection. The LOS analysis is described in Appendix L: Traffic Study.

Figure 4.16-1: Roadway Network in the Vicinity of the Proposed Project Map 1 of 9

Eldorado-Lugo-Mohave Series Capacitor Project



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- Planned Bikeway
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- Trail/Track
- City Boundary
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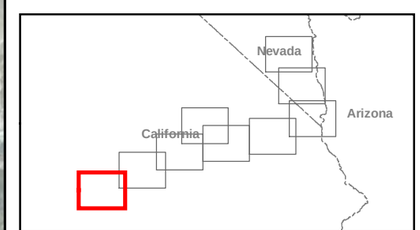
- Interstate
- State Highway/US Highway



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Source: Insignia, 2016; CPAD, 2015;
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Figure 4.16-1: Roadway Network in the Vicinity of the Proposed Project Map 2 of 9

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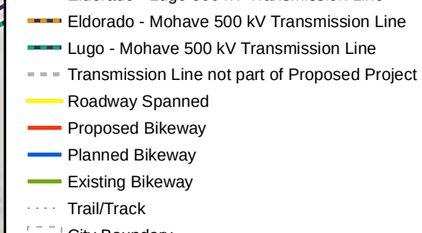

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Figure 4.16-1: Roadway Network in the Vicinity of the Proposed Project Map 3 of 9

Eldorado-Lugo-Mohave Series Capacitor Project

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Hector Road

Needles Freeway

National Trails Highway

Pisgah Substation

Newberry Springs Series Capacitor

Ludlow Series Capacitor

Pisgah Crater Road

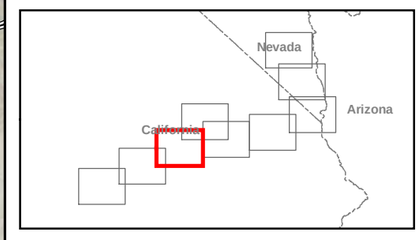
40

Needles Freeway

Ludlow

National Trails Highway

40



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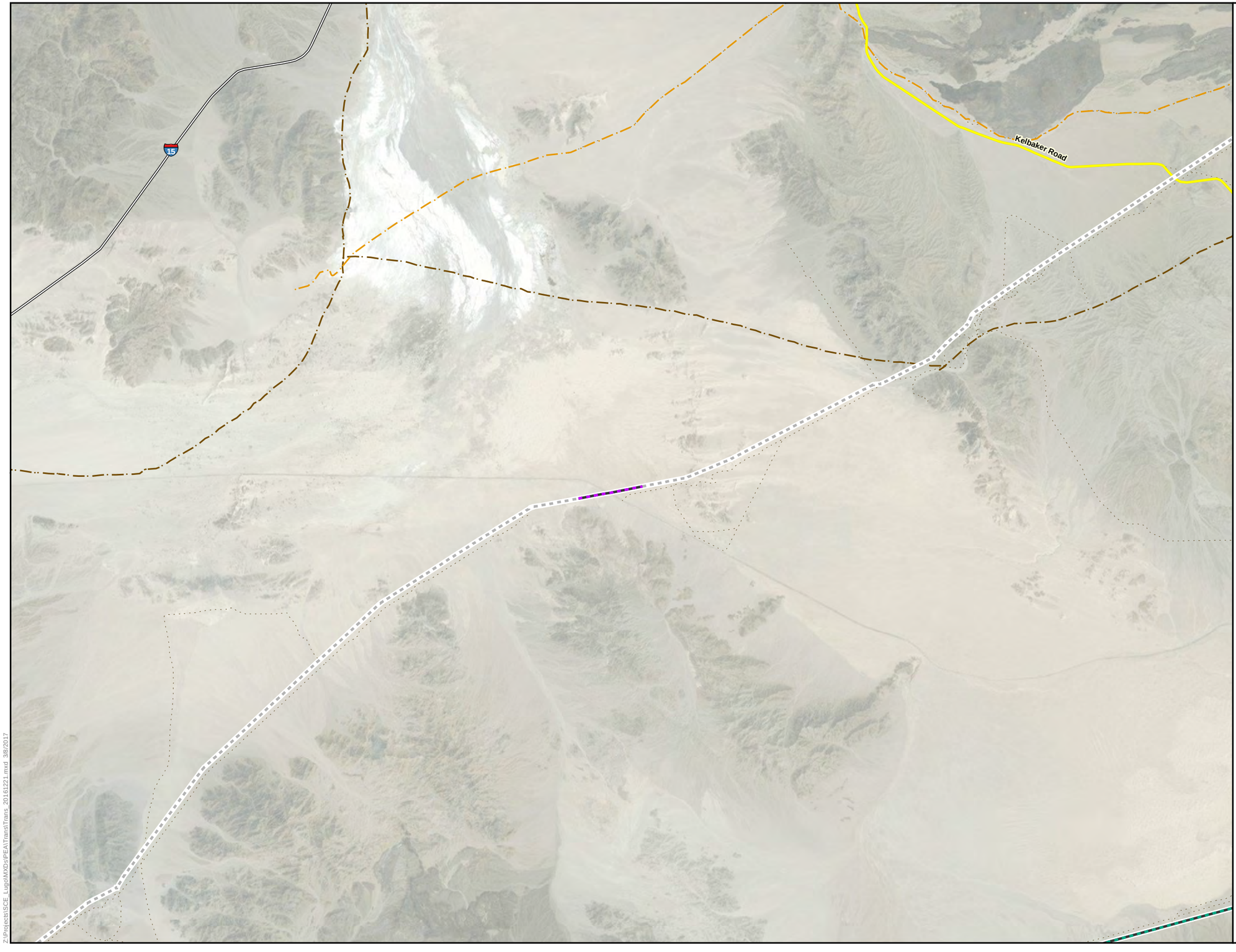

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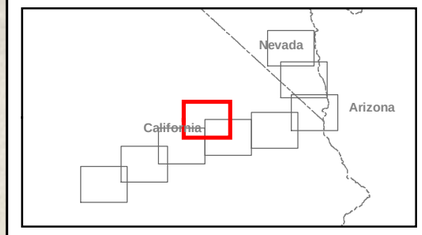

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Figure 4.16-1: Roadway Network in the Vicinity of the Proposed Project Map 5 of 9

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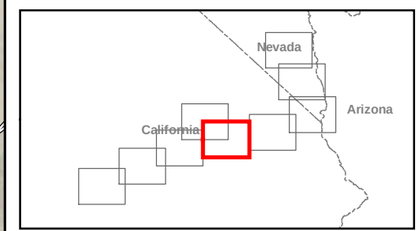

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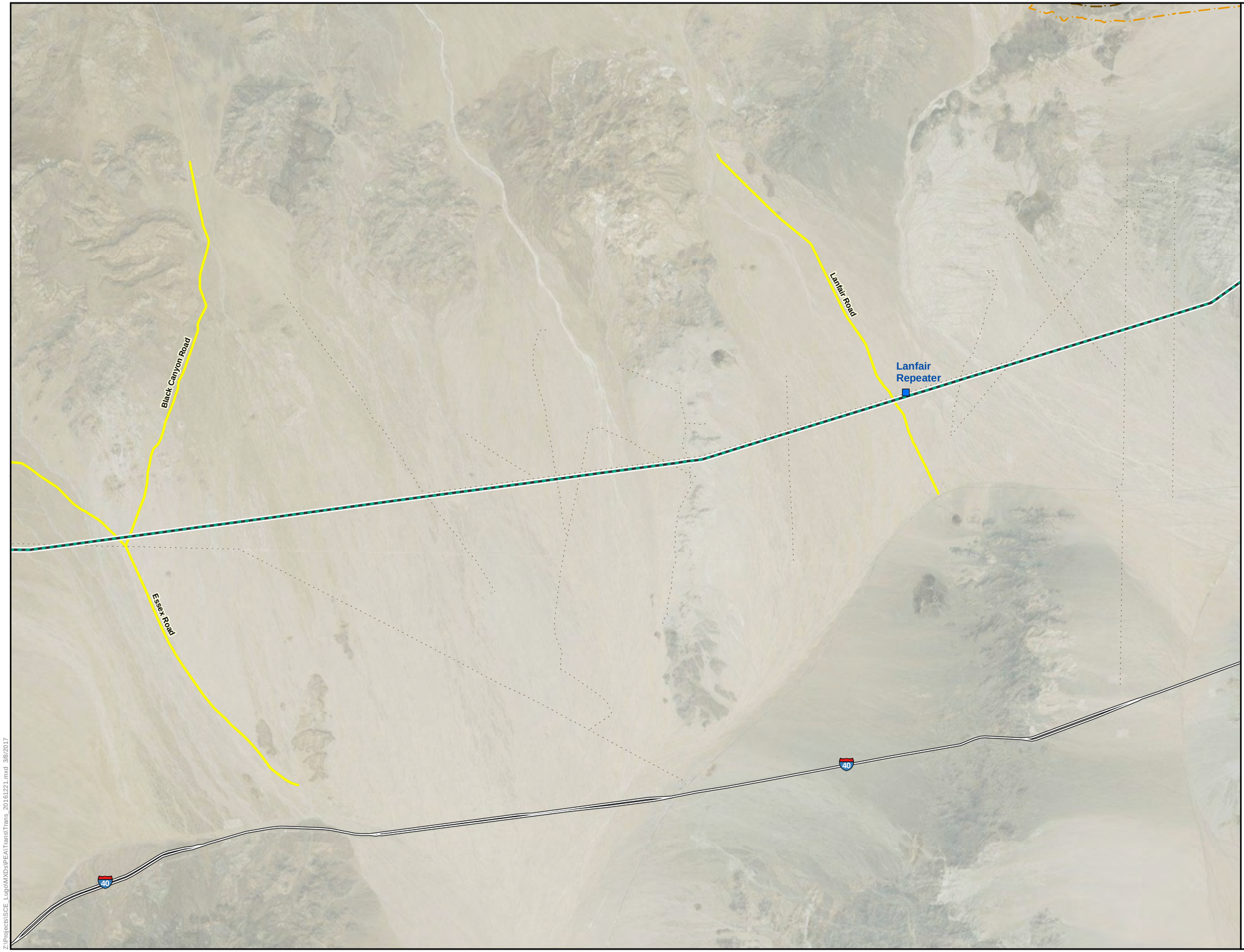
Figure 4.16-1: Roadway Network in the Vicinity of the Proposed Project Map 6 of 9

Eldorado-Lugo-Mohave Series Capacitor Project



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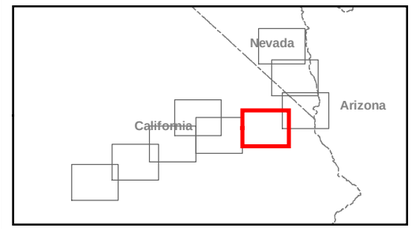

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Figure 4.16-1: Roadway Network in the Vicinity of the Proposed Project Map 7 of 9

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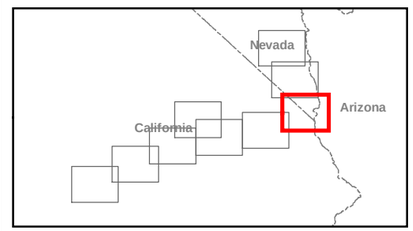

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Figure 4.16-1: Roadway Network in the Vicinity of the Proposed Project Map 8 of 9

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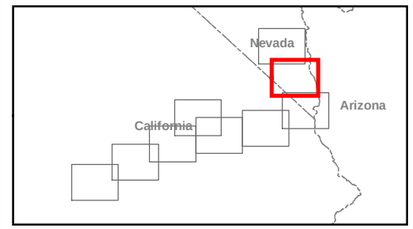

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Figure 4.16-1: Roadway Network in the Vicinity of the Proposed Project
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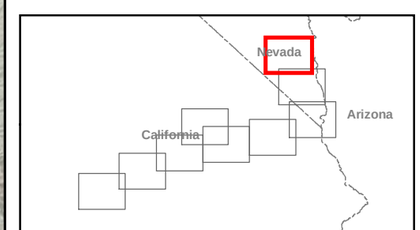

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Level of Service

The degree of congestion at an intersection is described by its LOS. LOS is based on traffic congestion and measured by dividing the traffic volume by roadway capacity. The resulting number, known as the volume-to-capacity (V/C) ratio, usually ranges from 0 to 1.0. The V/C ratings are divided into six LOS categories—A through F—representing conditions ranging from unrestricted traffic flow (A) to extreme traffic congestion (F). Table 4.16-2: Level of Service Definitions provides brief descriptions of the six LOS categories for signalized intersections (Intersection Capacity Utilization [ICU] methodology[4]) and for unsignalized intersections (Highway Capacity Manual methodology[5]).

Table 4.16-2: Level of Service Definitions

LOS	V/C Ratio or ICU (Signalized)	Control Delay in Seconds (Unsignalized)
A	0.00 – 0.60	0.0 – 10.0
B	0.61 – 0.70	10.1 – 15.0
C	0.71 – 0.80	15.1 – 25.0
D	0.81 – 0.90	25.1 – 35.0
E	0.91 – 1.00	35.1 – 50.0
F	1.01 or greater	50.1 or greater

Source: Transportation Research Board (2000)

A Traffic Study was prepared by Fehr and Peers to evaluate traffic conditions at major intersections identified as being particularly susceptible to construction-related traffic impacts. The location and LOS associated with each intersection are identified in Table 4.16-1: Roadway Network in the Vicinity of the Proposed Project. As described in the CMP for San Bernardino County, the peak-hour LOS performance standard in the Valley and Mountain Regions within the county is LOS D for all major arterials. The intersections evaluated within San Bernardino County are located within the Desert Region, which is required by the CMP to maintain LOS C at all times. Principal arterials within San Bernardino County are required to operate at LOS E. The Clark County Comprehensive Plan establishes LOS D as the performance standard for non-residential streets and LOS C as the performance standard for residential streets in buildout conditions. As described in the Traffic Study, the intersections evaluated currently operate within applicable LOS standards. The existing LOS and LOS during Proposed Project construction at

[4]The ICU methodology is a tool for measuring an intersection's capacity, which provides an output value that represents a V/C ratio.

[5] The Transportation Research Board's Highway Capacity Manual methodology is applicable to unsignalized and partially controlled intersections on major streets where there is a potential for crossing difficulty from the minor approaches due to heavy traffic volumes on the major approaches. This method uses a "gap acceptance" technique to predict driver delay.

these intersections are presented in Table 4.16-3: Level of Service at Traffic Study Intersections during Proposed Project Construction.

Regional Roadways

As shown in Figure 4.16-1: Roadway Network in the Vicinity of the Proposed Project, regional access to the Proposed Project and would be provided by I-40, I-15, SR-18, SR-173, SR-247, SR-163, and US-95. I-15 runs northeast-southwest approximately 2.7 miles northwest of Lugo Substation and would provide access to the substation and associated Proposed Project components. Construction vehicles and equipment would likely access Lugo Substation from I-15 at the Ranchero Road off-ramp and turn right on Escondido Avenue. I-15 typically provides four lanes of travel north and south of the Ranchero Road exit. Proposed Project components between Lugo Substation and Pisgah Substation would likely be accessed utilizing a network of local roads connected to SR-18 and SR-247.

Regional access to Pisgah Substation, the Newberry Springs Series Capacitor, and the Ludlow Series Capacitor would be provided by I-40, which runs east-west and crosses the Proposed Project approximately 0.3 mile south of Pisgah Substation. Vehicles would likely access Pisgah Substation from I-40 at the Hector Road exit and travel east on National Trails Highway to Pisgah Crater Road. The portions of I-40 in the vicinity of Pisgah Substation and the mid-line series capacitor[6] sites typically provide two lanes of east-west travel. Regional access between Pisgah Substation and Mohave Substation would likely be provided by a network of local roads connected to I-40 and US-95.

Regional access to Mohave Substation and Eldorado Substation would be provided primarily by US-95 and SR-163, which travel north-south and east-west, respectively. From I-40, Mohave Substation would likely be accessed by exiting at the River Road Cutoff and traveling north on Needles Highway/River Road. Construction vehicles utilizing SR-163 would access Mohave Substation by traveling south on Needles Highway until reaching Bruce Woodbury Drive, which travels eastward toward Mohave Substation. Regional access to Eldorado Substation would be provided by turning west on Eldorado Valley Drive from US-95. Proposed Project components between Mohave Substation and Eldorado Substation would be accessed utilizing US-95, which generally parallels the Eldorado-Mohave 500 kV Transmission Line in a north-south direction.

Local Roadways

The majority of the roadways spanned by the Eldorado-Lugo, Eldorado-Mohave, and Lugo-Mohave 500 kV Transmission Lines consist of local roadways that are unpaved.[7] The local roadways spanned by the Proposed Project are provided in Table 4.16-1: Roadway Network in the Vicinity of the Proposed Project.

[6] The Proposed Project includes construction of two new 500 kV mid-line series capacitors—the proposed Newberry Springs Series Capacitor and Ludlow Series Capacitor.

[7] Paved and unpaved roads are further identified in the geographic information system (GIS) map package compiled for the Proposed Project.

Table 4.16-3: Level of Service at Traffic Study Intersections during Proposed Project Construction

Intersection	LOS Standards[8]	Existing LOS without Proposed Project Construction	Existing LOS with Proposed Project Construction
Lugo Substation Intersection			
Escondido Avenue and Ranchero Road	C	B	B
Proposed Mid-Line Series Capacitors Intersections			
Hector Road and I-40 West Ramps	C	A	A-B
Hector Road and I-40 East Ramps	C	A	A
Mohave Substation			
Edison Way and Bruce Woodbury Drive	C	A	A-C
Eldorado Substation Intersection			
US-95 and Eldorado Valley Road	D	A-B	A-C

Fehr and Peers (2016)

[8] The LOS standards presented in the table were established by San Bernardino County and Clark County.

Lugo Substation

Within the vicinity of Lugo Substation, Whitehaven Street, Belmont Road, Prairie Trail, and Lookout Trail are the local public roads that travel east-west; and Foley Road, Escondido Avenue, and Fuente Avenue travel north-south. Escondido Avenue and Fuente Avenue would provide access to Lugo Substation.

Newberry Springs and Ludlow Series Capacitors

Within the vicinity of the Newberry Springs and Ludlow Series Capacitors, Pisgah Road, Pisgah Crater Road and several unnamed access roads travel northwest-southeast; and Pisgah Road and Power Lane travel northeast-southwest. Power Lane and Pisgah Road would likely be utilized to access Newberry Springs Capacitor; Pisgah Crater Road would be used to access Ludlow Series Capacitor.

Mohave Substation

Within the vicinity of Mohave Substation, Bruce Woodbury Drive and West Casino Drive are the local public roads that travel east-west; and Needles Highway, South Casino Drive, Thomas Edison Drive, and Edison Way travel north-south. Access to Mohave Substation is provided by an unpaved road, which is accessed by turning south from Bruce Woodbury Drive.

Eldorado Substation

Within the vicinity of Eldorado Substation, Eldorado Valley Drive is the primary local, private street that travels east-west; and McCullough Pass and several unnamed access roads travel north-south. Access to Eldorado Substation would be provided by Eldorado Valley Drive, which is accessed from McCullough Pass.

Truck Routes

Truck routes associated with the Proposed Project were determined based on the location of potential aggregate sources and water purveyors that would be utilized during construction. Caltrans-designated truck routes include I-40, I-15, and US-95. Trucks accessing Lugo Substation would utilize I-15 in conjunction with a network of local roads. Truck access to Pisgah Substation, the proposed Newberry Springs Series Capacitor, and the proposed Ludlow Series Capacitor would be provided by I-40. Trucks would likely utilize US-95, SR-163, and US-68 to access Mohave Substation. Major roadways that would be used to access Eldorado Substation include I-515 and US-95. Truck routes to and from the Barstow Fiber Optic Repeater would utilize SR-247/Barstow Road, SR-18, and/or I-15. Trucks accessing the Kelbaker and Lanfair Fiber Optic Repeaters would utilize I-40 and US-95. The previously described truck routes would also provide access to the discrepancy[9] work areas, as well as the pulling and tensioning locations.

[9] SCE has defined "discrepancies" 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. SCE has identified approximately 16 discrepancies along the Eldorado-Lugo, Eldorado-Mohave, and Lugo-Mohave 500 kV Transmission Lines where minor grading or relocation, replacement, or modification of

Parking

Existing parking areas are located at the Eldorado, Lugo, Mohave, and Pisgah Substations. In addition, park-and-ride facilities in the Proposed Project vicinity are located in Hesperia (the Bear Valley and Hesperia park-and-ride facilities) and north of Boulder City along I-515 (Flesta Henderson Park-and-Ride; and shared facilities at Nevada State College, Eldorado Casino, College of Southern Nevada Henderson Campus, and Nevada State College).

4.16.2.1 Rail Service

Commuter rail service in San Bernardino County is provided by Amtrak and Metrolink. Metrolink is operated by the Southern California Regional Rail Authority, which operates three lines throughout the Los Angeles metropolitan area that provide direct service to San Bernardino County. These three lines consist of the San Bernardino Line, the Riverside Line, and the Inland Empire Orange County Line. The nearest Metrolink station is the San Bernardino Station, which is located approximately 17 miles south of the existing Lugo-Mohave 500 kV Transmission Line.

Amtrak operates three trains that travel through San Bernardino County: the Southwest Chief, Sunset Limited, and Texas Eagle. The Southwest Chief is a daily train that travels between Los Angeles and Chicago and stops in the San Bernardino County cities of Victorville, Barstow, and Needles. The Sunset Limited and Texas Eagle trains stop in the San Bernardino County cities of Pomona, Ontario, and Palm Springs. The nearest Amtrak stations to the Proposed Project include the Victorville and Needles stations. The Victorville and Needles Amtrak stations are located approximately 12 miles north and 21.5 miles south of the Proposed Project, respectively.

The BNSF Railway is spanned by the existing Lugo-Mohave 500 kV Transmission Line twice. The discrepancy work area between Mile 96 and Mile 97 on the existing Eldorado-Lugo 500 kV Transmission Line would span the Union Pacific Railroad.

4.16.2.2 Airports

As described in the Section 4.8, Hazards and Hazardous Materials, the nearest public airport is Hesperia Airport, which is located approximately 0.9 mile northwest of the existing Lugo-Mohave 500 kV Transmission Line. Hesperia Airport is a privately owned, public use airport that has been operating since 1980. The Hesperia Airport runway is approximately 3,950 feet long, and the Proposed Project is not located within any safety zones specified in the Comprehensive Land Use Plan for Hesperia Airport.

Four additional airports were identified within 2 miles of the Proposed Project. These facilities include the Ludlow Airport, Laughlin/Bullhead International Airport, Kidwell Airport, and

transmission, subtransmission, or distribution facilities are needed to address California Public Utilities Commission (CPUC) General Order (G.O.) 95 and National Electrical Safety Code overhead clearance requirements.

Searchlight Airport. The Proposed Project is not located within any safety zones specified in available airport land use compatibility plans.

4.16.2.3 Bus Transit Service

Public transit in the vicinity of the Proposed Project is provided by Area Transport, Morongo Basin Transit Authority, Mountain Area Regional Transit Authority, Needles Area Transit, Omnitrans, Valley Transportation Services, Victor Valley Transit Authority (VVTA), and Foothill Transit Authority. With the exception of the Foothill Transit Authority, SANBAG provides financial support to these operators. The primary public transit operator in the vicinity of the Proposed Project is the VVTA, which provides bus service to the cities of Adelanto, Hesperia, and Victorville; the Town of Apple Valley; and other areas within San Bernardino County. The existing transmission lines not span any bus routes operated by the VVTA.

In addition, Greyhound offers regional and nationwide service to several communities in the San Bernardino County area. These communities include the cities of Baker, Barstow, Fontana, Needles, Redlands, San Bernardino, and Victorville. These stations offer connections to Los Angeles, Las Vegas, Phoenix, Tucson, and several other metropolitan areas.

Public mass transit services in Clark County are provided by the Regional Transportation Commission (RTC). The RTC is responsible for planning and implementing transit systems designed to transport large numbers of residents and tourists. According to the Nevada DOT, the Southern Nevada Transit Coalition (SNTC) is the only public transit provider in the vicinity of the Proposed Project in Clark County. The SNTC operates bus routes 777 and 888 in the vicinity of the existing Eldorado-Mohave 500 kV Transmission Line and Mohave Substation. Bus 777 operates 24 hours a day, seven days a week, and crosses the Proposed Project on Needles Highway, east of Mohave Substation. Route 777 travels north on Needles Highway and follows Bruce Woodbury Drive in an easterly direction until reaching Thomas Edison Drive. Route 888 operates seven days a week between 5:44 a.m. and 12:31 a.m. and utilizes the same roadways as Route 777 in the opposite direction.

4.16.2.4 Bikeways, Trails, and Pedestrian Facilities

Based on a review of SANBAG data, no existing bikeways are located in the immediate vicinity of the Proposed Project within California. The Proposed Project spans a planned Class III bikeway[10] along a segment of National Trails Highway south of Pisgah Substation. The next closest planned bikeway to the Proposed Project is a Class III bikeway located along Summit Valley Road, northeast of the existing Lugo-Mohave 500 kV Transmission Line. One planned Class II bikeway[11] is located approximately 0.2 mile northeast of the Lugo-Mohave 500 kV Transmission Line on Arrowhead Lake Road, and an additional Class II bikeway is proposed

[10] According to the San Bernardino County Non-Motorized Transportation Plan, a Class III bikeway is a generic term for any road, street, path, or way that in some manner is specifically designated for bicycle travel regardless of whether such facilities are designated for the exclusive use of bicycles, or are to be shared with other transportation modes.

[11] According to the San Bernardino County Non-Motorized Transportation Plan, a Class II bikeway is a portion of roadway that has been designated by striping, signaling, and pavement markings for the preferential or exclusive use of bicyclists.

south of the Lugo-Mohave 500 kV Transmission Line on Walkins Road. According to the RTC, no additional existing or planned bikeways are located in the immediate vicinity of Proposed Project components located in Clark County. No bicycle, pedestrian, or transit facilities have been designated on local roads immediately adjacent to Eldorado, Lugo, Mohave, and Pisgah Substations.

Amenities associated with the recreational facilities described in Section 4.15, Recreation include formal and informal hiking and all-terrain vehicle trails. There are numerous unnamed, local, public roads, service roads, and/or trails spanned by the existing transmission lines that consist primarily of rough, unpaved roads used for agricultural, forestry, or residential purposes.

4.16.3 Regulatory Setting

Federal, State, and local regulations were reviewed for applicability to the Proposed Project.

4.16.3.1 Federal

In addition to the federal regulations described in the following subsections, federal authorizations would also be required because a majority of the land within the Proposed Project area is under the jurisdiction of the BLM, NPS, BOR, and DoD.

Code of Federal Regulations

Title 14, Part 77, Section 13(2)(i) of the Code of Federal Regulations (CFR) requires an applicant to notify the Federal Aviation Administration (FAA) of the construction of structures within 20,000 feet of the nearest point of the nearest runway of an airport with at least one runway longer than 3,200 feet. Title 14, Section 77.17 of the CFR requires an applicant to submit a Notice of Proposed Construction or Alteration (FAA Form No. 7460-1) to the FAA for construction of structures greater than 200 feet or for construction within 20,000 feet of the nearest runway of an airport with at least one runway longer than 3,200 feet. Title 14, Sections 77.21, 77.23, and 77.25 of the CFR outline the criteria used by the FAA to determine whether an obstruction would create an air navigation conflict.

Hazardous Materials Transportation Act of 1974

The Hazardous Materials Transportation Act of 1974 directs the U.S. DOT to establish criteria and regulations regarding safe storage and transportation of hazardous materials. The U.S. DOT would primarily deal with the transportation of hazardous materials on roadways in the Proposed Project area. Section 4.8, Hazards and Hazardous Materials addresses the transportation of hazardous materials, types of materials defined as hazardous, and the treatment of hazardous materials associated with the Proposed Project.

4.16.3.2 State

California

California Public Utilities Commission General Order 131-D

Pursuant to CPUC G.O. 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 the California Environmental Quality Act (CEQA), the CPUC is the Lead Agency with respect to such Proposed Project elements within the State of California. Southern California Edison Company (SCE) is required to comply with G.O. 131-D and is seeking a Permit to Construct from the CPUC for the Proposed Project.

California Streets and Highways Code

The use of California State highways for purposes other than normal transportation may require written notification or an encroachment permit from Caltrans. Caltrans has jurisdiction over the State's highway system and is responsible for protecting the public and infrastructure. Section 660 of the California Streets and Highways Code allows Caltrans to issue encroachment permits authorizing activities related to the placement of encroachments within, under, or over State highway rights-of-way (ROWs). Caltrans reviews all requests from utility companies that plan to conduct activities within State highway ROWs. Caltrans's encroachment permits may include conditions or restrictions on the timeframe for construction activities performed within or above roadways that are under Caltrans's jurisdiction.

The California Streets and Highways Code also includes regulations for the care and protection of State and county highways, and requires permits for any load that exceeds Caltrans's weight, length, or width standards for public roadways. Sections 700 through 711 provide provisions that are specific to utility providers. Additionally, the California Streets and Highways Code outlines directions for cooperation with local agencies, guidelines for permits, and general provisions relating to State highways and Caltrans's jurisdiction.

California Joint Utility Traffic Control Manual

The California Joint Utility Traffic Control Manual (CJUTCM) provides guidelines for ensuring that the needs of all road users (e.g., motorists, bicyclists, and pedestrians) are met through the establishment of a temporary traffic control zone during highway construction, utility work, and maintenance operations. For any Proposed Project construction activities within a local public ROW, the use of a traffic control service and any lane closures would be conducted in accordance with applicable laws and permit conditions. These traffic control measures would be consistent with those published in the CJUTCM.

Nevada

Nevada Revised Statutes Section 704.865

Nevada Revised Statutes Section 704.865 provides that "A person, other than a local government, shall not commence to construct a utility facility in the State without first having obtained a permit therefor from the Commission. The replacement of an existing facility with a like facility, as determined by the Commission, does not constitute construction of a utility facility." The Public

Utilities Commission of Nevada is the Lead Agency for compliance with the Nevada Utility Environmental Protection Act.

Nevada Administrative Code

Nevada Administrative Code Chapter 408, Section 427 requires that non-transportation facilities along highway ROWs be authorized by the NDOT. Permission is granted via an occupancy permit. If the highway crosses private property, the property owner must also give consent.

Chapter 408, Section 4398 specifies design guidelines for aerial electrical or communications lines that traverse State ROWs. Aerial electrical lines must not be lower than 22 feet above the ground, and poles must not be located closer than 2 feet to the curb of the road. Guy wires for such facilities may not be attached to trees and must conform to requirements defined in the National Electrical Safety Code, unless the district engineer overrides these requirements. In addition, aerial crossings of the wire over the road must be as close to 90 degrees as possible.

4.16.3.3 Local

The CPUC has sole and exclusive jurisdiction over the siting and design of the Proposed Project components located in the State of California. Pursuant to CPUC G.O. 131-D, Section XIV.B, "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and cities' regulations are not applicable as the county and cities do not have jurisdiction over the Proposed Project. Accordingly, the following discussion of local regulations is provided for informational purposes only. The Proposed Project is subject to local regulations in the State of Nevada.

California

County of San Bernardino

County of San Bernardino 2007 General Plan

The Circulation and Infrastructure Element within the County of San Bernardino 2007 General Plan contains goals and policies to ensure the timely development of public facilities, achieve adequate facility and service standards, and distribute new public facilities and services that increase and enhance the community's quality of life. However, the Circulation and Infrastructure Element does not contain any specific goals or policies that are relevant to the Proposed Project.

Congestion Management Program for San Bernardino County

The 2007 CMP for San Bernardino County was developed by SANBAG. With the exception of several roadway segments that were designated LOS F in 2001, all CMP segments are required to operate at LOS E or better. The 2007 CMP for San Bernardino County does not contain any specific goals or policies that are relevant to the Proposed Project.

City of Hesperia

City of Hesperia General Plan 2010

The Circulation Element of the City of Hesperia General Plan 2010 contains the following policy related to transportation and traffic that is relevant to the Proposed Project

- Policy CI-1.14: Coordinate with San Bernardino County Flood Control District and Southern California Edison Company to promote utilization of easements for the trail system.

Nevada

Clark County

Clark County Comprehensive Plan

The Clark County Comprehensive Plan does not contain any specific goals or policies that are relevant to the Proposed Project.

South Clark County Land Use Plan

The South Clark County Land Use Plan does not contain any specific goals or policies that are relevant to the Proposed Project.

Laughlin Land Use Plan

The Laughlin Land Use Plan contains the following policy that is relevant to the Proposed Project:

- Policy 28.7: Protect and maintain turning sight lines at all intersections.

City of Boulder City

City of Boulder City Master Plan

The City of Boulder City Master Plan does not contain any specific goals or policies that are relevant to the Proposed Project.

4.16.4 Significance Criteria

The significance criteria for assessing the impacts to transportation and traffic are derived from the CEQA Environmental Checklist.[12] According to the CEQA Checklist, a project causes a potentially significant impact if it would:

- Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit
- Conflict with an applicable congestion management program, including LOS standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)
- Result in inadequate emergency access
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities

4.16.5 Impact Analysis

4.16.5.1 Would the project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Construction

Less-Than-Significant Impact. Construction of the Proposed Project would occur over approximately 15 months. Proposed Project-related traffic would be limited to worker commutes

[12] CEQA is a statute that requires State of California and local agencies in California to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible. There is no CEQA equivalent for the State of Nevada. Therefore, in the absence of such regulations, the Proposed Project (including components in Nevada) has been evaluated against the CEQA significance criteria. Where specific Nevada environmental regulations exist, a discussion has been included in the impact analysis for the Proposed Project.

and the transport of supplies and equipment to and from construction areas and material supply sources. The total daily number of vehicle trips is estimated to be between 18 and 518, or an average of 238 trips, depending on the phase of construction and the activities within that phase.

Construction personnel commuting to the Proposed Project would typically drive to the work site at the beginning of the day and leave at the end of the day, with fewer people traveling to and from work areas throughout the day. SCE anticipates that 15 to 346 (or an average of 159) construction personnel would be working at various Proposed Project components on any given day. This would result in an average of approximately 159 personal vehicle trips per day to and from the Proposed Project. As described in Chapter 3, Project Description, SCE anticipates that crews would work concurrently whenever possible; however, the estimated deployment of crewmembers would vary depending on factors such as material availability, resource availability, and construction scheduling.

Although a maximum of 518 vehicle trips could occur during construction of the Proposed Project, crews would be spread out and assigned to several different Proposed Project components on any given day. The maximum number of construction personnel deployed at any single Proposed Project component would be 154 workers needed for modification of the existing 500 kV transmission lines. In addition, a maximum of approximately 81 truck trips could be generated per day for the purposes of equipment and material hauling, as well as providing water to sites, etc., for this component of the Proposed Project. Due to the linear nature of the existing transmission lines, the addition of up to 235 worker vehicle and truck trips working along the transmission lines is not anticipated to disrupt the performance of the circulation system. In addition, SCE would encourage carpooling to and from parking areas and work areas to reduce personal vehicle traffic to the greatest extent possible. Work crews would generally leave their personal vehicles at designated locations (e.g., park-and-ride facilities, material staging yards, and substations) and would proceed to work areas in crew trucks. Adequate parking areas are available throughout the Proposed Project vicinity at the existing substations, at staging yards, as well as at areas along the ROWs. In addition, approximately 40 additional parking spaces would be provided at the laydown areas adjacent to the proposed mid-line series capacitors located northeast of Pisgah Substation.

Some traffic disruptions may occur when trucks enter or exit the work areas, as trucks slowly pull into or out of the construction access routes or work areas. Traffic controls in the form of signs, cones, and flaggers would be in place, in accordance with permit requirements and/or the CJUTCM. Temporary lane closures may be necessary in areas where existing or proposed structures are located adjacent to roadways and during conductor/wire stringing operations. Construction activities may not require lane closures in areas where road shoulders are present. Traffic controls would be in place during all construction activities requiring temporary lane closures.

SCE or SCE’s contractor would obtain encroachment permits where necessary from State and local agencies and conduct temporary or partial lane closures if needed in accordance with permit requirements and/or the CJUTCM. SCE would perform work according to these requirements, which include protection of traffic through the use of guarding, warning signs, flaggers, lights, and barricades; the minimization of traffic interference; and cleaning up the roadway upon completion of work. Because these closures would be temporary, short in duration

(potentially lasting several hours at a time), and coordinated with local agencies through the permitting process, the Proposed Project would not cause significant impacts to transportation and traffic in the area.

As previously described, major intersections in the vicinity of Eldorado, Lugo, Mohave, and Pisgah Substations were evaluated in a Traffic Study based on their susceptibility to increased traffic flow. The results of the Traffic Study indicated that the addition of construction-related trips to existing traffic conditions would not decrease the LOS in the vicinity of these locations. Therefore, the performance of the circulation system in the vicinity of the Proposed Project locations that are most susceptible to construction-related traffic impacts would not be disrupted, and impacts would be less than significant. The Traffic Study is discussed further in the response to Question 4.16.5.2.

The Proposed Project is located in the vicinity of SNTC bus routes 777 and 888. Bus routes 777 and 888 share the same roadways and cross the Proposed Project on Needles Highway and Bruce Woodbury Drive, in the vicinity of Mohave Substation. During construction of the Proposed Project, temporary lane closures could result in delays of service for these bus routes. However, SCE or SCE's contractor would coordinate in advance with the applicable transportation agencies to avoid or minimize interruptions. As a result, impacts would be less than significant.

Temporary construction activities may intermittently reduce, disrupt, or temporarily eliminate access to portions of pedestrian sidewalks, bikeways, and trails. However, impacts to bikeways and sidewalks affected by temporary road or lane closures would be addressed within the encroachment permits obtained for the Proposed Project. As previously discussed, the Proposed Project would span the BNSF Railway tracks in two locations along the existing Lugo-Mohave 500 kV Transmission Line. The discrepancy work area between Mile 96 and Mile 97 on the existing Eldorado-Lugo 500 kV Transmission Line would span the Union Pacific Railroad. However, SCE would obtain the required pipeline/wire line crossing permits from the BNSF Railway and Union Pacific Railroad prior to the initiation of construction activities in the vicinity of railroad facilities. Therefore, the Proposed Project would not result in conflicts with relevant circulation plans or policies established to ensure the performance of the circulation system, and impacts would be less than significant.

Operation

Less-Than-Significant Impact. Operation and Maintenance (O&M) activities associated with the Proposed Project would be similar to those currently performed by SCE for existing facilities, and generally include repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, repairing or replacing poles and towers, tree trimming, brush and weed control, and access road maintenance, among other things. O&M practices would also include routine inspections and emergency repair within substations and ROWs, which would require the use of vehicles and equipment. SCE also inspects the transmission and subtransmission overhead facilities in a manner consistent with CPUC G.O. 165, which requires

observation a minimum of once per year, but inspection typically occurs more frequently to ensure system reliability. Following construction of the mid-line series capacitors, additional O&M activities would consist of monthly and annual inspections, as well as equipment testing and maintenance of emergency generators, ranging from once a year to once every five years. Additional testing, inspections, and maintenance of the building, site, generator, and fuel tank would also be required at the new fiber optic repeater facilities every six months to once a year.

O&M associated with the mid-line series capacitor sites and fiber optic repeater sites would result in a minor increase in vehicle trips when compared to existing O&M activities. However, O&M of these facilities would be conducted intermittently and consist primarily of monthly and annual inspections as well as equipment testing. Based on the limited frequency and duration of these activities, O&M of the mid-line series capacitor sites and fiber optic repeater sites would generate a negligible number of vehicle trips. Therefore, O&M would not conflict with applicable traffic plans and policies, and a less-than significant impact would occur.

4.16.5.2 Would the project conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Construction

Less-Than-Significant Impact. The CMP for San Bernardino County requires that LOS E be maintained for all CMP roadway segments. Roadways evaluated in the CMP for San Bernardino County include those designated as principal arterials, roadways that lead to or from a freeway interchange, or roadways that provide direct links between freeways and State highways. The majority of the roadways in the Proposed Project vicinity do not fall within these criteria and are not considered a part of the CMP roadway system. In addition, the Proposed Project is not located in the vicinity of CMP roadway segments designated as LOS F.

The Clark County Comprehensive Plan establishes LOS D as the performance standard for non-residential streets and LOS C as the performance standard for residential streets in buildout conditions. As described in the Traffic Study, the intersections evaluated currently operate within applicable LOS standards. The Traffic Study evaluated major intersections associated with the Proposed Project that would likely be susceptible to construction-related traffic impacts. These intersections exist in the vicinity of Eldorado, Lugo, Mohave, and Pisgah Substations. The existing peak-hour LOS at these intersections was determined to be LOS B or better.

The Traffic Study estimated the number of construction-related trips, the direction of construction-related traffic, and the potential roadway segments utilized by construction vehicles to evaluate potential impacts of construction-related traffic at each intersection. The Traffic Study assumed that all workers would drive alone to each substation site during the morning peak hour and depart during the evening peak hour. In addition, the Traffic Study incorporated the average and worst-case delays that occur at each intersection to conservatively evaluate the LOS. The results of the Traffic Study indicated that the intersections most susceptible to construction-related traffic impacts would operate at LOS C or better during construction. The detailed LOS analysis is provided in Appendix L: Traffic Study. The existing LOS and LOS

during Proposed Project construction at these intersections are presented in Table 4.16-3: Level of Service at Traffic Study Intersections during Proposed Project Construction.

Construction activities would occur over approximately 15 months and small increases in traffic resulting from personal vehicle trips and truck trips would be periodic and temporary. Crews would be spread out throughout the Proposed Project alignment and distributed between different Proposed Project components on any given day, which would prevent traffic congestion at any one location. Vehicle access would primarily occur along existing local roads, access roads, and service roads within existing or to-be-acquired franchise areas and ROWs. In addition, vehicle trips generated by construction personnel would generally occur with workers arriving at the site in the morning and leaving the site at the end of the day, with limited worker-related trips to or from the work site during the course of the day. As described in Applicant-Proposed Measure (APM) APM-AIR-05 within Section 4.3, Air Quality, SCE would encourage carpooling and/or the use of public transportation to further reduce the potential number of daily worker-related vehicle trips. Therefore, roadways would be subjected to negligible increases in traffic and applicable CMP or LOS standards would not be exceeded. As presented in Table 4.16-3: Level of Service at Traffic Study Intersections during Proposed Project Construction, the LOS standards for roadways nearest major Proposed Project components generating the most Proposed Project traffic would not be exceeded during construction of the Proposed Project. Based on the dispersal of construction crews over a largely undeveloped region during construction, the existing traffic volumes in the Proposed Project vicinity, and the relatively minor number vehicle trips associated with the Proposed Project in any given location, impacts would be less than significant.

Operation

No Impact. As previously described, O&M activities associated with the Proposed Project would be similar to those currently performed for the existing facilities, with additional O&M activities associated with the proposed mid-line series capacitors and fiber optic repeater facilities. O&M associated with the mid-line series capacitor sites and fiber optic repeater sites would result in a minor increase in vehicle trips when compared to existing O&M activities. However, O&M of these facilities would be conducted intermittently and would consist primarily of monthly and annual inspections and equipment testing. Based on the limited frequency and duration of these activities, O&M of the mid-line series capacitor sites and fiber optic repeater sites would generate a negligible number of vehicle trips and would not affect LOS standards on major roadways. As a result, the Proposed Project would not conflict with the applicable CMP, and there would be no impact.

4.16.5.3 Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

Construction

Less-Than-Significant Impact. As described in Chapter 3, Proposed Description, helicopters may be used during transportation of construction workers, delivery of equipment and materials to structure sites, structure placement, hardware installation, marker ball installation (if applicable), and optical ground wire stringing operations. It is anticipated that helicopter use would occur over approximately 222 days. Helicopters would depart from local area airports. SCE currently implements and would continue to implement an operating plan for helicopter use, in accordance with Title 14, Part 77 of the CFR, and in coordination with and to be approved by the local FAA Flight Standards District Office. Therefore, helicopter use would be in accordance with all applicable federal, State, and local aviation rules and regulations, and would not create any new hazards. As a result, any potential impacts to air traffic patterns would be less than significant.

The Proposed Project is not located adjacent to a public airport. The nearest public airport is Hesperia Airport, which is located approximately 0.9 mile northwest of the Lugo-Mohave 500 kV Transmission Line. Construction of the Proposed Project would not include the installation of components that are tall enough or located close enough to the airport to impact the operation of air traffic patterns. In addition, landing zones required for helicopter use would be strategically placed in the Proposed Project area to avoid impacts to air traffic patterns. As such, construction of the Proposed Project would not result in impacts that are related to a change in air traffic patterns.

Although no structures above 200 feet are currently proposed to be installed, the final design of the Proposed Project may require SCE to file FAA notifications for Proposed Project structures, as required. With respect to Proposed Project structures, the FAA would conduct its own analysis and may recommend no changes to the design of the proposed structures; or recommend redesigning the proposed structures to reduce the height of such structures; or recommend marking 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 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; therefore, such notifications would be filed upon completion of final engineering and before construction commences. SCE would consult with the FAA and consider recommendations, to the extent feasible. Typical recommendations include, but are not limited to, the installation of marker balls on spans (catenaries) 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; however, marking or lighting may be recommended for spans and structures that are less than 200 feet above ground level, but located within close proximity to an airport or other high-density aviation environment. Section 3.5.2, Poles/Towers in Chapter 3, Project Description provides more information regarding associated equipment specifications for marking and lighting. Because no structures are proposed that would exceed 200 feet, and new structures and towers proposed to be raised to correct clearance deficiencies are not located

in the vicinity of the airport, the Proposed Project would not change air traffic patterns. Therefore, the impact would be less than significant.

Operation

No Impact. As previously described, O&M activities associated with the Proposed Project would be similar to those currently performed for the existing facilities, with additional O&M activities associated with the proposed mid-line series capacitors and fiber optic repeater facilities. As with construction, O&M of the Proposed Project would not result in an increase in air traffic, nor would it include design features that would impact air traffic patterns. SCE would continue to inspect the transmission and subtransmission overhead facilities in a manner consistent with CPUC G.O. 165, which requires at least an annual inspection via ground and/or aerial (helicopter) observation, but the inspections can occur more frequently based on field conditions and system reliability. For aerial inspections, SCE would continue to consult with the FAA regarding helicopter flight plans that would take place. Therefore, O&M requiring helicopter inspections would not change following the construction of the Proposed Project, and no impact would occur.

4.16.5.4 Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Construction

Less-Than-Significant Impact. Construction of the Proposed Project would not necessitate any permanent modifications to existing public roadways. As previously discussed, temporary road closures may be necessary during construction of the Proposed Project. As shown in Figure 4.16-1: Roadway Network in the Vicinity of the Proposed Project and in Table 4.16-1: Roadway Network in the Vicinity of the Proposed Project, the Proposed Project is situated primarily within an undeveloped desert landscape with minimal volumes of traffic reported on roadways in the Proposed Project vicinity. Temporary road closures and encroachment into public roadways could increase hazards if appropriate safety measures are not in place (e.g., proper signage, orange cones, and flaggers). However, SCE would coordinate with local agencies and/or Caltrans, and would employ traffic control measures described within required encroachment permits and the CJUTCM. SCE would also develop and implement traffic control plans in accordance with encroachment permits. Therefore, potential hazards resulting from road closures would be minimal. In addition, construction of the Proposed Project would not conflict with any agricultural uses or farm equipment. Therefore, any potential impacts would be less than significant.

Operation

No Impact. As previously described, O&M activities associated with the Proposed Project would be similar to those currently performed for the existing facilities, with additional O&M activities associated with the proposed mid-line series capacitors and fiber optic repeater

facilities. In addition, SCE would continue to employ traffic control measures to reduce the risk of hazards during O&M. Therefore, O&M of the Proposed Project would not increase hazards caused by a design feature or incompatible use, and there would be no impact.

4.16.5.5 Would the project result in inadequate emergency access?

Construction

Less-Than-Significant-Impact. As previously discussed, temporary lane closures may be necessary during construction activities to ensure the safety of the public and workers within public areas and roadways. In addition, some roads may be temporarily limited to one-way traffic, which would require the implementation of one-way traffic controls. However, SCE would obtain the required encroachment permits from the State and local agencies, which would include coordination with local emergency service providers, and would implement traffic control measures accordingly. As there are no fire or police stations or medical facilities with the immediate Proposed Project vicinity, the Proposed Project would not have direct impacts to access to emergency facilities. Because emergency access along roadways in the Proposed Project vicinity would be maintained, any potential impacts during construction would be less than significant.

Operation

No Impact. As previously described, O&M activities associated with the Proposed Project would be similar to those currently performed for the existing facilities, with additional O&M activities associated with the proposed mid-line series capacitors and fiber optic repeater facilities. In locations where O&M activities span a road or require lane closures, SCE would continue to implement appropriate traffic controls and coordinate with local emergency service providers to avoid impacts to emergency access routes. Therefore, O&M of the Proposed Project would not affect emergency access in the area, and there would be no impact.

4.16.5.6 Would the project conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

Construction

Less-Than-Significant Impact. As previously described, two existing bus routes along Needles Highway are spanned by the Proposed Project in the vicinity of Mohave Substation. In addition, the Proposed Project would span several unpaved roads, unnamed trails, and service roads that may be used by cyclists and pedestrians. Therefore, temporary construction activities may intermittently reduce, disrupt, or temporarily restrict access to portions of unnamed trails, bike lanes, service roads, bus stops/shelters, and pedestrian facilities during construction of the Proposed Project. Where the Proposed Project would span roads, guard structures or staged construction equipment would be used to minimize the potential disruptions to traffic. In some locations, flaggers may be used instead of guard structures to temporarily halt traffic during installation and removal activities. In addition, construction would generally occur within existing utility corridors and would not involve any activities that conflict with transportation policies, plans, or programs. Based on the implementation of applicable permit conditions and

the short-term nature of construction activities requiring lane closures, impacts to public transit, bicycle, or pedestrian facilities would be less than significant.

Operation

No Impact. As previously described, O&M activities associated with the Proposed Project would be similar to those currently performed for the existing facilities, with additional O&M activities associated with the proposed mid-line series capacitors and fiber optic repeater facilities. If any lane or road closures that may affect sidewalks or bikeways are necessary to maintain new and existing facilities, SCE would use appropriate traffic controls and signage to ensure safety of public transit users, bicycles, and pedestrian facilities. Therefore, O&M associated with the Proposed Project would not conflict with any local or regional policies, plans, or programs supporting alternative transportation (e.g., public transit, bicycle, or pedestrian facilities), and no impact would occur.

4.16.6 Applicant-Proposed Measures

Because no impacts to transportation and traffic would occur as a result of the Proposed Project, no avoidance or minimization measures are proposed.

4.16.7 Mid-Line Series Capacitor Site Alternatives

Consistent with Section 15126.6(d) of the CEQA Guidelines, this PEA analyzes alternatives to the Proposed Project. Section 5.2, Description of Project Alternatives and Impact Analysis, identifies and compares the construction and operation of SCE's Proposed Project with its alternatives, including alternatives that did not meet key Proposed Project objectives and were not carried forward. The alternatives retained for a full evaluation—alternative sites for the Newberry Springs Series Capacitor and the Ludlow Series Capacitor—are analyzed in relation to transportation and traffic in the following discussion.

The alternative site for the Newberry Springs Series Capacitor is an approximately 3.1-acre site located approximately 930 feet to the northeast of its proposed location along the Eldorado-Lugo 500 kV Transmission Line. The alternative site for the Ludlow Series Capacitor is an approximately 3.1-acre site located approximately 970 feet to the southwest of its proposed location along the Lugo-Mohave 500 kV Transmission Line.

The existing roadway network and transportation infrastructure in the vicinity of the alternative Newberry Springs Series Capacitor site are generally the same as the proposed mid-line series capacitor site. The proposed Newberry Springs Series Capacitor site is located adjacent and to the south of the BNSF Railway, and the alternative site is located adjacent and to the north of the BNSF Railway. However, vehicles and equipment would need to cross the BNSF railway during construction at the alternative Newberry Springs Series Capacitor site. Conversely, construction at the proposed Newberry Springs Series Capacitor site would occur south of the BNSF railway and adjacent to Pisgah Substation. Therefore, Pisgah Substation could be used for parking and staging equipment and BNSF railway crossings would not be required during construction at the

proposed mid-line series capacitor site. Therefore, impacts related to transportation and traffic during construction and O&M of the alternative Newberry Springs Series Capacitor site would be greater than impacts resulting from construction and O&M of the proposed mid-line series capacitor site.

The existing roadway network and transportation infrastructure in the vicinity of the alternative Ludlow Series Capacitor site are generally the same as the proposed mid-line series capacitor site. The alternative site is located approximately 0.2 mile northeast of the BNSF Railway, and the proposed mid-line series capacitor site is located approximately 0.6 mile northeast of the BNSF Railway. Construction and O&M of the proposed Ludlow Series Capacitor and the alternative Ludlow Series Capacitor site would result in similar impacts.

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4.17 Utilities and Service Systems

This section describes the utilities and service systems in the area of the Eldorado-Lugo-Mohave Series Capacitor Project (Proposed Project[1]), as well as the potential impacts and alternatives.

This analysis describes the existing local water resources, wastewater facilities, waste management facilities, and other utilities in the Proposed Project area. Utility and service system information was obtained from the general plans and urban water management plans (UWMPs) for the County of San Bernardino, the City of Hesperia, Clark County, and the City of Boulder City. Internet searches were also conducted to gather information regarding utility service providers in the vicinity of the Proposed Project.

4.17.1 Environmental Setting

The Proposed Project is located in California and Nevada, within the Mojave Basin and Range (Mojave). Federal lands constitute a majority of the land area in the Mojave, including lands under the jurisdiction of the Bureau of Land Management (BLM), National Park Service (NPS), Bureau of Reclamation (BOR), and Department of Defense (DoD). The Proposed Project would modify three existing transmission lines that extend northeast from Lugo Substation (located in San Bernardino County, California) to Eldorado Substation (located in the City of Boulder City, Nevada) and Mohave Substation (located in Clark County, Nevada), and from Mohave Substation northwest to Eldorado Substation. Portions of the Proposed Project would also cross the City of Hesperia, California, the unincorporated community of Lucerne Valley in California, as well as the unincorporated communities of Searchlight and Laughlin in Nevada.

4.17.1.1 Water Supply and Treatment

California

San Bernardino County

San Bernardino County's domestic water sources are supplied through both local and imported water sources. For the entire county, it is estimated that, on average, 85 percent of the domestic water is supplied by local sources and 15 percent is imported water purchased from other sources. Imported water is primarily purchased from the Metropolitan Water District of Southern California (MWD) and the State Water Project (also known as the California Aqueduct). The MWD stores fresh water for use in Los Angeles, Orange, Ventura, Riverside, San Bernardino, and San Diego Counties in four major reservoirs. The major reservoirs maintained by MWD have a total storage capacity of approximately 347 billion gallons. While the MWD distributes water through local pipelines, there are also three State Water Project contractors and one subcontractor in the county. The Crestline-Lake Arrowhead Water Agency, the Mojave Water Agency, and the San Bernardino Valley Municipal Water District (SBVMWD) are the three contractors, and the Inland Empire Utilities Agency (IEUA) is a member agency or subcontractor of MWD. The Crestline-Lake Arrowhead Water Agency provides supplemental water to a

[1] The term "Proposed Project" is inclusive of all components of the Eldorado-Lugo-Mohave Series Capacitor Project. Where the discussion in this section focuses on a particular component, that component is called out by its individual work area (e.g., "Ludlow Series Capacitor").

portion of the San Bernardino Mountains, including approximately 25,000 acres of United States Forest Service land. The Mojave Water Agency serves approximately 4,900 square miles in San Bernardino County, including the nearby City of Barstow, the unincorporated community of Lucerne Valley, and the Victor Valley region. The SBVMWD covers approximately 353 square miles in southwestern San Bernardino County. It spans the eastern two-thirds of the San Bernardino Valley, the Crafton Hills, and a portion of the Yucaipa Valley and includes the cities and communities of San Bernardino, Colton, Loma Linda, Redlands, Rialto, Bloomington, Highland, East Highland, Mentone, Grand Terrace, and Yucaipa. The IEUA serves a 242 square mile area in the southwest portion of San Bernardino County. There are also approximately 400 small source providers, including county service agencies and districts, private mutual water companies, and single-use water sources.

The following potential water purveyors would support construction activities near Lugo Substation:

- City of Hesperia Water District (approximately 65-million-gallon capacity)
- Phelan Piñon Hills Community Service District (approximately 1.4-billion-gallon capacity)
- City of Victorville Water District (approximately 11.4-billion-gallon capacity)
- San Bernardino County Service Area 42 – Oro Grande (approximately 246,000-gallon capacity).

The Golden State Water Company (approximately 1.7-billion-gallon capacity) in the City of Barstow would potentially provide water for construction activities conducted in the vicinity of Pisgah Substation.

City of Hesperia

Hesperia's water supply is provided by the Hesperia Water District. The water supply is obtained entirely from groundwater located in the Alto Sub-Basin of the Mojave River Watershed and groundwater aquifer. The city's municipal water system extracts all of its water supply from the underground aquifers through 18 active groundwater wells located throughout the city. Water is conveyed from the wells to the consumers via a distribution system with pipe sizes ranging between 4 and 24 inches in diameter.[2] In December 2009, the city maintained 14 storage reservoirs within the distribution system with a total capacity of approximately 64.5 million gallons.

Nevada

Clark County

Water in southern Nevada is managed by the Southern Nevada Water Authority (SNWA), a cooperative, not-for-profit agency charged with managing the region's water resources. The

[2] The city's ongoing water line replacement program has removed most of the smaller water lines and replaced them with lines that are 8 inches or larger.

SNWA is managed by the following seven agencies:

- Clark County Water Reclamation District (CCWRD)
- Big Bend Water District
- City of Boulder City
- City of Henderson
- City of Las Vegas
- City of North Las Vegas
- Las Vegas Valley Water District

As the wholesale water provider for these agencies, the SNWA is responsible for water treatment and delivery, as well as acquiring and managing long-term water resources for southern Nevada. Approximately 90 percent of southern Nevada's water comes from the Colorado River and is stored in Lake Mead, which has a storage capacity of approximately 9.4 trillion gallons. Other sources include imported water, flood control surplus, permitted groundwater rights in the Las Vegas Valley, water reuse, and other temporary resources.[3]

EPCOR Water (approximately 9.8-million-gallon capacity) would support construction near Mohave Substation. Construction near Eldorado Substation would utilize water from the City of Henderson Utility Services (approximately 97-billion-gallon capacity), Las Vegas Valley Water District, and the Utilities Department of North Las Vegas (approximately 11.4-million-gallon capacity).

City of Boulder City

The water supply to Boulder City is currently both untreated water and potable water from the SNWA, untreated water from United States (U.S.) Bureau of Reclamation, and partial reuse of sewage effluent. The SNWA provides the city's total potable water supply. Water is supplied from Lake Mead on the Colorado River. The city's water system has six water storage facilities with a combined storage of approximately 31.5 million gallons.

4.17.1.2 Sewer

California

San Bernardino County

In the unincorporated areas of San Bernardino County, wastewater collection is largely provided by septic systems. Near the City of Hesperia, wastewater treatment is provided by the Victor Valley Wastewater Reclamation Authority (VVWRA), which operates as a Joint Powers Authority and serves San Bernardino County, as well as the City of Hesperia, the Town of Apple Valley, and the City of Victorville. The VVWRA is responsible for treating approximately 13.5

[3] "Temporary resources" are defined as banked resources. As part of its overall water resource strategy, SNWA reserves water in years when Nevada's Colorado River allocation exceeds the community's demands. These resources are "banked" for future use in the form of storage credits. The volume of storage credits can change over time based on continued storage and use of supplies.

million gallons per day of wastewater. The VVWRA is also planning two subregional reclamation plants to facilitate the use of reclaimed wastewater.

City of Hesperia

The Sewer Division of the Hesperia Water District ensures the delivery and continuous unobstructed flow of wastewater. The city's sewer collection lines discharge to the VVWRA's regional plant located north of the city near the unincorporated community of Oro Grande. The quality of the effluent must meet the requirements of the VVWRA.

Nevada

Clark County

The CCWRD is responsible for wastewater treatment and reclamation in all of the unincorporated areas of Clark County, including the communities of Blue Diamond, Indian Springs, Laughlin, Searchlight, and Moapa Valley. Incorporated cities within the Las Vegas Valley handle wastewater within their individual jurisdictions. Approximately 150 million gallons of wastewater are collected and transported each day through pipelines to the Clark County Water Reclamation Treatment Facility. The treated effluent is either reused or released to the Las Vegas Wash, where it eventually flows back to the Colorado River via Lake Mead. In areas where public sewers are not available to carry human and household wastewater to municipal wastewater treatment plants, individual sewage disposal systems (i.e., septic tank systems) provide the functions of both sewer collection and treatment plant.

City of Boulder City

The City of Boulder City provides wastewater processing via the Boulder City Wastewater Treatment Facility. The Boulder City Wastewater Treatment Facility is an aeration basin/facultative lagoon system with percolation dispersal and is designed for an average flow of 1.8 million gallons per day. The sewage collection system consists of approximately 65 miles of gravity sewer pipe and 2.5 miles of forced main. The sewer pipe includes the gravity sewer piping, which ranges in size from 6 to 18 inches in diameter, while forced mains range from 6 to 12 inches in diameter. The collection system is divided into four main drainage areas:

- Hemenway Valley, which, after collection, is pumped to the top of the drainage area by a series of four pumping stations
- Georgia Avenue Interceptor, which collects wastewater from the area east of Buchanan Boulevard
- Buchanan Boulevard Interceptor, which collects wastewater from the area immediately adjacent to Buchanan Boulevard
- Highway Interceptor, which collects wastewater from the area north of Highway 93

4.17.1.3 Flood Control and Storm Water Management

California

San Bernardino County

The Mojave River Watershed encompasses approximately 4,500 square miles and is located entirely within San Bernardino County. The primary geographic and surface hydrologic feature

of the watershed is the Mojave River. Elevations within the watershed range from 8,500 feet above sea level at Butler Peak in the San Bernardino Mountains to 1,400 feet above sea level at Afton Canyon near the terminus of the Mojave River. The average elevation in the Victor Valley is approximately 2,900 feet above sea level. The Mojave River channel transects the watershed for approximately 120 miles until it reaches Silver Dry Lake near the unincorporated community of Baker. Some reaches of the Mojave River flow underground in the confined riverbed channel. The Mojave River channel is typically dry downstream of the Mojave Forks Dam, except in select locations where groundwater is forced to the surface by geologic structures.

The San Bernardino County Flood Control District (SBCFCD) is responsible for providing flood control and related services to unincorporated areas and incorporated cities within the county. SBCFCD provides flood protection on major streams, water conservation, and storm drain construction, and is responsible for implementing the Drainage Area Management Plan. The cities in San Bernardino County implement construction and maintenance of local storm drains that feed into the County's area-wide system.

City of Hesperia

As previously discussed, the SBCFCD is responsible for providing flood control and related services to unincorporated areas and incorporated cities within the county. Within the city limits, the storm drain system is administered by the City of Hesperia's Development Services Department.

Nevada

Clark County

Within Clark County, flood control and storm water management is administered by the Clark County Regional Flood Control District. The State of Nevada is divided into 14 hydrographic regions that encompass 256 hydrographic basins and sub-basins. The existing facilities associated with the Proposed Project are located within the Central Region and Colorado River Basin hydrographic regions, which encompass approximately 46,783 and 12,376 square miles, respectively. Within these two regions, the Proposed Project is located primarily within the Montana Wash-Colorado River, Piute Wash, and Bullhead City-Colorado River watersheds. In the Las Vegas Valley, there are two systems of drainage—the sanitary sewer or wastewater system and the storm drain system. The storm drain system carries discharge off of city streets and routes it into curbside catch basins. From there, it also enters another underground, but completely separate, system.

City of Boulder City

The Clark County Regional Flood Control District is responsible for providing flood control and storm water management within the City of Boulder City.

4.17.1.4 Electricity and Natural Gas Services

California

San Bernardino County

Within San Bernardino County, electrical power is provided by Southern California Edison Company (SCE). Depending on location, natural gas is provided by Southern California Gas Company, Southwest Gas Corporation, and Victorville Municipal Utilities Services.

City of Hesperia

Within the City of Hesperia, electrical power is provided by SCE, and natural gas is administered by the Southwest Gas Corporation.

Nevada

Clark County

Within Clark County, electrical service is provided by Nevada Power, Overton Power District #5, and Valley Electric Association. Nevada Power Company provides electrical service to the Las Vegas Valley and the outlying Clark County. Nevada Power Company operates six power plants and buys electrical power from various sources throughout the county.

City of Boulder City

The City of Boulder City owns and operates its own municipal electrical distribution system. This system serves approximately 6,600 residential customers and 880 commercial customers.

4.17.1.5 Cable, Telephone, and Internet

California

San Bernardino County

Cable and Internet service in San Bernardino County is provided by Charter Communications and Time Warner Cable. Additional providers of telephone and Internet service include AT&T and Verizon.

City of Hesperia

Charter Communications is the cable service provider for the City of Hesperia. Telephone and Internet service is provided by Verizon, Charter Communications, and AT&T.

Nevada

Clark County

Cable and Internet service in Clark County is largely supplied by Cox Communications in the Las Vegas Valley. In the outlying areas of the county, various cable companies provide service. Clark Cablevision provides service to Laughlin and Searchlight. Telephone service in the Las Vegas Valley is largely provided by Embarq. Other providers include Nevada Bell, Nextlink, XO Communications, and Idacomm.

City of Boulder City

Cox Communications provides cable, telephone, and Internet service in the City of Boulder City. CenturyLink also provides Internet service.

4.17.1.6 Solid Waste and Recycling Services

California

San Bernardino County

The County of San Bernardino Solid Waste Management Division is responsible for the operation and management of the County of San Bernardino's solid waste disposal system, which consists of five regional landfills and nine transfer stations, these landfills and their available capacity are identified in Table 4.17-1: Landfill Capacity. Also, the division administers the county's solid waste handling franchise program and the refuse collection permit program, which authorizes and regulates trash collection by private haulers in the unincorporated area.

City of Hesperia

Within the City of Hesperia, sanitation services are administered by Advance Disposal. Advance Disposal also operates a Materials Recovery Facility (MRF), which has a capacity of 600 tons per day. Once trash is delivered to the MRF, it goes through a number of screens, shakers, and conveyor belts where employees pull out recyclables to be diverted from landfills operated by the County of San Bernardino Solid Waste Management Division. Landfills operated by the County of San Bernardino Solid Waste Management Division are summarized in Table 4.17-1: Landfill Capacity.

Nevada

Clark County

Clark County contracts with Republic Services for solid waste and trash disposal service. As shown in Table 4.17-1: Landfill Capacity, the County is served by two Class I landfills—Apex Regional Landfill and Transfer Station and Laughlin Landfill. Waste generated during construction of the Proposed Project would be transported off site using SCE-approved transporters and disposed of at an SCE-approved disposal facility. A list of SCE-approved landfills in the vicinity of the Proposed Project is provided in Table 4.17-1: Landfill Capacity.

City of Boulder City

Within the City of Boulder City, solid waste and recycling services are provided by B.C. Waste Free and B.C. Disposal. Solid waste and recyclables are disposed of at the Boulder City Landfill—a Class I Disposal Site. This facility accepts municipal solid waste, construction and demolition waste, industrial process waste, and transportation equipment waste. As detailed in Table 4.17-1: Landfill Capacity, the landfill is permitted to reach an elevation of 2,054 feet and has a capacity of 1.2 million cubic yards. It is anticipated that the landfill will reach capacity between 2036 and 2048.

Table 4.17-1: Landfill Capacity

Landfill	Location	Total Maximum Permitted (Cubic Yards)	Total Estimated Capacity Used (Cubic Yards)	Remaining Estimated Capacity (Cubic Yards)	Estimated Date to Close	Approximate Distance from Proposed Project (Miles)	Nearest Proposed Project Component
California							
Barstow Landfill	Barstow	80,354,500	8,872,840	71,481,660	2071	21.1 miles north	Lugo-Mohave 500 kilovolt (kV) Transmission Line Barstow Fiber Optic Repeater
Landers Landfill	Landers	3,083,500	2,318,402	765,098	2018	29.4 miles southeast	Lugo-Mohave 500 kV Transmission Line
Mid-Valley Landfill	Rialto	101,300,00	33,780,000	67,520,000	2033	15.2 miles southwest	Lugo-Mohave 500 kV Transmission Line
San Timoteo Landfill	Redlands	20,400,000	7,794,512	13,605,488	2043	24.0 miles south	Lugo-Mohave 500 kV Transmission Line
Victorville Landfill	Victorville	83,200,000	1,690,000	81,510,000	2047	15.5 miles north	Lugo-Mohave 500 kV Transmission Line

Landfill	Location	Total Maximum Permitted (Cubic Yards)	Total Estimated Capacity Used (Cubic Yards)	Remaining Estimated Capacity (Cubic Yards)	Estimated Date to Close	Approximate Distance from Proposed Project (Miles)	Nearest Proposed Project Component
Nevada							
Apex Regional Landfill and Transfer Station	Las Vegas	865,000,000	--	--	2150	70.5 miles north	Eldorado Substation
Boulder City Landfill	Boulder City	1,200,000	--	--	2036 to 2048	15.7 miles northeast	Eldorado Substation
Laughlin Landfill	Las Vegas	2,551,018	--	--	2022	3.7 miles southeast	Lugo-Mohave 500 kV Transmission Line

Notes: "--" = information not available
Sources: California Department of Resources Recycling and Recovery (CalRecycle) (2015), City of Boulder City (2015), Nevada Division of Environmental Protection (NDEP) (2007a)

4.17.2 Regulatory Setting

Federal, State, and local regulations were reviewed for applicability to the Proposed Project. The following subsections describe federal, State, and local regulations regarding utilities and service systems that are relevant to the Proposed Project.

4.17.2.1 Federal

In addition to the federal regulations described in the following subsections, federal authorizations would also be required because a majority of the land within the Proposed Project area is under the jurisdiction of the BLM, NPS, BOR, and DoD.

Safe Drinking Water Act

Originally passed by Congress in 1974 and amended in 1986 and 1996, the Safe Drinking Water Act (SDWA) allows the U.S. Environmental Protection Agency (EPA) to establish drinking water standards and oversee water supplies to ensure that they are in compliance with those standards. The standards apply to public and private water suppliers serving 25 or more individuals. The SDWA is intended to protect drinking water supplies from both naturally occurring and artificially introduced contaminants.

Clean Water Act Section 402

Section 402 of the Clean Water Act (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, including the Proposed Project, are regulated under the NPDES storm water program and are required to obtain coverage under a NPDES Construction General Permit (CGP). The CGP 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.

As discussed previously and also in Section 4.9, Hydrology and Water Quality, the NPDES was established per Section 402 of the CWA to control discharges of pollutants from point sources. Section 402 of the CWA covers storm water permitting and delegates authority to individual states for the administration and enforcement of the provisions of the CWA and the NPDES permit program.

Occupational Safety and Health Act of 1970

Originally passed by Congress in 1970 and amended in 2004, the Occupational Safety and Health Act governs occupational health and safety standards for both the private sector and the federal government. The main goal of the Occupational Safety and Health Act is to ensure that employers provide employees with an environment that is free from recognized hazards, such as exposure to toxic chemicals, excessive noise levels, mechanical dangers, heat or cold stress, or unsanitary conditions. Title 29, Part 1915 of the Code of Federal Regulations establishes standards for employers to ensure that an adequate number of toilet facilities are provided for all workers.

4.17.2.2 State

California

California Public Utilities Commission General Order 131-D

Pursuant to California Public Utilities Commission (CPUC) General Order (G.O.) 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 the California Environmental Quality Act (CEQA), the CPUC is the Lead Agency with respect to such Proposed Project elements within the State of California. SCE is required to comply with G.O. 131-D and is seeking a Permit to Construct from the CPUC for the Proposed Project.

Urban Water Management Planning Act

All urban water suppliers within the State of California are required to prepare UWMPs. California Water Code Sections 10610 through 10657 detail the information that must be included in these plans, as well as who must file them.

Integrated Waste Management Act of 1989

The Integrated Waste Management Act of 1989, otherwise known as Assembly Bill 939, mandates that California's jurisdictions divert 50 percent of their solid waste from landfills. CalRecycle is under the umbrella of the California Environmental Protection Agency and is responsible for the development and promotion of statewide recycling efforts.

California Department of Toxic Substances Control

The California Department of Toxic Substances Control regulates hazardous waste in California, primarily under the authority of the federal Resource Conservation and Recovery Act of 1976 and the California Health and Safety Code. Other laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup and emergency planning, and cleanup of hazardous wastes.

California Code of Regulations Title 27

Title 27 of the California Code of Regulations (CCR) defines regulations for the treatment, storage, processing, and disposal of solid waste. The State Water Resources Control Board (SWRCB) maintains and regulates compliance with Title 27 of the CCR. The Proposed Project's compliance with Title 27 of the CCR would be enforced by the Lahontan and Colorado River Regional Water Quality Control Boards (RWQCBs).

Porter-Cologne Water Quality Control Act (California Water Code Section 13000 et seq.)

The Porter-Cologne Water Quality Control Act provides for the regulation of pollutants entering the State's surface waters and groundwater. The Lahontan and Colorado River RWQCBs are responsible for protecting the beneficial uses of surface water and groundwater resources in the Proposed Project area in California and are discussed in the following subsections.

Lahontan Regional Water Quality Control Board

The Lahontan RWQCB is responsible for protecting the beneficial uses of surface water and groundwater resources from the Oregon border to the northern Mojave Desert and includes all of California east of the Sierra Nevada crest. The Lahontan RWQCB adopted the Water Quality Control Plan (Basin Plan) in 1995. 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, waste discharge requirements, 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.

Colorado River Regional Water Quality Control Board

Portions of the Proposed Project are located within the jurisdictional boundaries of the Colorado River RWQCB. The Colorado River Basin region covers approximately 13 million acres (20,000 square miles) in the southeastern portion of California, including all of Imperial County and portions of San Bernardino, Riverside, and San Diego Counties. Geographically, the region represents only a small portion of the total Colorado River drainage area, which includes portions of Arizona, Nevada, Utah, Wyoming, Colorado, New Mexico, and Mexico. The Colorado River RWQCB adopted its Basin Plan in 1993. As with the Lahontan RWQCB, the purpose of the Basin Plan is to designate beneficial uses for surface water and groundwater, set 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 describe implementation programs to protect all waters in the Colorado River Basin region. The Basin Plan is regularly reviewed and updated with amendments, as necessary.

National Pollutant Discharge Elimination System Permit

Within the State of California, the SWRCB issues both general permits and individual permits under the NPDES permit program. The SWRCB delegates much of its NPDES authority and administration to the nine RWQCBs. The Proposed Project's NPDES permits in California would be under the jurisdiction of the Lahontan and Colorado River RWQCBs. Specifically, SCE would obtain NPDES coverage under the California CGP (Order No. 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-0006-DWQ).

Nevada

Nevada Revised Statutes Section 704.865

Nevada Revised Statutes (NRS) Section 704.865 provides that "A person, other than a local government, shall not commence to construct a utility facility in the State without first having obtained a permit therefor from the Commission. The replacement of an existing facility with a like facility, as determined by the Commission, does not constitute construction of a utility facility." The Public Utilities Commission of Nevada is the Lead Agency for compliance with the Nevada Utility Environmental Protection Act.

Nevada Revised Statutes Section 444.440

NRS Section 444.440 establishes the authority of the NDEP Bureau of Waste Management to regulate the collection and disposal of solid waste in a manner that protects public health and welfare, prevents water or air pollution, prevents the spread of disease, conserves natural resources, and enhances the beauty and quality of the environment.

Nevada Revised Statutes Section 459.400

NRS Section 459.400 bestows authority to the NDEP Bureau of Waste Management to protect human health, public safety, and the environment from the effects of improper, inadequate, or unsound management of hazardous waste. This is accomplished by establishing programs that regulate the storage, generation, transportation, treatment and disposal of hazardous waste. The hazardous waste program is responsible for permitting and inspecting hazardous waste generators and disposal, transfer, storage and recycling facilities. It is also responsible for enforcing State hazardous waste statutes and regulations. Program staff are authorized to enforce federal hazardous waste regulations in lieu of the U.S. EPA.

National Pollutant Discharge Elimination System Permit

The State of Nevada requires that projects disturbing 1 or more acres obtain a Construction Stormwater General Permit (NVR100000) from the NDEP Bureau of Water Pollution Control. This construction permit is also required for projects that disturb less than 1 acre and are part of a larger common plan for development or sale that would ultimately disturb 1 acre or more.

4.17.2.3 Local

The CPUC has sole and exclusive jurisdiction over the siting and design of the Proposed Project components located in the State of California. Pursuant to CPUC G.O. 131-D, Section XIV.B, "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and cities' regulations are not applicable as the county and cities do not have jurisdiction over the Proposed Project. Accordingly, the following discussion of local regulations is provided for informational purposes only. The Proposed Project is subject to local regulations in the State of Nevada.

California

County of San Bernardino

County of San Bernardino 2007 General Plan

The Circulation and Infrastructure Element of the County of San Bernardino 2007 General Plan contains objectives and policies related to the provision of utilities, including the following:

- Promote the implementation of low-impact design principles to help control the quantity and improve the quality of urban runoff

- Coordinate with SCE and other utility suppliers to make certain that adequate capacity and supply exist for current and planned development in the county

City of Hesperia

City of Hesperia General Plan 2010

The City of Hesperia General Plan 2010 does not contain any specific goals or policies that are relevant to the Proposed Project.

Nevada

Clark County

Clark County Comprehensive Plan

The Utilities Element, an update to the Clark County Comprehensive Plan, is intended to provide recommendations and policies for various utility facilities to accommodate current and future needs. However, the Utilities Element does not contain any specific goals or policies that are relevant to the Proposed Project.

South Clark County Land Use Plan

The South Clark County Land Use Plan contains objectives and policies related to the provision of utilities, including the following:

- Discourage the use of low voltage overhead electric distribution lines. Title 30 mandates that electric distribution lines be installed underground.
- When technically feasible, encourage the joint use of corridors by utilities and service providers so that needed infrastructure is consolidated.
- Promote the joint use of high voltage transmission line corridors and transportation systems that allow for the development of pedestrian, equestrian, and bicycle trails within existing and planned transmission line corridors. Incorporate strategies that take into consideration access for routine and emergency transmission line maintenance.
- Encourage the upgrade and use of existing corridors whenever possible to minimize the overall number of corridors established within South Clark County communities.

Laughlin Land Use Plan

The Laughlin Land Use Plan contains objectives and policies related to the provision of utilities, including the following:

- Discourage the use of low voltage overhead electric distribution lines. The Unified Development Code (Title 30) mandates that electric distribution lines be installed underground.
- Encourage the joint use of corridors by utilities and service providers so that needed infrastructure is consolidated.

- Promote the joint use of high voltage transmission line corridors and transportation systems that allow for the development of pedestrian, equestrian, and bicycle trails within existing and planned transmission line corridors. Incorporate strategies that take into consideration access for routine and emergency transmission line maintenance.

- Encourage the upgrade and use of existing corridors whenever possible to minimize the overall number of corridors established within South Clark County communities.

City of Boulder City

Boulder City Master Plan

The Boulder City Master Plan contains the following policy related to the provision of utilities:

- The city should ensure that standards are established for all public facilities and services, including but not limited to fire protection and emergency services, parks, utilities, and transportation. These standards shall define the specified levels of service that are necessary and appropriate to meet the needs of city residents.

4.17.3 Significance Criteria

The significance criteria for assessing the impacts to utilities and service systems are derived from the CEQA Environmental Checklist.[4] According to the CEQA Checklist, a project would cause a potentially significant impact if it:

- Exceeds wastewater treatment requirements of the applicable RWQCB

- Requires or results in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects

- Requires or results in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects

- Does not have sufficient water supplies available to serve the project from existing entitlements and resources, or new or expanded entitlements are needed

- Results in the determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the projected demand in addition to the provider's existing commitments

[4] CEQA is a statute that requires State of California and local agencies in California to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible. There is no CEQA equivalent for the State of Nevada. Therefore, in the absence of such regulations, the Proposed Project (including components in Nevada) has been evaluated against the CEQA significance criteria. Where specific Nevada environmental regulations exist, a discussion has been included in the impact analysis for the Proposed Project.

- Is served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs
- Does not comply with federal, State, and local statutes and regulations related to solid waste

4.17.4 Impact Analysis

4.17.4.1 Would the project exceed wastewater treatment requirements of the applicable RWQCB?

Construction

No Impact. Construction of the Proposed Project would comply with the wastewater requirements of the Lahontan and Colorado River RWQCBs. During construction, portable toilets would be provided for on-site use by construction workers and would be maintained by a licensed sanitation contractor. Portable toilets would be used in accordance with applicable sanitation regulations established by the Occupational Safety and Health Administration (OSHA), which generally requires one portable toilet for every 15 workers. The amount of wastewater associated with the portable toilets would be commensurate with the number of workers on site during construction (i.e., 15 to 346 workers). Therefore, the maximum volume of wastewater that would be generated during a single week of construction is estimated to be approximately 1,380 to 1,610 gallons.[5] The licensed contractor would dispose of the waste at an off-site location and in compliance with standards established by the RWQCBs.

No new point sources of water pollution would result from construction, and no wastewater treatment requirements established by the RWQCBs would be exceeded. No dewatering is anticipated during construction; however, in the event that groundwater is encountered, dewatering would be conducted in compliance with the Statewide General Waste Discharge Requirements for Discharges to Land with a Low Threat to Water Quality (SWRCB's Water Quality Order No. 2003-0003-DWQ). Water quality testing would be performed to characterize the constituents of the water; if the levels are under the specific Basin Plan thresholds, dewatered groundwater could be utilized for dust control. If the Basin Plan thresholds cannot be met, the groundwater would be shipped to a licensed off-site facility for treatment and disposal. Therefore, there would not be any exceedance of wastewater treatment requirements, and there would be no impact as a result of construction of the Proposed Project.

Operation

No Impact. Operation and Maintenance (O&M) activities associated with the Proposed Project would be similar to those currently performed by SCE for existing facilities, and generally include repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, repairing or replacing poles and towers, tree trimming, brush and weed

[5] Industry standard rates assume that one portable toilet provides adequate restroom facilities for 15 people for one standard workweek. SCE estimates that 346 personnel may be required to construct the Proposed Project during the peak of construction. Estimated volumes were calculated assuming that 346 personnel would require at least 23 portable restrooms. The estimated volume range between 1,380 and 1,610 gallons per week was calculated using industry standard portable toilet wastewater capacities of 60 and 70 gallons, respectively

control, and access road maintenance, among other things. O&M practices would also include routine inspections and emergency repair within substations and rights-of-way (ROWs), which would require the use of vehicles and equipment. SCE also inspects the transmission and subtransmission overhead facilities in a manner consistent with CPUC G.O. 165, which requires observation a minimum of once per year, but inspection typically occurs more frequently to ensure system reliability. Following construction of the mid-line series capacitors,[6] additional O&M activities would consist of monthly and annual inspections, as well as equipment testing and maintenance of emergency generators, ranging from once a year to once every five years. Additional testing, inspections, and maintenance of the building, site, generator, and fuel tank would also be required at the new fiber optic repeater facilities every six months to once a year. Therefore, O&M of the Proposed Project would not require or generate wastewater that would exceed applicable wastewater treatment requirements, and no impact would occur.

4.17.4.2 Would the project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Construction

Less-Than-Significant Impact. It is anticipated that approximately 124,200 gallons of water per day would typically be used during construction of the Proposed Project, and approximately 146,000 gallons of water per day would be used during peak construction activities**.** Water usage calculations are provided in Appendix M: Water Usage Study. Water would be obtained from municipal water sources. SCE would confirm with the water service purveyor that adequate water is available for the Proposed Project prior to construction. In addition, SCE would employ the use of water-conserving features, such as soil binders, along the ROW access roads. Reclaimed water would also be used for the Proposed Project, if feasible.

As previously described, portable toilets would be provided for crew members during construction of the Proposed Project. The waste from these portable facilities would be disposed of off-site and would not require new facilities or the expansion of existing facilities. As described previously, dewatering is not anticipated, but if groundwater disposal is required, the amount would be relatively small and would not require or result in the construction of new water or wastewater treatment facilities or the expansion of existing facilities. No impact to local sewer systems would result from the Proposed Project, and no new water or wastewater treatment facilities would be required. Because the Proposed Project involves upgrades of existing transmission lines, construction would not directly or indirectly result in new or expanded development. As a result, no new extension of sewer or water lines would be required to serve the Proposed Project, and no new or expanded water or wastewater treatment facilities would be needed. As previously discussed, construction of the Proposed Project would typically require 124,200 gallons of water per day, and SCE would confirm with the water service purveyor that adequate water is available for the Proposed Project prior to construction; therefore, any potential impacts would be less than significant.

[6] The Proposed Project includes construction of two new 500 kV mid-line series capacitors—the proposed Newberry Springs Series Capacitor and Ludlow Series Capacitor.

Operation

No Impact. As previously described, O&M activities associated with the Proposed Project would be similar to those currently performed for the existing facilities, with additional O&M activities associated with the proposed mid-line series capacitors and fiber optic repeater facilities. Deionized water would also be used for equipment maintenance, which is similar to current operations. O&M of the Proposed Project would not require water or produce wastewater that results in the need for any new water or wastewater treatment facilities, and it would not require the expansion of any existing facilities. As a result, no impact would occur due to O&M of the Proposed Project.

4.17.4.3 Would the project require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Construction

No Impact. Construction-related activities would not result in a substantial increase in impervious surfaces that would increase storm water runoff from the Proposed Project area, and it is expected that rates of storm water runoff during construction would be similar to pre-construction conditions. Grading is anticipated to be required at the mid-line series capacitor sites, as well as one discrepancy[7] work area between Towers M29-T3 and M30-T1 along the Lugo-Mohave 500 kV Transmission Line. In addition, construction of the proposed Newberry Springs Series Capacitor and the proposed Ludlow Series Capacitor may require the installation of drainage channels and culverts to divert storm water runoff away from the mid-line series capacitor sites. Detention and/or retention basins may also be required to prevent erosion downstream. Water would be used primarily for dust suppression during construction activities. However, impacts resulting from the use of water for dust suppression would be addressed through the implementation of the SWPPPs, BMPs, and NPDES permit requirements. Therefore, the modification of existing drainage features during construction would not substantially increase the existing velocity or volume of storm water flows either on site or in off-site areas. Because construction activities would not result in significant increases in runoff, the Proposed Project would not require the construction of new storm water drainage facilities or the expansion of existing facilities. As a result, no impact would occur due to construction of the Proposed Project.

Operation

No Impact. As previously described, O&M activities associated with the Proposed Project would be similar to those currently performed for the existing facilities, with additional O&M activities associated with the proposed mid-line series capacitors and fiber optic repeater facilities. Once construction of the Proposed Project facilities and associated improvements has

[7] SCE has defined “discrepancies” 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. SCE has identified approximately 16 discrepancies along the Eldorado-Lugo, Eldorado-Mohave, and Lugo-Mohave 500 kV Transmission Lines, where minor grading, or relocation, replacement, or modification of transmission, subtransmission, or distribution facilities are needed to address CPUC G.O. 95 and National Electrical Safety Code overhead clearance requirements.

been completed, no additional changes to any storm water drainage facilities are anticipated. Drainage patterns and runoff potential within owned and/or to-be-acquired franchise areas and ROWs are expected to be similar to existing conditions. If grading or ground disturbance is necessary during the course of O&M activities, applicable BMPs would be implemented and temporary work areas would be restored to pre-disturbance conditions or as agreed to by the applicable agency to avoid increases in runoff or substantial changes in drainage patterns. Therefore, no new storm water drainage facilities would be required nor would the expansion of existing facilities be required, and no impacts associated with O&M of the Proposed Project are anticipated.

4.17.4.4 Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Construction

Less-Than-Significant Impact. Water would be required during site grading and construction activities to control dust on non-paved portions of the Proposed Project area. Water would be brought to the site in trucks that are specially equipped to allow for the dispersal of water, or by helicopters. Water would be obtained from municipal water sources and, if possible, reclaimed water would be used to reduce the use of potable water. Water purveyors that would be utilized during construction are projected to have at least 111.6 billion gallons of water available. Therefore, a sufficient water supply should be available to meet water demands for construction needs. However, SCE would confirm with the water service purveyor that adequate water is available for the Proposed Project prior to construction. Where possible, SCE would also utilize soil binders, reclaimed water, and other measures to conserve water usage. As a result, a less-than-significant impact would occur as a result of construction of the Proposed Project.

Operation

No Impact. As previously described, O&M activities associated with the Proposed Project would be similar to those currently performed for the existing facilities, with additional O&M activities associated with the proposed mid-line series capacitors and fiber optic repeater facilities. No additional water beyond the current water usage is anticipated to be required. Therefore, water supplies from existing entitlements and resources would be sufficient to continue accommodating these activities, and there would be no impact as a result of O&M of the Proposed Project.

4.17.4.5 Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Construction

No Impact. As previously discussed, portable toilets would be used during construction of the Proposed Project and would be maintained by a licensed sanitation contractor. Portable toilets would be used in accordance with applicable sanitation regulations established by the OSHA, which generally requires one portable toilet for every 15 workers. The licensed contractor would dispose of the waste at an off-site location and in compliance with standards established by the

RWQCB. As previously discussed, the VVWRA in San Bernardino County—located approximately 17.08 miles north of the Lugo Substation—treats approximately 13.5 million gallons per day of wastewater and is undergoing an expansion to increase its capacity to approximately 18 million gallons per day. Additionally, the CCWRD main facility in Clark County—located approximately 21.77 miles north of the Eldorado Substation—is responsible for wastewater treatment and reclamation in all of the unincorporated areas of Clark County and treats approximately 93 million gallons per day and has the capacity to treat approximately 150 million gallons per day. The Boulder City Wastewater Treatment Facility treats approximately 1.2 million gallons per day and has the capacity for approximately 1.8 million gallons per day. Because there are two facilities with approximately 57.6 million gallons of available wastewater treatment capacity per day in close proximity to the Proposed Project, and because the Proposed Project is anticipated to generate 1,380 to 1,610 gallons of wastewater from portable restrooms per week during peak construction, construction of the Proposed Project would not be expected to generate substantial new levels of wastewater in a manner that would have the potential to result in significant impacts to the wastewater treatment system capacity. The Proposed Project would not result in an increase in the existing population and would neither create nor increase the demand on the existing wastewater systems in the area. As a result, no impact associated with the production of the excess wastewater would occur as a result of construction of the Proposed Project.

Operation

No Impact. As previously described, O&M activities associated with the Proposed Project would be similar to those currently performed for the existing facilities, with additional O&M activities associated with the proposed mid-line series capacitors and fiber optic repeater facilities. One permanent portable restroom would be required for O&M of the mid-line series capacitors. However, this restroom would not be used frequently and would be maintained in accordance with applicable sanitation regulations established by OSHA. Therefore, a negligible volume of wastewater would be generated, and no impact to wastewater treatment capacity would occur from O&M of the Proposed Project.

4.17.4.6 Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Construction

Less-Than-Significant Impact. The Proposed Project would generate approximately 10,330 cubic yards of solid waste (i.e., green waste, refuse, spoils, and trash) during construction. Most solid waste generated during construction of the Proposed Project would be properly stored in a designated area of the laydown yard and ultimately would be transported to a nearby landfill or another approved facility before being disposed of in accordance with all applicable federal, State, and local laws. As previously discussed, waste generated during construction of the Proposed Project would be transported off site using SCE-approved transporters and disposed of at an SCE-approved disposal facility. A list of SCE-approved landfills in the vicinity of the Proposed Project is provided in Table 4.17-1: Landfill Capacity. Disposal of hazardous waste would be managed by an SCE-approved hazardous waste transporter and disposal contractor. In total, the landfills near the Proposed Project have a combined capacity to accept approximately 235 million cubic yards of additional waste. Because the local landfills have sufficient capacity,

any potential impacts would be less than significant as a result of construction of the Proposed Project.

Operation

No Impact. As previously described, O&M activities associated with the Proposed Project would be similar to those currently performed for the existing facilities, with additional O&M activities associated with the proposed mid-line series capacitors and fiber optic repeater facilities. Similar to current operations, typical waste generated would include materials needed to perform equipment maintenance, and packaging material associated with shipping and receiving replacement parts. Because O&M activities are not expected to exceed current waste volumes and because contracted landfill facilities have sufficient capacity, no impact would occur as a result of O&M of the Proposed Project.

4.17.4.7 Would the project comply with federal, State, and local statutes and regulations related to solid waste?

Construction

No Impact. Construction of the Proposed Project would be expected to comply with the federal, State, and local statutes and regulations related to solid waste handling and disposal. Waste materials that are not recyclable would be characterized by SCE to ensure appropriate final disposal. Non-hazardous waste would be transported to local waste management facilities identified in Table 4.17-1: Landfill Capacity, and if any hazardous waste is identified for disposal, it would be managed by an SCE-approved hazardous waste transporter and disposal contractor. Solid waste generated during construction of the Proposed Project would be properly stored in a designated area of the laydown yard and would be disposed of in a manner that is consistent with the applicable federal, State, and local statutes and regulations related to solid waste. As such, there would be no impact as a result of construction of the Proposed Project.

Operation

No Impact. As previously described, O&M activities associated with the Proposed Project would be similar to those currently performed for the existing facilities, with additional O&M activities associated with the proposed mid-line series capacitors and fiber optic repeater facilities. O&M activities would comply with federal, State, and local statutes and regulations related to solid waste. As a result, O&M activities would comply with solid waste regulations, and there would be no impact.

4.17.5 Applicant-Proposed Measures

Because no potentially significant impacts to utilities and service systems would occur as a result of the Proposed Project, no avoidance or minimization measures are proposed.

4.17.6 Mid-Line Series Capacitor Site Alternatives

Consistent with Section 15126.6(d) of the CEQA Guidelines, this Proponent's Environmental Assessment analyzes alternatives to the Proposed Project. Section 5.2, Description of Project Alternatives and Impact Analysis, identifies and compares the construction and operation of SCE's Proposed Project with its alternatives, including alternatives that did not meet key

Proposed Project objectives and were not carried forward. The alternatives retained for a full evaluation—alternative sites for the Newberry Springs Series Capacitor and the Ludlow Series Capacitor—are analyzed in relation to hazards and hazardous materials in the following discussion.

This section analyzes the alternative locations for the mid-line series capacitors. The alternative Newberry Springs Series Capacitor site is an approximately 3.1-acre site located approximately 930 feet to the northeast of its proposed location along the Eldorado-Lugo 500 kV Transmission Line. The alternative Ludlow Series Capacitor site is an approximately 3.1-acre site located approximately 970 feet to the southwest of its proposed location along the Lugo-Mohave 500 kV Transmission Line.

The existing utilities and service systems in the vicinity of the alternative Newberry Springs Series Capacitor site are generally the same as the facilities in the vicinity of the proposed mid-line capacitor site. However, a high-pressure gas line is located less than 300 feet south of the alternative Newberry Springs Series Capacitor site. The presence of a high-pressure gas line would introduce potential engineering and constructability issues during construction at the alternative Newberry Springs Series Capacitor site. Therefore, construction and O&M at the proposed mid-line capacitor site would result in fewer potential impacts to utilities and service systems than construction and O&M at the alternative mid-line capacitor site.

The existing utilities and service systems in the vicinity of the alternative Ludlow Series Capacitor site are similar to the facilities in the vicinity of the proposed mid-line capacitor site. Therefore, construction and O&M at the alternative and proposed Ludlow Series Capacitor sites would result in similar impacts to utilities and service systems.

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4.18 Cumulative Analysis

This section analyzes the potential cumulative impacts related to the Eldorado-Lugo-Mohave Series Capacitor Project (Proposed Project[1]).

The California Environmental Quality Act (CEQA) requires lead agencies to consider the cumulative impacts of proposals under their review. Section 15355 of the CEQA Guidelines defines cumulative impacts as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." According to Section 15130(a)(1), a cumulative impact "is the impact on the environment which results from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions." The cumulative impacts analysis "would examine reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects" (Section 15130[b][3]).

Section 15130(a)(3) also states that an environmental document may determine that a project's contribution to a significant cumulative impact would be rendered less than cumulatively considerable, and thus not significant, if a project is required to implement or fund its fair share of mitigation measure(s) designed to alleviate the cumulative impact.

In conducting a cumulative impacts analysis, the proper frame of reference is the temporal span and spatial areas in which the Proposed Project would cause impacts. In addition, a discussion of cumulative impacts must include either:

- A list of past, present, and probable future projects, including, if necessary, those outside the Lead Agency's control
- A summary of projections contained in an adopted general plan or related planning document, or in a previously certified Environmental Impact Report (EIR), which described or evaluated regional or area-wide conditions contributing to the cumulative impact, provided that such documents are referenced and made available for public inspection at a specified location (Section 15130[b][1])

The term "probable future projects" includes approved projects that have not yet been constructed; projects that are currently under construction; projects requiring an agency approval for an application that has been received at the time a Notice of Preparation is released; and projects that have been budgeted, planned, or included as a later phase of a previously approved project (Section 15130[b][1][B][2]). A listing of projects meeting this criteria within approximately 1 mile of the Proposed Project are listed in Table 4.18-1: Cumulative Projects within 1 Mile of the Proposed Project, along with the project identification number, a brief description, the jurisdiction in which it is located, distance from the project, status, and

[1] The term "Proposed Project" is inclusive of all components of the Eldorado-Lugo-Mohave Series Capacitor Project. Where the discussion in this section focuses on a particular component, that component is called out by its individual work area. (e.g., "Ludlow Series Capacitor").

anticipated construction schedule. These projects are also depicted in Figure 4.18-1: Planned and Proposed Projects within 5 Miles of the Proposed Project.[2]

The following subsections discuss whether—when combined with past, present, planned, and probable future projects in the area—the Proposed Project could result in significant short-term or long-term environmental impacts. Short-term impacts are generally associated with construction of the Proposed Project, while long-term impacts are those that result from permanent Proposed Project features or Operation and Maintenance (O&M) of the Proposed Project.

[2] Figure 4.18-1: Planned and Proposed Projects within 5 Miles of the Proposed Project does not show Proposed Project areas where projects do not occur.

Table 4.18-1: Cumulative Projects within 1 Mile of the Proposed Project

Project Identification Number/ Project Name	Project Description	Location	Proximity to Proposed Project (Miles)	Nearest Proposed Project Component	Status	Anticipated Construction Schedule
Lugo-Victorville 500 kV Transmission Line Special Protection Scheme (LVRAS) Project	Removal and replacement of existing overhead ground wire with optical ground wire within the existing right of way on the SCE Eldorado-Lugo 500 kV Transmission Line between Eldorado Substation in Nevada and Pisgah Substation in California.	Clark County, Nevada to Ludlow, California	Adjacent	Eldorado-Lugo 500 kV Transmission Line	Environmental Review	2019
Harry Allen to Eldorado 500 kV Transmission Line Project	Construction of a new 500 kV transmission line between Harry Allen Substation and Eldorado Substation in Clark County, Nevada.	Clark County, Nevada	Adjacent	Eldorado Substation	Finding of No Significant Impact in 2015; approved project sponsor selected in 2016	2019-2020

Project Identification Number/ Project Name	Project Description	Location	Proximity to Proposed Project (Miles)	Nearest Proposed Project Component	Status	Anticipated Construction Schedule
Eldorado-Lugo Project	Reconductor and upgrade/replace 25 percent of the structures on the Eldorado-Pisgah No. 1 and No. 2 220 kV lines and the Lugo-Pisgah No. 1 and No. 2 220 kV lines.	San Bernardino and Clark Counties, California and Nevada[3]	Adjacent	Eldorado-Lugo 500 kV Transmission Line	Certificate of Public Convenience and Necessity filing expected 2019	2022-Unknown

[3] The Eldorado-Lugo Project is not displayed in Figure 4.18-1: Planned and Proposed Projects within 5 Miles of the Proposed Project due to varying work locations.

Project Identification Number/ Project Name	Project Description	Location	Proximity to Proposed Project (Miles)	Nearest Proposed Project Component	Status	Anticipated Construction Schedule
Tapestry Specific Plan	Construction of three distinctive villages (Mesa Village, Summit Valley Village, and Grass Valley Village) that include a maximum of 19,311 mixed-density residential units; two mixed-use town centers totaling approximately 94 acres; approximately 367 acres of park land; an extensive trail system; eight elementary schools, two middle schools, and two high schools; public and civic facilities; a wastewater reclamation plant and lift stations; roadways, drainage facilities, domestic and recycled water infrastructure, and other associated infrastructure; and preservation of approximately 3,526 acres of open space. Development would be phased over a number of years and is located on approximately 9,365 acres.	City of Hesperia, California	<0.1	Lugo-Mohave 500 kV Transmission Line	Final EIR prepared in July 2015; in litigation	--

Project Identification Number/ Project Name	Project Description	Location	Proximity to Proposed Project (Miles)	Nearest Proposed Project Component	Status	Anticipated Construction Schedule
Calcite Substation Project	Construction of Calcite Substation and associated facilities to interconnect NextEra Energy Resources' Ord Mountain Solar Project to SCE's existing Lugo-Pisgah No. 1 220 kV Transmission Line.	Community of Lucerne Valley, California	<0.1	Eldorado-Lugo 500 kV Transmission Line	Under Licensing	2019-2020
Energy Zone Fencing	Construction of approximately 11 miles of desert tortoise (*Gopherus agassizii*) fencing, four new desert tortoise guards, and a new desert tortoise culvert to maintain habitat connectivity between the north and south sides of Eldorado Valley Drive.	Clark County, Nevada	0.1	Eldorado Substation	Development of construction bid documents for the Energy Zone Fencing project is on hold	--
UC-0337-15 Myers, Veda C., et al.	Expansion of an existing electrical substation and increase of structure height on a portion of the approximately 6.1-acre project site.	Community of Searchlight, Nevada	0.2	Eldorado-Mohave 500 kV Transmission Line	Approved by the Searchlight Town Advisory Board with staff conditions in September 2015	--

Project Identification Number/ Project Name	Project Description	Location	Proximity to Proposed Project (Miles)	Nearest Proposed Project Component	Status	Anticipated Construction Schedule
Rehabilitate Five Campsites – Pilot Project for Roadside Campsite Management Plan	Restoration of campgrounds as part of a Roadside Camping Management Plan being developed for the Mojave National Preserve.	Mojave National Preserve in San Bernardino County, California	0.3[4]	Lugo-Mohave 500 kV Transmission Line	Categorical exclusion under the National Environmental Policy Act was issued in June 2013	--
TTE 16-00008	Construction of 12 single-family lots on approximately 7.5 acres.	City of Hesperia	0.7	Eldorado-Lugo 500 kV Transmission Line	Extension approved in June 2016	--
TTE 16-00003	Construction of a 103-lot, single-family, residential subdivision in four phases on approximately 55.2 acres.	City of Hesperia, California	0.8	Eldorado-Lugo 500 kV Transmission Line	Third extension approved in March 2016	--
UC-0659-12 (ET-0066-16) Nevada Milling and Mining LLC, et al.	Construction of a mining operation and all accessory uses, including a modular building; hillside and foothills development in conjunction with mining operation on approximately 88.0 acres.	Community of Searchlight, Nevada	0.8	Eldorado-Mohave 500 kV Transmission Line	On hold	--

[4] Foshay Pass (Rock Source Location 12) within the Mojave National Preserve is one of the alternatives that might be used to create campsite boundaries and would be the closest component to the Proposed Project.

Project Identification Number/ Project Name	Project Description	Location	Proximity to Proposed Project (Miles)	Nearest Proposed Project Component	Status	Anticipated Construction Schedule
San Bernardino County Master Stormwater System Maintenance Program	Long-term maintenance of flood control facilities throughout San Bernardino County.	San Bernardino County, California[5]	N/A	--	The San Bernardino County Flood Control District is preparing a Draft EIR as of June 2014	--
Desert Renewable Energy Conservation Plan	Collaboration of the California Energy Commission, California Department of Fish and Wildlife (CDFW), BLM, and United States (U.S.) Fish and Wildlife Service (USFWS) to conserve and manage wildlife communities and facilitate permitting of renewable energy projects.	Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego Counties, California[6]	N/A	N/A	Final EIR completed; Phase I completed	N/A

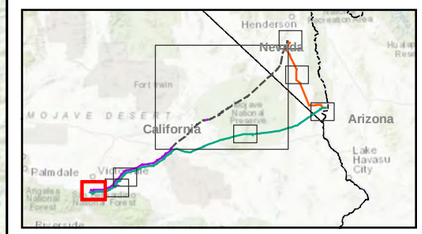
Notes: "N/A" = Not applicable; "--" = information not available.
Sources: Armantrout (2016), City of Boulder City (2016), City of Hesperia (2016a-c), Clark County (2016a-e), County of San Bernardino (2016a-g; 2017), Helseth (2016), Klein (2016), Reno (2016), Sargent (2016), Schultz (2017)

[5] The San Bernardino County Master Stormwater System Maintenance Program is not displayed in Figure 4.18-1: Planned and Proposed Projects within 5 Miles of the Proposed Project due to varying and unknown locations.
[6] The Desert Renewable Energy Conservation Plan is not displayed in Figure 4.18-1: Planned and Proposed Projects within 5 Miles of the Proposed Project due to varying locations.

Figure 4.18-1:
Planned and Proposed Projects within 5 Miles of the Proposed Project
Map 1 of 8

Eldorado-Lugo-Mohave Series Capacitor Project

- Existing Substation
- 96 Unit Senior Apartment Complex
- CUP15-00007
- Deep Creek Project
- Hesperia Gateway Center
- Love's Travel Center Project
- P201100238/WIND
- P201100308/WIND
- Ranchero Road Improvements, Seventh Avenue to Mariposa Road
- SPR 16-00002
- SPRE15-00007
- SPRE16-00002
- SPRE16-00003
- SPRR15-00009
- TT15-00003
- TTE 16-00005
- TTE 16-00008
- TTE15-00002
- TTE16-00003
- TTE16-00004
- TTE16-00006
- TTE16-00010
- TTE16-0009
- Tapestry Specific Plan
- Ranchero Road Corridor Project - Phases I, II, III
- Eldorado - Lugo 500 kV Transmission Line
- Lugo - Mohave 500 kV Transmission Line
- City Boundary
- 5-Mile Project Buffer
- State Boundary



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Source: Insignia, 2018; SCE, 2018;

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Figure 4.18-1:
Planned and Proposed Projects within 5 Miles of the Proposed Project
Map 2 of 8

Eldorado-Lugo-Mohave Series Capacitor Project

- Clean Focus Apple Valley East
- Dynamic Development Company, LLC
- High Desert Corridor
- Eldorado - Lugo 500 kV Transmission Line
- Lugo - Mohave 500 kV Transmission Line
- City Boundary
- 5-Mile Project Buffer
- State Boundary
- Rattlesnake Mountain OHV Trails

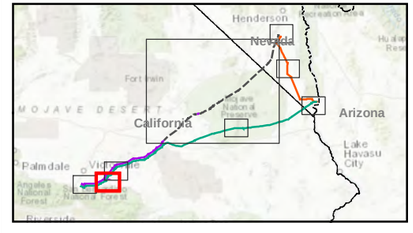

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Figure 4.18-1:
Planned and Proposed Projects within 5 Miles of the Proposed Project
Map 3 of 8

Eldorado-Lugo-Mohave Series Capacitor Project

- Proposed Fiber Optic Repeater Location
- Calcite Substation Project
- Dynamic Development Company, LLC
- Hacienda at Fairview Valley Specific Plan
- P201100112/PREAPPDR
- Sienna Solar Farm
- Eldorado - Lugo 500 kV Transmission Line
- Lugo - Mohave 500 kV Transmission Line
- 5-Mile Project Buffer
- State Boundary

Calcite Substation Project

Barstow Repeater

Hacienda at Fairview Valley Specific Plan

Sienna Solar Farm

P201100112/PREAPPDR

Dynamic Development Company, LLC

Lucerne Valley

California

Nevada

Arizona

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Source: Insignia, 2018; SCE, 2018;

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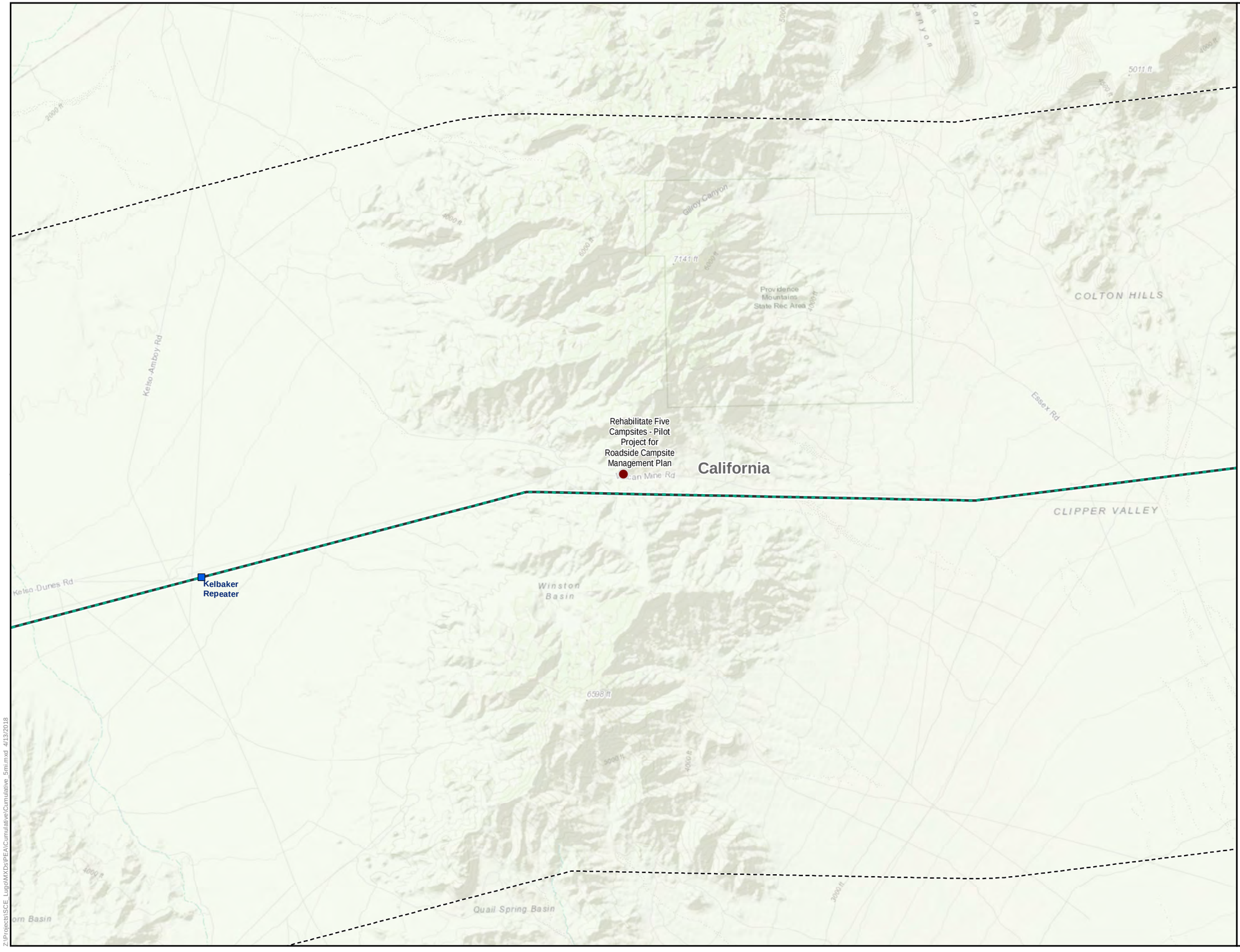
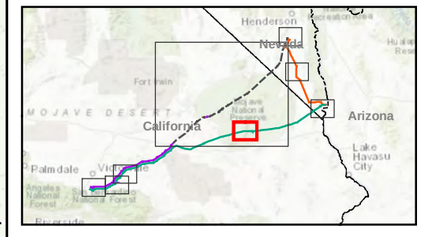


Figure 4.18-1:
Planned and Proposed Projects within 5 Miles of the Proposed Project
Map 4 of 8

Eldorado-Lugo-Mohave Series Capacitor Project

- Proposed Fiber Optic Repeater Location
- Rehabilitate Five Campsites - Pilot Project for Roadside Campsite Management Plan
- Lugo - Mohave 500 kV Transmission Line
- 5-Mile Project Buffer
- State Boundary



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SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

INSIGNIA ENVIRONMENTAL

Source: Insignia, 2018; SCE, 2018;

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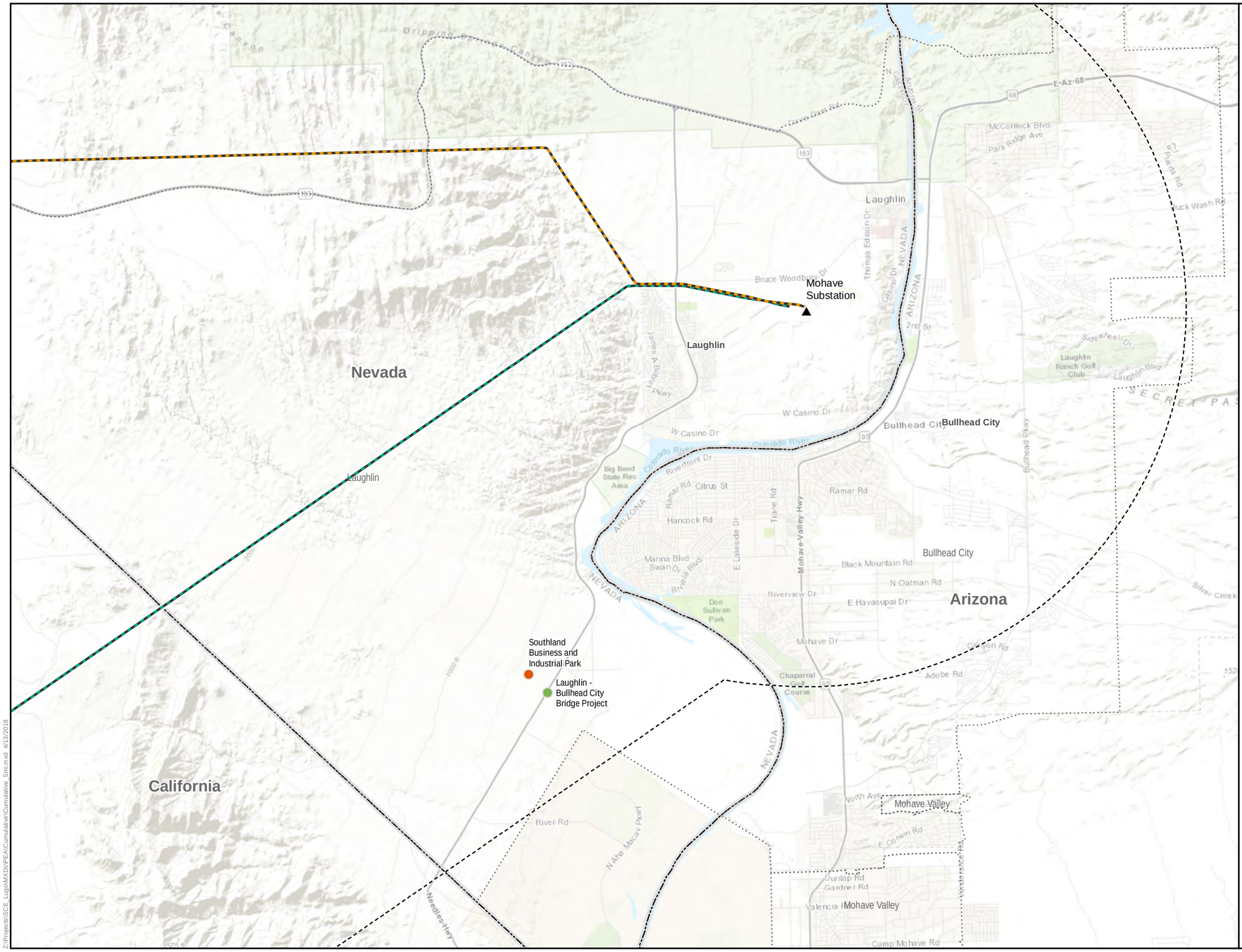

Figure 4.18-1:
Planned and Proposed Projects within 5 Miles of the Proposed Project
Map 5 of 8

Eldorado-Lugo-Mohave Series Capacitor Project

- Existing Substation
- Laughlin - Bullhead City Bridge Project
- Southland Business and Industrial Park
- Eldorado - Mohave 500 kV Transmission Line
- Lugo - Mohave 500 kV Transmission Line
- City Boundary
- 5-Mile Project Buffer
- State Boundary

Source: Insignia, 2018; SCE, 2018;

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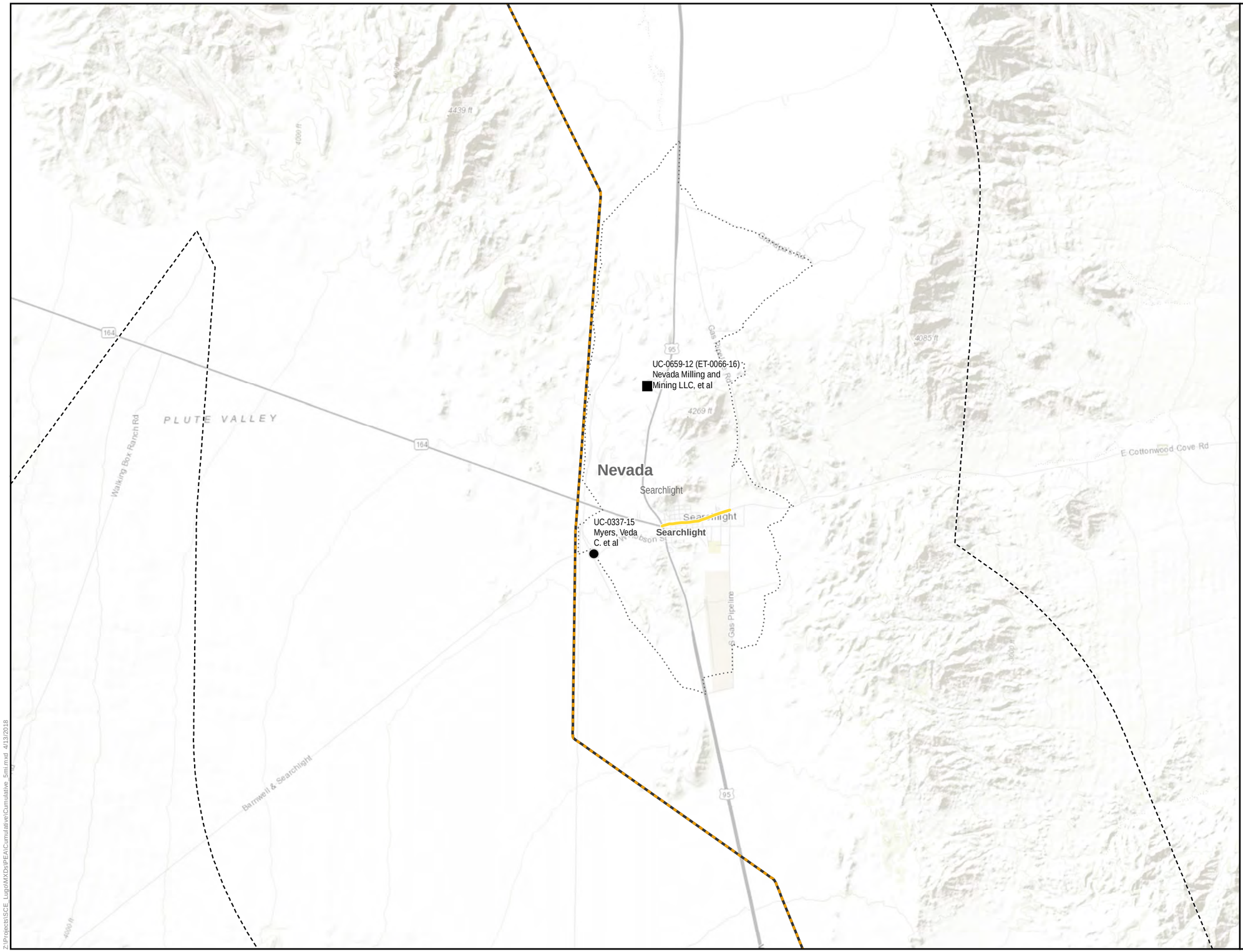

Figure 4.18-1:
Planned and Proposed Projects within 5 Miles of the Proposed Project
Map 6 of 8

Eldorado-Lugo-Mohave Series Capacitor Project

- UC-0337-15 Myers, Veda C. et al
- UC-0659-12 (ET-0066-16) Nevada Milling and Mining LLC, et al
- Searchlight Cottonwood Cove Rd
- Eldorado - Mohave 500 kV Transmission Line
- City Boundary
- 5-Mile Project Buffer
- State Boundary

Source: Insignia, 2018; SCE, 2018;

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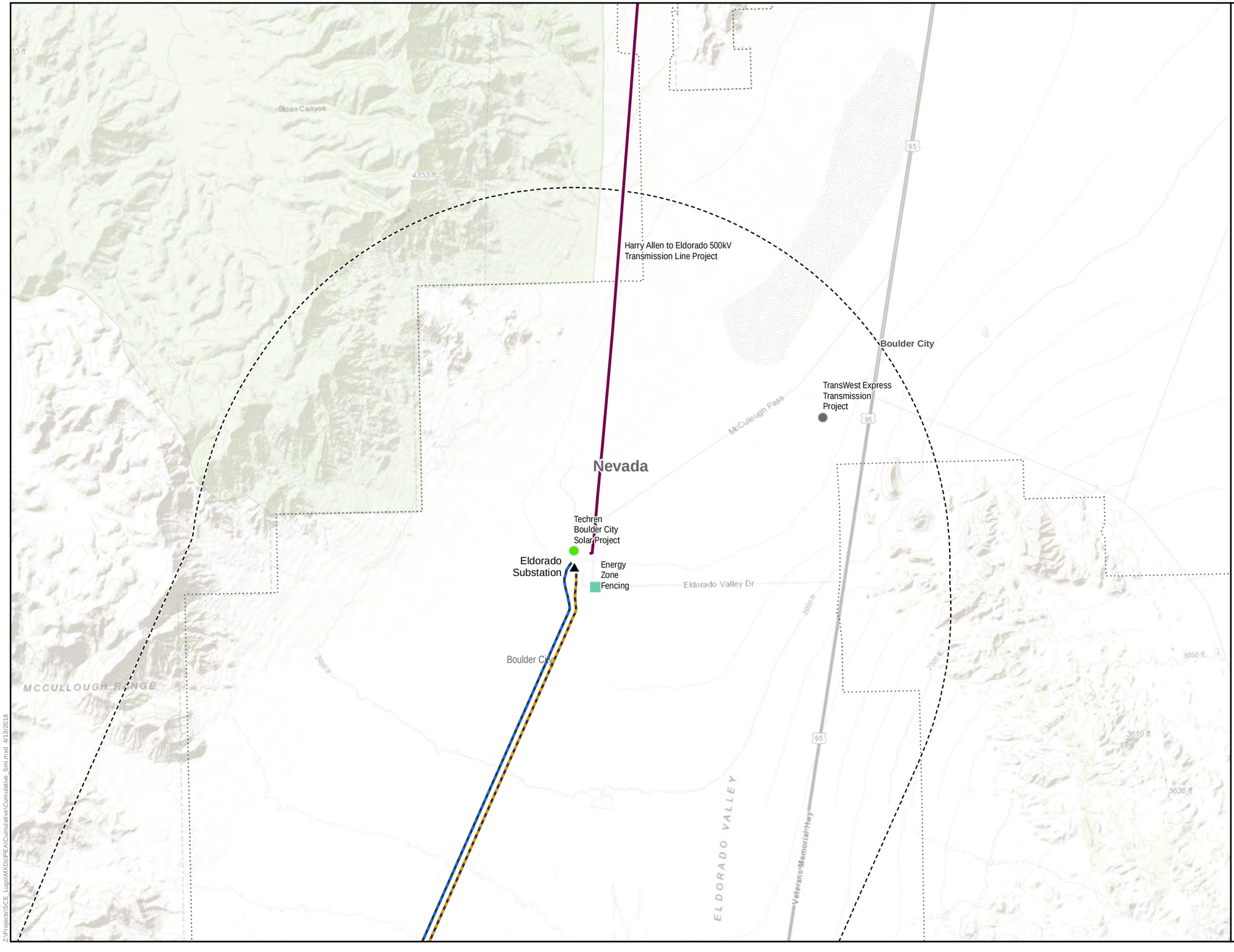
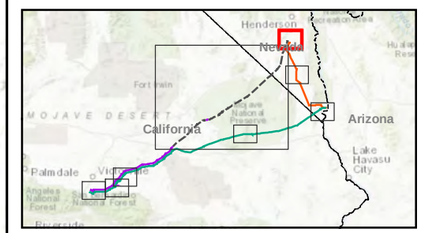
Figure 4.18-1:
Planned and Proposed Projects within 5 Miles of the Proposed Project
Map 7 of 8

Eldorado-Lugo-Mohave Series Capacitor Project



- Existing Substation
- Energy Zone Fencing
- Techren Boulder City Solar Project
- TransWest Express Transmission Project
- Harry Allen to Eldorado 500 kV Transmission Line Project
- Eldorado - Mohave 500 kV Transmission Line
- Lugo-Victorville 500 kV Transmission Line Special Protection Scheme Project
- City Boundary
- 5-Mile Project Buffer
- State Boundary



1:79,000

0 1 2 Miles

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

INSIGNIA ENVIRONMENTAL

Source: Insignia, 2018; SCE, 2018;

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Figure 4.18-1:
Planned and Proposed Projects within 5 Miles of the Proposed Project
Map 8 of 8

Eldorado-Lugo-Mohave Series Capacitor Project

- Existing Substation
- Proposed Fiber Optic Repeater Location
- Energy Zone Fencing
- Rehabilitate Five Campsites - Pilot Project for Roadside Campsite Management Plan
- Eldorado - Lugo 500 kV Transmission Line
- Eldorado - Mohave 500 kV Transmission Line
- Lugo - Mohave 500 kV Transmission Line
- Lugo-Victorville 500 kV Transmission Line Special Protection Scheme Project
- City Boundary
- 5-Mile Project Buffer
- State Boundary

Nevada
California
Arizona
Tecopa
Sandy Valley
Jean
Boulder City
Mountain Pass
Nipton
Cima
Fort Irwin
Mojave National Preserve
KINGSTON RANGE
MESQUITE VALLEY
SILURIAN VALLEY
AVAWATZ MOUNTAINS
SHADOW VALLEY
IVANPAH VALLEY
NEW YORK MOUNTAINS
SODA MOUNTAINS
DEVILS PLAYGROUND
PROVIDENCE MOUNTAINS
CADY MOUNTAINS
BRISTOL MOUNTAINS
PIUTE MOUNTAINS
6153 ft
5526 ft
5293 ft
6503 ft
7522 ft
CA-127
I-15 S–I-15 N
15

Rehabilitate Five Campsites - Pilot Project for Roadside Campsite Management Plan

Pisgah Substation

Ludlow Series Capacitor

Newberry Springs Series Capacitor

1:460,000

0 6 12 Miles

Source: Insignia, 2018; SCE, 2018;

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4.18.1 Past Projects

The Proposed Project area within San Bernardino and Clark Counties is characterized by mostly undeveloped and open lands, utilities and infrastructure, and some low-density residential land uses. Past projects within the vicinity of the Proposed Project include solar and other energy facilities, capital improvement projects, and other residential and commercial developments.

This section discusses whether the Proposed Project would result in significant short-term or long-term environmental impacts when combined with other past, present, and reasonably foreseeable future projects in the area. Short-term impacts are generally associated with construction of the Proposed Project, while long-term impacts result from O&M of the Proposed Project.

Construction and O&M of the Proposed Project would not impact the following resources, and therefore would not contribute to a cumulative effect in these areas:

- Land use and planning
- Mineral resources
- Population and housing
- Public services

As a result, these resource areas were not further analyzed with regard to cumulative impacts.

Cumulative impacts to the following resources could occur as a result of construction and O&M of the Proposed Project in conjunction with the other planned and proposed future projects:

- Aesthetics
- Agriculture and forestry resources
- Air quality
- Biological resources
- Cultural resources
- Geology and soils
- Greenhouse gas (GHG) emissions
- Hazards and hazardous materials
- Hydrology and water quality
- Noise
- Recreation
- Transportation and traffic
- Utilities and service systems

The geographic area that could be affected by the Proposed Project in combination with other projects varies depending on the type of environmental resource being considered. Because SCE estimates that potential Proposed Project impacts to a number of environmental resources are not anticipated to extend beyond 1 mile from the Proposed Project, cumulative impacts from other projects within this distance were considered for the following resource areas:

- Aesthetics[7]
- Agriculture and forestry resources
- Cultural resources
- Geology and soils
- Hazards and hazardous materials
- Noise
- Recreation
- Transportation and traffic
- Utilities and service systems

The cumulative analysis extends to a distance of 5 miles from the Proposed Project due to the more regional nature of potential impacts to the following resources:

- Air quality
- Biological resources
- GHG emissions
- Hydrology and water quality

Anticipated future projects within 5 miles of the Proposed Project are described in Table 4.18-2: Cumulative Projects within 5 Miles of the Proposed Project. These resources are discussed further in the subsections that follow.

[7] This resource section uses a 0.5-mile buffer because the Proposed Project viewshed is most prominent and visible within the foreground. The foreground is defined as the zone between 0.25 and 0.5 mile from the viewer. Visibility of the Proposed Project is limited beyond that point and would typically not result in a cumulative impact.

Table 4.18-2: Cumulative Projects within 5 Miles of the Proposed Project

Project Identification Number/ Project Name	Project Description	Location	Proximity to Proposed Project (Miles)	Nearest Proposed Project Component	Status	Anticipated Construction Schedule
Ranchero Road Corridor Project - Phases I, II, III	Phase I – Construction of a grade separation at the BNSF Railway where Ranchero Road terminates at either side of the railroad right-of-way (ROW). Phase II – Construction of a freeway interchange at Ranchero Road and Interstate (I-) 15. Environmental clearance was received in the spring of 2010. Phase III – A future joint project with San Bernardino County. The project goal is to widen Ranchero Road from two to four lanes between I-15 and the Phase I undercrossing.	San Bernardino County, California	1.0	Lugo Substation	Unfunded	--
Searchlight Cottonwood Cove Road	Construction of approximately 0.8 mile of a multi-use trail along Cottonwood Cove Road to increase bicycle/pedestrian safety and enhance multi-modal transportation options	Clark County, Nevada	1.1	Eldorado-Mohave 500 kV Transmission Line	Unfunded	2017-Unknown

Project Identification Number/ Project Name	Project Description	Location	Proximity to Proposed Project (Miles)	Nearest Proposed Project Component	Status	Anticipated Construction Schedule
Ranchero Road Improvement: Seventh Avenue to Mariposa Road	Various improvements to Ranchero Road, including the Ranchero Road Underpass, a new interchange at I-15, and the widening of Ranchero Road between the two.	City of Hesperia, California	1.5	Eldorado-Lugo 500 kV Transmission Line	Design	--
Techren Boulder City Solar Project	Construction of a 300-MW, PV, solar-powered, electricity-generating facility; a substation with 34.5 kV to 230 kV step-up transformers, approximately 4 miles of 230 kV transmission line; and associated facilities on approximately 2,200 acres. Both alternatives consist of a transmission line within a designated federal utility corridor that would connect the Techren Boulder City Solar Project to Eldorado Substation and the McCullough Switching Station or the Los Angeles Department of Water and Power's Marketplace Substation.	Clark County, Nevada	1.5	Eldorado Substation	Under Construction	2016-Unknown
TransWest Express Transmission Project	Development of a regional electric transmission system.	Wyoming, Colorado, Utah, and Nevada	2.1	Eldorado Substation	Approved	2019-2021

Project Identification Number/ Project Name	Project Description	Location	Proximity to Proposed Project (Miles)	Nearest Proposed Project Component	Status	Anticipated Construction Schedule
Sienna Solar Project	Construction and operation of a 300 MW PV solar energy facility on approximately 990 acres in the community of Lucerne Valley.	Located on Lucerne Dry Lake bed; and the northwest corner of SR-247 and Granite Road in San Bernardino County	2.2	Lugo-Mohave 500 kV Transmission Line	Under review	--
Rattlesnake Mountain Off Highway Vehicle (OHV) Trails	Proposal to evaluate adding OHV trails to the San Bernardino National Forest's motorized trail system. New trails would start near Rattlesnake Mountain and travel southeast to Big Pine Flat.	San Bernardino County, California	2.4	Lugo-Mohave 500 kV Transmission Line	Approved; pending funding	--[8]
Hesperia Gateway Center/ CUP16-00002	Construction of an approximately 3,645-square-foot mini-mart with 12 fuel dispensers and an automated 968-square-foot car wash; or a drive-thru restaurant.	City of Hesperia, California	2.7	Lugo Substation	Under construction	2016-Unknown

[8] The San Bernardino National Forest intends to submit this proposal for State OHV grant funding as part of the 2017 cycle. If granted, implementation could begin in 2018.

Project Identification Number/ Project Name	Project Description	Location	Proximity to Proposed Project (Miles)	Nearest Proposed Project Component	Status	Anticipated Construction Schedule
TTE16-0009	Development of 37 single-family residential lots on approximately 10 acres.	City of Hesperia, California	2.9	Lugo Substation	Third extension approved in June 2016	--
SPRE16-00003	Construction of an approximately 5,006-square-foot building expansion of an existing church on approximately 2.7 acres.	City of Hesperia, California	3.0	Lugo Substation	Extension approved in June 2016	--
P201100238/ WIND	Construction of an accessory wind energy system for an approximately 100-foot wind-generating tower on a portion of approximately 2.3 acres.	City of Hesperia, California	3.0	Lugo Substation	--	--
Love's Travel Center Project	Development of a travel center on approximately 10.6 acres with 12,271 square feet of commercial uses, including a country store, two fast food restaurants, and a vehicle service/tire care center.	City of Hesperia, California	3.0	Lugo Substation	Final EIR completed in April 2015	--
TTE 16-00005	Construction of 20 single-family residential lots on approximately 5 acres.	City of Hesperia, California	3.2	Lugo Substation	Extension approved in May 2016	--
TTE16-00004	Construction of nine single-family residential lots on approximately 2.5 acres.	City of Hesperia, California	3.2	Lugo Substation	Extension approved in May 2016	--

Project Identification Number/ Project Name	Project Description	Location	Proximity to Proposed Project (Miles)	Nearest Proposed Project Component	Status	Anticipated Construction Schedule
SPRE15-00007	Construction of a two-story, 84-unit apartment complex on approximately 5.6 acres.	City of Hesperia, California	3.3	Eldorado-Lugo 500 kV Transmission Line	Seventh extension approved in January 2016	--
TTE16-00006	Construction of 17 single-family residential lots on approximately 5.0 acres.	City of Hesperia, California	3.3	Lugo Substation	Extension approved in May 2016	--
TTE16-00010	Construction of 100 single-family residential lots on approximately 25 acres.	City of Hesperia, California	3.3	Lugo Substation	Second extension approved in June 2016	--
P201100308/ WIND	Construction of an accessory wind energy system for an approximately 80-foot wind-generating tower with an overall height of 93.5 feet on approximately 1.9 acres.	San Bernardino County, California	3.4	Lugo Substation	--	--
Southland Business and Industrial Park	Construction of an industrial park within the Southland proposed master plan development on over 400 acres.	Clark County, Nevada	3.5	Lugo-Mohave 500 kV Transmission Line	--	--
Deep Creek Project	Development of 202 residential lots on approximately 249 acres.	San Bernardino County, California	3.5	Eldorado-Lugo 500 kV Transmission Line	Environmental review	--

Project Identification Number/ Project Name	Project Description	Location	Proximity to Proposed Project (Miles)	Nearest Proposed Project Component	Status	Anticipated Construction Schedule
P201200107/ WIND	Construction of an accessory wind energy system to install an approximately 80-foot tower with an overall height of 93.5 feet on approximately 2.2 acres	San Bernardino County, California	3.8	Eldorado-Lugo 500 kV Transmission Line	--	--
Laughlin – Bullhead City Bridge Project	Construction of a new, four-lane bridge over the Colorado River between the community of Laughlin, Nevada and Bullhead City, Arizona.	Clark County, Nevada	3.8	Lugo-Mohave 500 kV Transmission Line	Design	--
Hacienda at Fairview Valley Specific Plan	Specific plan for a master planned community, including development of 3,114 residential units; approximately 15 acres of commercial space; and approximately 336 acres of parks, equestrian and open space on 1,557 acres.	San Bernardino County, California	3.9	Eldorado-Lugo 500 kV Transmission Line	Environmental review	--
SPR 16-00002	Construction of a four-story, 98-room hotel and a four-story, 110-room hotel on approximately 5 acres.	San Bernardino County, California	3.9	Lugo Substation	Approved in March 2016	--

Project Identification Number/ Project Name	Project Description	Location	Proximity to Proposed Project (Miles)	Nearest Proposed Project Component	Status	Anticipated Construction Schedule
TT15-00003	Construction of a two-story, 84-unit senior condominium development; a two-story, 131-unit senior assisted living facility; a two-story, 300-person adult day care center; a spa and wellness center; medical offices; other senior-oriented retail uses; and an approximately 4,000-square-foot commercial building in four phases on approximately 10 acres.	City of Hesperia, California	4.1	Lugo Substation	Approved in July 2016	--
CUP15-00007	Construction of a retail development comprised of an approximately 18,600-square-foot Aldi Market, an 11,700-square-foot Les Schwab Tire building, a 10,000-square-foot retail building, a 7,000-square-foot retail building, and a 3,000-square-foot drive-thru restaurant on approximately 7.4 acres.	City of Hesperia, California	4.1	Lugo Substation	Approved in January 2016	--
Clean Focus Apply Valley East	Construction of a 3 MW, PV, solar-powered electricity-generating facility on approximately 23 acres.	San Bernardino County, California	4.1	Eldorado-Lugo 500 kV Transmission Line	Environmental review	--

Project Identification Number/ Project Name	Project Description	Location	Proximity to Proposed Project (Miles)	Nearest Proposed Project Component	Status	Anticipated Construction Schedule
P201100112/ PREAPPDR	Development of a 10 MW, PV, solar-powered electricity-generating facility on approximately 80 acres; and a 20 MW, PV, solar-powered electricity-generating facility on approximately 128 acres.	San Bernardino County, California	4.2	Lugo-Mohave 500 kV Transmission Line	--	--
Dynamic Development Company, LLC	Constriction of an approximately 9,026-square-foot general retail building on approximately 1.8 acres.	San Bernardino County, California	4.2	Lugo-Mohave 500 kV Transmission Line	Environmental review	--
SPRE16-00002	Construction of an approximately 21,400-square-foot retail center on approximately 2.5 acres.	City of Hesperia, California	4.3	Eldorado-Lugo 500 kV Transmission Line	Sixth extension approved in May 2016	--
High Desert Corridor	Development of a multipurpose corridor that could connect Antelope Valley in Los Angeles County with Victor Valley in San Bernardino County.	San Bernardino County, California	4.3	Eldorado-Lugo 500 kV Transmission Line	Final EIR completed in June 2016	--
SPRR15-00009	Construction of an approximately 8,450-square-foot, two-story addition to an existing 8,772-square-foot church.	City of Hesperia, California	4.6	Eldorado-Lugo 500 kV Transmission Line	Approved in February 2016	--

Project Identification Number/ Project Name	Project Description	Location	Proximity to Proposed Project (Miles)	Nearest Proposed Project Component	Status	Anticipated Construction Schedule
TTE15-00002	Creation of 52 single-family lots on approximately 9.4 acres.	City of Hesperia, California	4.6	Eldorado-Lugo 500 kV Transmission Line	Extension approved in January 2016	--
96 Unit Senior Apartment Complex	Construction of a 96-unit senior apartment complex.	City of Hesperia, California	4.8	Lugo Substation	Approved in April 2016	2016-Unknown

Sources: Alcayaga (2016), Caltrans (2016), City of Boulder City (2016), City of Hesperia (2016a-c), Clark County (2016a-e), County of San Bernardino (2016a-g), Daily Press (2017), Schultz (2017), Xie (2016)

4.18.2 Aesthetics

Cumulative impacts to aesthetics could occur where Proposed Project facilities are viewed in combination with other past, present, planned, and probable developments. The significance of cumulative visual impacts depends on a number of factors, including the degree to which the viewshed is altered and the extent to which scenic resources in the area are disrupted due to either view obstructions or direct impacts to scenic resource features. The Proposed Project viewshed is defined as the general area from which it is visible. For the purposes of this analysis, the potential effects on foreground viewshed conditions are emphasized. The foreground is defined as the zone between 0.25 and 0.5 mile from the viewer. Landscape detail is most noticeable and objects generally appear most prominent when seen in the foreground. There are no State-designated scenic highways in the Proposed Project area. In the Proposed Project vicinity, no specific scenic vistas have been identified or designated by the County of San Bernardino or the City of Hesperia. However, scenic views of desert open spaces, valleys, mountains, and mountain ranges are available from a variety of points on public roadways.

4.18.2.1 Construction

SCE anticipates that construction of the Proposed Project would take approximately 15 months, from second quarter 2019 through June 2020. Of the planned and proposed projects listed in Table 4.18-1: Cumulative Projects within 1 Mile of the Proposed Project, eight are located within 0.5 mile of the Proposed Project and could have a cumulative impact on visual quality in the area. The construction schedule for four of the planned and proposed projects within 0.5 mile of the Proposed Project could overlap with construction of the Proposed Project. An additional four projects within 0.5 mile of the Proposed Project have construction timelines that are unknown and could potentially overlap with construction of the Proposed Project.

Typical SCE construction equipment would include cranes, bucket trucks, dump trucks, helicopters, and forklifts. Section 3.7.8.1, Equipment Description in Chapter 3, Project Description provides more detail on the types of construction equipment SCE expects to use during construction. As discussed in Section 4.1, Aesthetics, construction of the Proposed Project would have a temporary, less-than-significant impact on scenic vistas and the existing visual character of the Proposed Project area during construction activities. As previously described, while there are no officially designated scenic vistas in the Proposed Project area, scenic views of desert open spaces, valleys, mountains, and mountain ranges are available from a variety of points on public roadways, but would not result in appreciable visual alterations to the viewshed. In addition, construction of the Proposed Project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the Proposed Project area. During nighttime construction activities, impacts on neighboring properties would be reduced by directing light on the Proposed Project site and away from surrounding areas.

Construction activities are expected to last approximately 15 months, and any potential impacts to visual character and quality of the Proposed Project area would be temporary. Other projects anticipated to be constructed in the vicinity of the Proposed Project would use similar types of construction equipment (with the possible exception of helicopters); collectively, however, the addition of Proposed Project construction activities would not substantially alter the amount, frequency, or duration of construction activities in the vicinity of the Proposed Project, and any

impacts would be considered incremental. Therefore, construction of the Proposed Project would not contribute to a cumulatively considerable aesthetic impact.

4.18.2.2 Operation

Permanent cumulative visual impacts could occur as a result of Proposed Project components being located near other projects in the area. Visual changes in the area would result from O&M of the Proposed Project and other projects. O&M of the Proposed Project would result in a less-than-significant impact on scenic resources and the existing visual character, because O&M activities associated would be similar to those currently performed for the existing facilities, though additional O&M activities associated with the proposed mid-line series capacitors[9] and fiber optic repeater facilities would result in a minor increase in O&M activities. In addition, O&M of the Proposed Project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the Proposed Project area, as any change from the existing substation would be minor and incremental in nature. The proposed Newberry Springs and Ludlow Series Capacitors would utilize outdoor yard lighting. To minimize potential aesthetic impacts related to light and glare from sensitive receptors during construction, the lighting would be manually controlled and would normally be in the "off" position. In addition, the lighting would only be used during O&M or emergencies and directed downward to avoid glare.

Visual character in the area would be altered more significantly by other new projects on currently vacant land—including the Tapestry Specific Plan project located less than 0.1 mile from the Lugo-Mohave 500 kV Transmission Line—rather than by the Proposed Project, which proposes incremental changes to an existing viewshed. In general, the planned and proposed projects would increase urban development in the area and reduce open, undeveloped areas, whereas the Proposed Project includes modification and addition of facilities to three existing transmission lines located mainly within SCE's existing ROWs. The LVRAS project has been identified within 0.5 mile of the Proposed Project; however, the LVRAS project will be located within SCE's existing ROW on the Eldorado-Lugo 500kV Transmission Line and will result in incremental changes to an existing transmission line. The Calcite Substation Project is located approximately 0.3 mile from the Barstow Fiber Optic Repeater site; however, the fiber optic repeater site is located near existing lattice steel towers (LSTs), and the view of the facility is somewhat camouflaged by the presence of existing residential and outbuildings, as well as farming equipment that is stored in the area. No planned or proposed projects are located within 0.5 mile of the Kelbaker Fiber Optic Repeater site or the Lanfair Fiber Optic Repeater site. The remainder of the projects located within 0.5 mile of the Proposed Project are located in areas already characterized by existing substations and overhead transmission lines supported by LSTs, and the activities associated with construction of the Proposed Project would not result in appreciable visual alterations to the viewshed. Thus, when considered together, these projects are not anticipated to result in a cumulatively considerable aesthetic impact.

[9] The Proposed Project includes construction of two new 500 kV mid-line series capacitors—the proposed Newberry Springs Series Capacitor and Ludlow Series Capacitor.

4.18.3 Agriculture and Forestry Resources

4.18.3.1 Construction

Cumulative impacts to agriculture and forestry resources could result from the loss of farmland or forestry land or the disruption of agricultural practices. Construction of the Proposed Project would have a less-than-significant impact on land zoned for agriculture. However, agricultural and forestry impacts from the Proposed Project would be temporary and would not result in the permanent conversion of land zoned for agriculture. Although the Proposed Project crosses approximately 2.5 miles of land zoned for agricultural use, no permanent change in zoning would be required for these areas. There would be no permanent, aboveground facilities on lands under a Williamson Act contract, and the Proposed Project would not require the cancellation of any Williamson Act contracts and would not contribute to a cumulatively considerable impact to lands under a Williamson Act contract. A majority of the Proposed Project is located within existing SCE ROW.

Based on a review of available environmental review documents, the Tapestry Specific Plan project is expected to affect agricultural resources. Construction of the Tapestry Specific Plan project has the potential to indirectly impact existing agricultural uses or zoning during construction; however, the current agricultural areas adjacent to the Tapestry Specific Plan project would be adjacent to open spaces and parks and would have buffers for future agricultural activities. Additionally, the Proposed Project and other planned and proposed projects would not directly preclude or convert agricultural activities in the surrounding area. Therefore, cumulative impacts to agricultural resources during construction would be less than significant.

The existing Eldorado-Lugo and Lugo-Mohave 500 kV Transmission Lines span approximately 0.4 mile of mapped forest land. Two proposed landing zones would be located within mapped forest land. Construction of the Proposed Project would not result in the loss of forest land or conversion of forest land to non-forest use; and following construction, the proposed landing zones would be restored to pre-construction conditions.

The Proposed Project would not involve changes to the existing environment that would have the potential to convert farmland to non-agricultural use or forest land to non-forest use. The Proposed Project would modify existing facilities within existing and to-be-acquired franchise areas and SCE ROWs, and no expansion of ROW is proposed within agricultural or forest lands that could lead to future conversion of these lands. Therefore, the Proposed Project would not contribute to a cumulatively considerable impact related to agriculture and forestry resources during construction.

4.18.3.2 Operation

O&M of the Proposed Project would have no impacts to agriculture and forestry resources. Therefore, the Proposed Project would not contribute to a cumulatively considerable impact related to agriculture and forestry resources during O&M.

4.18.4 Air Quality

4.18.4.1 Construction

As described in Section 4.3, Air Quality, sources of construction-based air pollution would include fugitive dust and tailpipe emissions. The Proposed Project's uncontrolled emissions would exceed the applicable Mojave Desert Air Quality Management District (MDAQMD) annual emission thresholds for particulate matter (PM) less than 10 microns in diameter (PM_{10}) and PM less than 2.5 microns in diameter ($PM_{2.5}$). The Proposed Project would be below the applicable MDAQMD annual emission thresholds for nitrogen oxides (NO_x) and carbon monoxide (CO). With the implementation of the applicant-proposed measures (APMs) described in Section 4.3, Air Quality, the Proposed Project's controlled emissions would be below the applicable MDAQMD and United States Environmental Protection Agency annual emission thresholds for NO_x, CO, PM_{10}, $PM_{2.5}$, and other pollutants. As a result, all emissions would be below the applicable thresholds, and impacts would be less than significant.

SCE anticipates that construction of the Proposed Project would take approximately 15 months, from second quarter 2019 through June 2020. This construction timeline could potentially overlap with construction activities for three of the projects listed in Table 4.18-1: Cumulative Projects within 1 Mile of the Proposed Project and one of the projects listed in Table 4.18-2: Cumulative Projects within 5 Miles of the Proposed Project. One additional project in Table 4.18-2: Cumulative Projects within 5 Miles of the Proposed Project could overlap with the Proposed Project, but the impacts are unknown because the environmental review document was unavailable at the time of this analysis. In addition, the construction schedules for nine additional projects listed in Table 4.18-1: Cumulative Projects within 1 Mile of the Proposed Project and 33 additional projects listed in Table 4.18-2: Cumulative Projects within 5 Miles of the Proposed Project are unknown and could potentially overlap with the Proposed Project, as could additional projects occurring elsewhere within the Mojave Desert Air Basin. These projects, as well as other projects within the Proposed Project area, would be required to comply with local ordinances and regulations concerning air quality, including dust control, during construction activities. However, given the potential overlap in construction schedules for these projects and the Proposed Project, cumulative impacts to air quality are anticipated to be less than significant.

4.18.4.2 Operation

During O&M, a significant impact may occur if a project is inconsistent with the rules and regulations of the MDAQMD and Clark County DAQ's annual thresholds, or if it induces population growth. Other projects that would contribute to a potential cumulative air quality impact generally include those that would induce population growth, such as the large residential and condominium developments listed in Table 4.18-1: Cumulative Projects within 1 Mile of the Proposed Project and Table 4.18-2: Cumulative Projects within 5 Miles of the Proposed Project. However, the Proposed Project would not contribute to this cumulative impact because it would not facilitate an increased capacity resulting in future population growth. Additionally, O&M activities associated with the Proposed Project would be similar to those currently performed for the existing facilities, though additional O&M activities associated with the proposed mid-line series capacitors and fiber optic repeater facilities would result in a minor increase in O&M activities. As a result, there would be a minor increase in emissions due to O&M activities;

however, the Proposed Project would not contribute to a cumulatively considerable impact related to air quality during O&M.

4.18.5 Biological Resources

4.18.5.1 Construction

As discussed in Section 4.4, Biological Resources, the Proposed Project has the potential to temporarily and permanently affect sensitive natural communities, special-status plant and wildlife species, wildlife population and movement patterns, and jurisdictional waters. Construction activities that could affect these resources include site preparation, vegetation removal, grading, movement and staging of equipment and vehicles, and tower modification work. Cumulative impacts to biological resources could occur as a result of increased ground-disturbing activities by multiple projects. These cumulative activities could increase the disruption of normal animal breeding, foraging, and migration behavior, the removal of suitable habitat for multiple special-status plant and wildlife species, and the degradation of jurisdictional water features.

This section analyzes the potential cumulative impacts that other proposed projects may have on the biological resources that would likely be impacted by the Proposed Project. Construction of the Proposed Project could occur simultaneously with construction of four of the projects listed in Table 4.18-1: Cumulative Projects within 1 Mile of the Proposed Project and Table 4.18-2: Cumulative Projects within 5 Miles of the Proposed Project, including the LVRAS Project, Harry Allen to Eldorado 500 kV Transmission Line Project, Calcite Substation Project, and the TransWest Express Transmission Project. One additional project from Table 4.18-2: Cumulative Projects within 5 Miles of the Proposed Project could overlap with the Proposed Project, but the impacts are unknown because the environmental review document was unavailable at the time of this analysis. Nine projects listed in Table 4.18-1: Cumulative Projects within 1 Mile of the Proposed Project and 33 projects listed in Table 4.18-2: Cumulative Projects within 5 Miles of the Proposed Project have construction timelines that are unknown and could potentially overlap with the Proposed Project. Of these projects, 14 are anticipated to impact some of the same sensitive natural communities, special-status species, or habitats as the Proposed Project.

One sensitive natural community—*Yucca brevifolia* Woodland Alliance (Joshua tree woodland)—occurs in both the Proposed Project area and other project areas within 5 miles, including the Tapestry Specific Plan and the Ranchero Road Corridor Project – Phases I, II, and III. These two projects would require the removal of Joshua trees. However, the Proposed Project's impacts to this sensitive natural community would be temporary and it is unlikely that any Joshua trees would need to be removed. The County of San Bernardino and the City of Hesperia require projects within their jurisdictions to obtain a permit for the removal Joshua trees and to transplant or replace the trees at an appropriate ratio. With the implementation of these measures, cumulative impacts to this natural community would be negligible. The other types of sensitive natural communities present in the Proposed Project area do not overlap with other projects in the 5-mile radius, and cumulative impacts to these communities would not occur.

As discussed in Section 4.4, Biological Resources, five special-status plant species would be temporarily impacted by the Proposed Project. Construction activities associated with the Proposed Project (i.e., earth-moving/grading, vegetation removal, and vehicle travel) have the

potential to result in mortality of special-status plants that occur within temporary construction areas. However, Applicant-Proposed Measures (APMs), which include a revegetation plan and conducting special status plant surveys prior to construction, would be implemented to reduce the impact to special-status plants to less than significant. Of the other projects within 5 miles of the Proposed Project, none are proposed to impact special-status plants. Thus, cumulative impacts are not expected.

The Proposed Project would temporarily impact approximately 45.8 acres and permanently impact 0.2 acre of suitable critical habitat for desert tortoise. Other proposed projects within 5 miles, including the TransWest Express Transmission Project, would impact large quantities of desert tortoise habitat (i.e., greater than 400 acres). In addition, the LVRAS Project, located adjacent to the Proposed Project, could impact 95.1 acres of occupied desert tortoise habitat, including 44.7 acres of critical habitat. However, the impacts would be spread across 84 miles of the alignment. Cumulatively, these projects could contribute to habitat fragmentation and degradation, removal of food and shelter resources, changing normal behavior patterns, and attracting predator species such as ravens (*Corvus corax*) and coyotes (*Canis latrans*). However, all of these projects would be subject to permitting and mitigation requirements under the Federal Endangered Species Act and California Endangered Species Act, which are intended to minimize and mitigate for impacts to species, both at the project level and in a regional context. The Proposed Project would implement APMs, including pre-activity surveys, monitoring, under vehicle checks, and excavation of desert tortoise burrows, and would compensate for permanent impacts at a one-to-one ratio, or as required by the USFWS. Other projects would likely implement similar measures. These APMs would reduce the Proposed Project's contribution to cumulative impacts. Therefore, cumulative impacts to desert tortoise and its critical habitat are expected to be less than significant after the required avoidance, minimization, and compensatory mitigation measures are implemented.

The Proposed Project would result in impacts to suitable habitat for other special-status wildlife including American badger (*Taxidea taxus*), banded Gila monster (*Heloderma suspectum cinctum*), Bendire's thrasher (*Toxostoma bendirei*), desert bighorn sheep (*Ovis canadensis nelson*), golden eagle (*Aquila chrysaetos*), Mojave fringe-toed lizard (*Uma scoparia*), pallid bat (*Antrozous pallidus*), and western burrowing owl (*Athena cunicularia*). There is evidence of the presence of desert bighorn sheep in the Proposed Project area, but the other species were not observed during surveys. Other proposed projects may also impact suitable habitat for one or more of those species. For example, the TransWest Express Transmission Project will impact potential habitat for desert bighorn sheep, banded Gila monster, and pallid bat. The Laughlin-Bullhead City Bridge Project will also impact banded Gila monster habitat, but the quantity was not specified in the project's Environmental Assessment (EA). The Rattlesnake Mountain OHV Trails Project is expected to impact habitat for San Diego American badger and pallid bat, but the quantities were also not given in that project's EA. However, many of the effects of that project are expected to be beneficial to the habitat and the impacts were determined to be less than significant. Cumulative impacts to these species can be avoided by the Proposed Project and other projects by implementing measures to avoid, minimize, and/or compensate for impacts to the species and their habitats.

Construction of the Proposed Project would result in 8.8 acres of permanent impacts to suitable foraging and nesting habitat for special-status avian species, including Bendire's thrasher

(*Toxostoma bendirei*), golden eagle (*Aquila chrysaetos*), and western burrowing owl (*Athene cunicularia*). Cumulative impacts to these species and others protected under the Migratory Bird Treaty Act may result from the disturbance or degradation of suitable foraging and nesting habitat within 5 miles of the Proposed Project. The Tapestry Specific Plan is proposed to impact 5,867 acres of golden eagle foraging habitat. However, with the collective implementation of APMs and any required compensatory habitat mitigation, cumulative impacts to avian species are anticipated to be reduced to a less-than-significant level.

As discussed in Section 4.4, Biological Resources, the proposed facilities would be constructed in disturbed areas that are not suitable for use as wildlife migration corridors. The majority of the Proposed Project's activities would occur within small, discontinuous areas, and would not create a barrier for terrestrial species that may use the surrounding area as a wildlife corridor. Other large projects within 5 miles, such as the Tapestry Specific Plan, may have effects on wildlife movements. However, the Proposed Project would not contribute to the cumulative impact.

Construction of the Proposed Project would result in direct temporary impacts to approximately 9.2 acres of water features potentially under the jurisdiction of the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Boards (RWQCBs),[10] and Nevada Department of Environmental Protection (NDEP), and 11.9 acres under the jurisdiction of the CDFW. Construction of the Proposed Project would also result in permanent impacts to less than 0.1 acre of jurisdictional water features. Other projects have the potential to impact jurisdictional waters/wetlands and riparian areas, including the Ranchero Road Corridor Project – Phases I, II, and III; Hacienda at Fairview Valley Specific Plan; Tapestry Specific Plan; and TransWest Express Transmission Project. Any project impacting jurisdictional water features would obtain the necessary permits from the USACE pursuant to the Clean Water Act (CWA) Section 404; the RWQCB and the NDEP Bureau of Water Quality Planning pursuant to CWA Section 401; and the CDFW pursuant to the California Fish and Game Code Section 1600. Implementation of permit conditions would minimize and mitigate for impacts to these resources at the project level and a watershed level. Accordingly, cumulative impacts to jurisdictional waters are expected to be less than significant.

4.18.5.2 Operation

Following construction of the Proposed Project, O&M activities are expected to be similar to current practices, with additional O&M activities associated with the proposed mid-line series capacitors and fiber optic repeater facilities. No permanent losses of habitat, special-status species, or jurisdictional waters are expected to occur. The majority of O&M activities would occur in previously disturbed areas. For those activities that may require work in previously undisturbed areas, impacts would be temporary, and disturbed areas would be restored to pre-activity conditions. Similarly, O&M activities associated with other proposed projects are not expected to have a cumulatively considerable impact. Therefore, cumulative impacts are anticipated to be less than significant.

[10] Because the Proposed Project spans two RWQCBs, the State Water Resources Control Board would handle jurisdictional water permitting for the Proposed Project.

4.18.6 Cultural Resources

4.18.6.1 Construction

Cumulative impacts to cultural resources could occur as a result of increased ground-disturbing activities from the construction of multiple projects within the area. Ground-disturbing activities associated with the Proposed Project would include construction of the proposed Newberry Springs and Ludlow Series Capacitors; installation of the proposed Barstow, Kelbaker, and Lanfair Fiber Optic Repeaters; grading for new and existing access roads; installation of underground telecommunications facilities; and grading required to address two of the 16 potential overhead clearance discrepancies.[11]

Construction activities requiring ground disturbance could potentially disturb subsurface soils and affect buried cultural deposits or archaeological sites in the Proposed Project area. However, SCE would implement APM-CUL-03 prior to construction, which includes the preparation of a Cultural Resources Management Plan with the objectives of management, avoidance, and/or minimization of potential adverse effects on cultural resources. Portions of the Proposed Project and multiple other projects would occur within areas that have not been previously disturbed or developed, including the following projects that have an identified potential to impact cultural resources during environmental review:

- Harry Allen to Eldorado 500 kV Transmission Line Project
- Tapestry Specific Plan

A Permit to Construct for the Harry Allen to Eldorado 500 kV Transmission Line Project was prepared in 2014. Survey results found cultural resources and known National Register of Historic Places-eligible cultural sites; however, avoidance and minimization measures, as well as ongoing monitoring, would be implemented. Additionally, the Tapestry Specific Plan project is currently in litigation and is therefore not likely to overlap with the Proposed Project.

No fossil localities were identified within the boundaries of the Proposed Project area. However, several geologic units designated with a high paleontological sensitivity underlie the Proposed Project area. Therefore, SCE would implement APM-CUL-04 prior to construction of the Proposed Project, which includes the preparation of a Paleontological Resources Mitigation and Monitoring Plan (PRMMP). The PRMMP would outline procedures for monitoring in areas that contain sensitive paleontological resources. The PRMMP would also include recovery and treatment protocols if sensitive paleontological resources are discovered during ground-disturbing construction activities. Additionally, the planned and proposed projects listed in Table 4.18-1: Cumulative Projects within 1 Mile of the Proposed Project that are underlain by geologic rock units/formations with high or very high paleontological sensitivity would be required to

[11] SCE has defined "discrepancies" 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. SCE has identified approximately 16 discrepancies along the Eldorado-Lugo, Eldorado-Mohave, and Lugo-Mohave 500 kV Transmission Lines, where minor grading, or relocation, replacement, or modification of transmission, subtransmission, or distribution facilities are needed to address California Public Utilities Commission (CPUC) General Order (G.O.) 95 and National Electrical Safety Code overhead clearance requirements.

implement similar strategies in the event of an unanticipated discovery. Therefore, with the implementation of APMs, a cumulatively considerable impact to paleontological resources is not anticipated.

4.18.6.2 Operation

As previously described, O&M activities associated with the Proposed Project would be similar to those currently performed for the existing facilities, with additional O&M activities associated with the proposed mid-line series capacitors and fiber optic repeater facilities. O&M of the mid-line series capacitors and fiber optic repeater sites would involve minimal ground disturbance (if any) within previously disturbed areas. Therefore, O&M activities would not cause a substantial adverse change in the significance of a cultural or paleontological resource, and the Proposed Project would not contribute to a cumulatively considerable impact related to cultural or paleontological resources.

4.18.7 Geology and Soils

4.18.7.1 Construction and Operation

The potential cumulative impacts that may occur as a result of the Proposed Project—in conjunction with other planned and proposed projects—include threats to human safety and structural integrity, soil erosion or topsoil loss, geologic unit instability, or construction on expansive soils. Construction of the Proposed Project and a majority of the planned and proposed projects listed in Table 4.18-1: Cumulative Projects within 1 Mile of the Proposed Project that would include ground-disturbing activities and could potentially impact soils. Grading at construction sites can result in soil erosion and sedimentation, as well as loss of topsoil.

The potential for soil erosion and sedimentation would be minimized through the implementation of Storm Water Pollution Prevention Plans (SWPPPs) and best management practices (BMPs), which are required for all projects that disturb 1 or more acres of soil. All of the projects, and the Proposed Project, would be designed to meet current building code and safety standards and would be required to adhere to regulations that limit developments on steep slopes and in landslide areas, thereby ensuring that the potential for long-term cumulative impacts are less than significant. As a result, the potential for a significant cumulative impact to geology and soils is low and is not expected to be significant.

4.18.8 Greenhouse Gas Emissions

4.18.8.1 Construction and Operation

Construction of the Proposed Project would potentially overlap with construction activities for three of the projects listed in Table 4.18-1: Cumulative Projects within 1 Mile of the Proposed Project and one of the projects listed in Table 4.18-2: Cumulative Projects within 5 Miles of the Proposed Project. One additional project could overlap with the Proposed Project in Table 4.18-2: Cumulative Projects within 5 Miles of the Proposed Project, but the impacts are unknown because the environmental review document was unavailable at the time of this analysis. In addition, the construction schedules for nine additional projects listed in Table 4.18-1: Cumulative Projects within 1 Mile of the Proposed Project and 33 additional projects listed in Table 4.18-2: Cumulative Projects within 5 Miles of the Proposed Project are unknown and

could potentially overlap with the Proposed Project. A cumulative GHG impact in the Proposed Project area could occur during construction of these projects, as well as other projects located within the Mojave Desert Air Basin. The main source of GHG emissions associated with the Proposed Project would be fossil fuel combustion in vehicles and equipment used during construction. As discussed in Section 4.7, Greenhouse Gas Emissions, the total of amortized construction emissions and annual operational GHG emissions associated with the Proposed Project would be approximately 8,955.1 tons of carbon dioxide equivalent (CO_2e) in 2019 and 4,297.0 tons in 2020. Because emissions generated during Proposed Project construction are projected to be well below the 100,000-ton CO_2e annual threshold, impacts would be less than significant. Regardless, SCE has taken proactive steps to meet the California Air Resources Board's standards, which would minimize the potential for the Proposed Project's construction activities to contribute GHG emissions. The other projects in the area would also be required to adhere to the MDAQMD standards and requirements. As a result, cumulative impacts are not anticipated.

Fossil fuel combustion during periodic O&M activities and on-road vehicle travel associated with employee travel to and from the Proposed Project would be an additional source of GHG emissions. Periodic maintenance and repair activities would continue to be conducted at a similar frequency and intensity as they are for the existing facilities, with negligible increases associated with the new capacitors and repeaters. Leakage of sulfur hexafluoride from the new circuit breakers upgraded at Eldorado, Lugo, and Mohave Substations would also generate GHG emissions; however, the amortized construction emissions would be below the 100,000-ton CO_2e annual threshold. Other projects that would contribute to GHG accumulation generally include those that would induce population growth, such as the large residential and condominium developments listed in Table 4.18-1: Cumulative Projects within 1 Mile of the Proposed Project and Table 4.18-2: Cumulative Projects within 5 Miles of the Proposed Project. However, the Proposed Project would not contribute to this cumulative impact because the O&M activities associated with the Proposed Project would be similar to those currently performed by SCE for existing facilities, with negligible increases associated with the proposed mid-line series capacitors and fiber optic repeaters, and the Proposed Project would not facilitate an increased capacity resulting in future growth. Therefore, the cumulative impacts related to GHG emissions would be less than significant.

4.18.9 Hazards and Hazardous Materials

4.18.9.1 Construction

Cumulative impacts to hazards and/or hazardous materials can result from the concurrent construction of planned and proposed projects and the Proposed Project having an increased effect on public or worker safety, including exposure to hazardous materials, increased fire potential, or physical hazards. The projects listed in Table 4.18-1: Cumulative Projects within 1 Mile of the Proposed Project could involve the storage, use, transport, and potential for accidental release of hazardous materials that are similar to those described for the Proposed Project. Additionally, construction of the Proposed Project and three of the planned projects would occur simultaneously; and nine projects do not have a defined timeline and could potentially occur simultaneously as well. As a result, several of these projects have the potential to result in a cumulative impact related to overall hazards or hazardous materials when combined with the Proposed Project. Because each of these projects requires combustion-driven

construction equipment, these projects have the potential to create a temporary impact from accidental releases of diesel and gasoline fuel, hydraulic fluids, and other hazardous liquids. While no impact is anticipated, there is a potential for accidental spills or leaks. Though this potential hazard would exist during construction when equipment is located on site, it is very unlikely that simultaneous spills would occur in the immediate vicinity during a similar timeframe. Large releases of hazardous materials from multiple projects are highly unlikely when projects adhere to federal and State regulations.

The Proposed Project and the planned and proposed projects would be required to comply with existing hazardous materials regulations (e.g., regulations administered by the U.S. Environmental Protection Agency, the California Environmental Protection Agency, and the California Department of Toxic Substances Control). A Proposed Project-specific Hazardous Materials Management Plan would be prepared and implemented throughout construction of the Proposed Project. Proposed Project-specific BMPs, as part of the SWPPPs and implementation of the WEAP, would reduce potential impacts from hazardous material incidents from the Proposed Project to a less-than-significant level. Small releases would be contained, cleaned up, and disposed of properly. Hazardous materials would be disposed of at State-approved, local facilities that accept hazardous waste materials, in accordance with all applicable laws and regulations. Because the planned and proposed projects are presumed to be in compliance with the same federal and State regulations and include the same or similar measures to mitigate potential impacts from hazardous wastes, the cumulative impacts related to hazardous materials are anticipated to be less than significant.

The majority of the Proposed Project is located within the California Department of Forestry and Fire Protection's (CAL FIRE's) moderate fire hazard severity zones. Portions of the Proposed Project are also located within the high and very high fire hazard severity zone, as well as some areas designated as non-wildland/non-urban land. The Proposed Project and 10 projects listed in Table 4.18-1: Cumulative Projects within 1 Mile of the Proposed Project with construction timelines that could potentially overlap with construction of the Proposed Project are located in moderate fire hazard severity zones, and none are located within high or very high fire hazard severity zones. The Proposed Project would be designed to meet the requirements of the CPUC's G.O. 95; and SCE participates with CAL FIRE, the California Governor's Office of Emergency Services, the U.S. Forest Service, and various city and county fire agencies in the Red Flag Fire Prevention Program and complies with California Public Resources Code Sections 4292 and 4293 related to vegetation management in transmission line corridors. It is assumed that the other planned and proposed projects would implement similar measures to reduce the risk of wildland fire hazards. As a result, the Proposed Project's contribution to a cumulative effect related to the exposure of people or structures to a risk of loss, injury, or death from wildland fires would be less than significant.

Construction of the Proposed Project and projects listed in Table 4.18-1: Cumulative Projects within 1 Mile of the Proposed Project may require temporary road or lane closures, which could impact implementation of adopted emergency response plans. Road closures and encroachment into public roadways could increase hazards if the appropriate safety measures (e.g., proper signage, orange cones, and flaggers) are not in place. However, SCE and applicants for the planned and proposed projects would obtain the required encroachment permits from the local jurisdictions and implement traffic control measures accordingly. In addition, SCE would

coordinate with local authorities, including emergency responders, regarding appropriate procedures. Therefore, emergency access would not be directly impacted during construction. As a result, the Proposed Project's contribution to a cumulative effect on implementation of adopted emergency response plans would be less than significant.

4.18.9.2 Operation

During O&M, the Proposed Project would continue to operate in a manner that is similar to current conditions, though additional O&M activities associated with the proposed mid-line series capacitors and fiber optic repeater facilities would result in a minor increase in O&M activities. In addition, similar levels of hazardous materials would be stored or used on site. The projects within 0.25 mile of the Proposed Project listed in Table 4.18-1: Cumulative Projects within 1 Mile of the Proposed Project are mostly residential and energy infrastructure projects and would not likely involve the storage, use, transport, and potential for accidental release of hazardous materials following completion of construction. As a result, the Proposed Project's contribution to a cumulative effect on hazards and hazardous materials would be minor and would not result in a significant impact.

4.18.10 Hydrology and Water Quality

4.18.10.1 Construction

Cumulative impacts to hydrology and water quality could potentially result from increases in local groundwater use and alterations to the existing and natural drainage patterns of the landscape, as well as from increases in sedimentation of or contamination to surface waters. Construction of the Proposed Project could occur simultaneously with three of the projects listed in Table 4.18-1: Cumulative Projects within 1 Mile of the Proposed Project and one of the projects listed in Table 4.18-2: Cumulative Projects within 5 Miles of the Proposed Project. Nine projects listed in Table 4.18-1: Cumulative Projects within 1 Mile of the Proposed Project and 33 projects listed in Table 4.18-2: Cumulative Projects within 5 Miles of the Proposed Project have construction timelines that are unknown and could overlap with the Proposed Project. One additional project in Table 4.18-2: Cumulative Projects within 5 Miles of the Proposed Project could overlap with the Proposed Project, but the impacts are unknown because the environmental review document was unavailable at the time of this analysis.

As described in Section 4.9, Hydrology and Water Quality, the Proposed Project would draw water from local water sources as a dust suppressant during construction. Because the amount of water utilized for the Proposed Project is minor compared to the amount of water available from purveyors, as described in Section 4.17, Utilities and Service Systems, the Proposed Project would not substantially deplete groundwater supplies such that there would be a net deficit in aquifer volume or lowering of the local groundwater table level. Potential water purveyors that would support construction activities near Lugo Substation include the following:

- City of Hesperia Water District (65-million-gallon capacity)
- Phelan Piñon Hills Community Service District (1.4-billion-gallon capacity)
- City of Victorville Water District (11.4-billion-gallon capacity)
- San Bernardino County Service Area 42 – Oro Grande (246,000-gallon capacity)

The Golden State Water Company in the City of Barstow (1.7-billion-gallon capacity) would potentially provide water for construction activities conducted in the vicinity of Pisgah Substation. EPCOR Water (9.8-million-gallon capacity) would support construction near Mohave Substation. Construction near Eldorado Substation would utilize water from the City of Henderson Utility Services (97-billion-gallon capacity), Las Vegas Valley Water District (900-million-gallon capacity), and the Utilities Department of North Las Vegas (11.4-million-gallon capacity).

With the amount of water that could be provided by the local water purveyors, SCE would confirm that the local water purveyors would have enough resources to prevent a substantial depletion of groundwater supply and recharge. Reclaimed water would also be used for the Proposed Project, if feasible. It is anticipated that approximately 124,200 gallons of water per day would typically be used during construction of the Proposed Project, and approximately 146,000 gallons of water per day would be used during peak construction activities. The water service purveyors would be responsible for determining whether a sufficient water supply is available to meet water demands for the Proposed Project and the planned and proposed projects. As a result, the Proposed Project would not contribute to a cumulatively considerable depletion of groundwater supplies, and there would be a less-than-significant impact.

Construction of the Proposed Project would result in an increase in the total impervious surfaces within the Proposed Project area. However, these impervious surfaces would not be contiguous and would not impede groundwater recharge at the site. Furthermore, there are enough pervious surfaces within the Proposed Project site to allow rain water and storm water runoff to continue to infiltrate the ground surface, similar to pre-construction conditions. Due to the size of the groundwater basins in relation to the planned and proposed project sites and the large surrounding area that is undeveloped and pervious, the additional impervious surfaces are unlikely to negatively affect groundwater recharge capacity in the vicinity. Therefore, the Proposed Project would not contribute to a cumulatively considerable impact related to groundwater recharge.

A few of the planned and proposed projects, including the LVRAS Project, have the potential to result in a cumulative impact to surface water and drainage if constructed concurrently with the Proposed Project. Pollutants or sediment disturbed during grading or construction could potentially enter the watershed and increase the potential for construction-related contaminants to reach surface water or groundwater. However, other planned and proposed projects within the Proposed Project area would be required to conform to the regulations and policies of the National Pollutant Discharge Elimination System Construction General Permit, which requires the implementation of SWPPPs and BMPs to reduce potential construction-related (and long-term) impacts on hydrology and water quality to less-than-significant levels. As a result, a cumulative impact to water quality is not anticipated.

4.18.10.2 Operation

Cumulative impacts during O&M could result from multiple projects altering water courses. Under Section 402 of the Clean Water Act, all projects disturbing more than 1 acre would be required to obtain a General Construction Permit, which would require the implementation of SWPPPs and BMPs to avoid erosion and water quality degradation. Once the Proposed Project is

constructed, O&M would remain similar to current practices, with negligible increases associated with the proposed mid-line series capacitors and fiber optic repeaters. Surface water and groundwater would not be affected. If grading or ground disturbance is necessary during the course of O&M activities, water features would be avoided and BMPs would be implemented to protect water quality. Afterward, temporary work areas would be restored to pre-existing conditions to avoid increases in runoff or changes in drainage patterns. With the implementation of SWPPPs and BMPs, cumulative impacts to water resources from other projects would be less than significant, and the Proposed Project would not contribute to a cumulative impact.

4.18.11 Noise

4.18.11.1 Construction

Construction of the Proposed Project could occur simultaneously with three of the projects listed in Table 4.18-1: Cumulative Projects within 1 Mile of the Proposed Project. In addition, nine planned and proposed projects do not have a defined timeline and could be constructed within the same or a similar construction timeline. The simultaneous construction of these projects could result in a cumulative impact to overall noise levels when combined with the Proposed Project. Other projects (e.g., the Tapestry Specific Plan) would also generate noise impacts during construction, and a temporary cumulative increase in noise could result when construction of these and other projects occur simultaneously with construction of the Proposed Project. However, the Tapestry Specific Plan project is currently in litigation and is therefore not likely to overlap with the Proposed Project; therefore, the potential for a cumulative impact is very low.

Construction of the planned and proposed projects that could occur simultaneously with the Proposed Project would be generally limited to the timeframes established by the local noise ordinances. Construction of the Proposed Project would also typically be limited to the hours specified in the local municipal codes, and SCE would implement APMs to reduce and control potential noise impacts on sensitive receptors. Therefore, a temporary cumulative noise impact during construction is not anticipated to be significant.

4.18.11.2 Operation

Long-term O&M of the Proposed Project has the potential to increase noise levels due to the two proposed mid-line series capacitors and the three fiber optic repeater sites, which would be new sources of ambient noise as a result of regular operation. The anticipated noise levels would comply with all applicable noise ordinances; therefore, the ambient noise from these facilities would not represent a significant increase in ambient noise levels. No planned or proposed projects have been identified within 0.5 mile of the new capacitor sites. The Tapestry Specific Plan project has the potential to increase noise after it has been constructed; however, this project is more than 10 miles from the mid-line series capacitors and the fiber optic repeater sites. The Calcite Substation Project is located approximately 0.3 mile from the Barstow Fiber Optic Repeater site; however, noise generated by the anticipated air conditioning equipment for the Barstow Fiber Optic Repeater site is not expected to exceed the nighttime noise limits for residential properties in the local jurisdictions. Noise from the generator at the Barstow Fiber Optic Repeater site would only be used and tested occasionally, and would not exceed local standards. No planned or proposed projects are located within 0.5 mile of the Kelbaker Fiber

Optic Repeater site or the Lanfair Fiber Optic Repeater site. Therefore, a permanent cumulative noise impact would not result.

4.18.12 Recreation

4.18.12.1 Construction

Cumulative impacts to recreation could result from impacts or changes to recreational facilities during construction of the Proposed Project in conjunction with other planned and proposed projects. The Proposed Project would not cause population growth that would result in the increased use of existing parks or require the construction of new recreational facilities. Though the following 10 recreational facilities would not be physically altered by construction of the Proposed Project, they would be located adjacent to or would be crossed by the Proposed Project:

- Rodman Mountains Wilderness
- Kelso Dunes Wilderness
- Bristol Mountains Wilderness
- Dead Mountains Wilderness
- Mojave Trails National Monument
- Mojave National Preserve and Mojave Wilderness
- Lake Mead National Recreation Area
- Bridge Canyon Wilderness
- Big Bend of the Colorado State Recreation Area
- Old Spanish National Historic Trail

The construction schedule for the Proposed Project could overlap with the construction schedules of three of the planned and proposed projects listed in Table 4.18-1: Cumulative Projects within 1 Mile of the Proposed Project. Nine projects have construction timelines that are unknown and could overlap with the Proposed Project. However, only the Rehabilitate Five Campsites – Pilot Project for Roadside Campsite Management Plan project would occur within or adjacent to any of the recreational facilities temporarily impacted by the Proposed Project, and that project would not preclude recreational activities in the Mojave National Preserve or affect the condition of nearby parks. Access to informal trails used by all-terrain vehicle users could temporarily be blocked during construction of the Proposed Project, and construction activities within these recreational facilities may increase the use of surrounding recreational facilities; however, any resulting use would be brief and temporary, and would have a negligible effect on the condition of the nearby parks. Construction of the Proposed Project and the planned and proposed projects listed in Table 4.18-1: Cumulative Projects within 1 Mile of the Proposed Project would not restrict residents' access to nearby recreational facilities. Therefore, the Proposed Project would not have a cumulative effect on recreation.

4.18.12.2 Operation

As previously described, O&M activities associated with the Proposed Project would be similar to those currently performed for the existing facilities, with additional O&M activities associated with the proposed mid-line series capacitors and fiber optic repeater facilities. O&M practices do not typically impact recreational uses or facilities in the area, and O&M of the Proposed Project

would not introduce new employees into the area and therefore would not require construction of new or expanded recreational facilities. Therefore, the Proposed Project would not contribute to a cumulatively considerable impact related to recreation during O&M.

4.18.13 Transportation and Traffic

4.18.13.1 Construction

During construction, cumulative traffic impacts could occur from projects that have overlapping construction timeframes. Construction of the Proposed Project would occur over approximately 15 months. The Proposed Project could overlap with three of the projects listed in Table 4.18-1: Cumulative Projects within 1 Mile of the Proposed Project. In addition, nine planned and proposed projects do not have a defined timeline and could be constructed within the same or a similar construction timeline. As described in Section 4.16, Transportation and Traffic, Proposed Project-related traffic would be limited to the transport of supplies to and from construction areas and material supply sources, as well as construction crews accessing the site. Crews would be spread out and assigned to several different Proposed Project components on any given day, which would prevent traffic congestion at any one location. Vehicle access would primarily occur along existing local roads, access roads, and service roads within existing SCE ROWs.

Temporary lane closures may be necessary in areas where existing or proposed structures are located adjacent to roadways and during conductor stringing operations. Construction activities may not require lane closures in areas where road shoulders are present or where bike lanes, parking spaces, or other areas are located adjacent to the roadway. Traffic controls would be in place during all construction activities requiring temporary lane closures. There are planned projects adjacent to the Proposed Project area (e.g., the LVRAS Project and Harry Allen to Eldorado 500 kV Transmission Line Project) that have the potential to be constructed at the same time.

The LVRAS Project would be located adjacent to the existing Eldorado-Lugo 500 kV Transmission Line. Access to this project would be provided by I-40, which has a Level of Service (LOS) A in this area, which is unrestricted traffic flow. The results of the Traffic Study for the Proposed Project indicate that the addition of construction-related trips to existing traffic conditions would not decrease the LOS of highways in the vicinity of the Proposed Project, roadways would be subjected to negligible increases in traffic, and applicable LOS standards would not be exceeded. Construction of the LVRAS Project could have the potential to occur at the same time as the Proposed Project; however, construction activities may not require lane closures; and if lane closures are required, traffic controls would be in place. Further, use of the access roads for the Proposed Project and planned and proposed projects would limit traffic congestion on local roadways.

The Harry Allen to Eldorado 500 kV Transmission Line Project would be located adjacent to the existing Eldorado Substation. Access to Eldorado Substation would be provided by Eldorado Valley Drive, which is accessed from McCullough Pass. Eldorado Valley Drive has an LOS A, and the results of the Traffic Study indicate that the addition of construction-related trips to existing traffic conditions would not decrease the LOS in the vicinity of Eldorado Substation, roadways would be subjected to negligible increases in traffic, and applicable LOS standards would not be exceeded. However, if the Proposed Project and the Harry Allen to Eldorado 500

kV Transmission Line Project occur simultaneously, parking is available for the Proposed Project, and the other projects would likely utilize the same access roads to limit traffic congestion on local roadways, such as McCullough Pass. All developments would be required to obtain encroachment permits, and planned traffic control measures for each project would be reviewed by the permitting jurisdiction. Coordination of the traffic detailed in the plans is expected to reduce temporary cumulative impacts to a less-than-significant level.

SCE would obtain encroachment permits where necessary from State and local agencies and conduct temporary or partial lane closures in accordance with permit requirements and/or the California Joint Utility Traffic Control Manual to reduce conflicts and impacts. SCE would submit a Traffic Control Plan to address any needed lane closures and to offset impacts related to truck traffic to and from the site. Projects listed in Table 4.18-1: Cumulative Projects within 1 Mile of the Proposed Project would be required to submit similar plans to avoid impacts; therefore, the cumulative impact is expected to be less than significant.

4.18.13.2 Operation

Cumulative impacts to transportation and traffic could occur during O&M if multiple planned and proposed projects and the Proposed Project would conflict with applicable traffic plans and policies. O&M activities associated with the Proposed Project would be similar to those currently performed for the existing facilities, with additional O&M activities associated with the proposed mid-line series capacitors and fiber optic repeater facilities. O&M associated with the mid-line series capacitor sites and fiber optic repeater sites would result in a minor increase in vehicle trips when compared to existing O&M activities. No planned or proposed projects have been identified within 0.5 mile of the mid-line series capacitor sites. The Tapestry Specific Plan project has the potential to increase traffic after it has been constructed; however, this project is more than 10 miles from any of the mid-line series capacitors and the three proposed fiber optic repeater sites. The Calcite Substation Project is located approximately 0.3 mile from the Barstow Fiber Optic Repeater site; however, O&M of these facilities would be conducted intermittently and consist primarily of monthly and annual inspections, as well as equipment testing. Based on the limited frequency and duration of these activities, O&M of the mid-line series capacitor sites and fiber optic repeater sites would generate a negligible number of vehicle trips. The Calcite Substation Project would not increase population or traffic, and O&M would not likely conflict with applicable traffic plans or polices. No planned or proposed projects are located within 0.5 mile of the Kelbaker Fiber Optic Repeater site or the Lanfair Fiber Optic Repeater site. Therefore, a permanent, cumulative impact to transportation and traffic would not result.

O&M of the Proposed Project would have no other impacts to transportation and traffic. Therefore, the Proposed Project would not contribute to a cumulatively considerable impact related to transportation and traffic during O&M.

4.18.14 Utilities and Service Systems

4.18.14.1 Construction

Cumulative impacts to utilities or service systems have the potential to occur if multiple projects have a combined impact on local utility services or infrastructure. Because the Proposed Project involves upgrades of existing transmission lines, construction would not directly or indirectly

result in new or expanded development. As a result, no new extensions of sewer or water lines would be required to serve the Proposed Project, and no new or expanded water or wastewater treatment facilities would be needed.

The construction schedules for three of the planned and proposed projects could overlap with construction of the Proposed Project. An additional nine projects within 1 mile and 33 projects within 5 miles have construction timelines that are unknown and could potentially overlap with construction of the Proposed Project. Construction of the Proposed Project would typically require approximately 124,200 gallons of water per day, and approximately 146,000 gallons of water per day would be used during peak construction activities; therefore, SCE would confirm with the water service purveyor that adequate water is available for the Proposed Project prior to construction. However, all of the applicants for the planned and proposed projects would need to coordinate with water providers prior to construction to ensure the providers can accommodate the demand during construction. Because the Proposed Project's relatively low water demand is required only during the construction phase, the impact on a water purveyor's long-term water supply would be insignificant. Therefore, the Proposed Project's contribution to a cumulative water supply impact would be less than significant.

No impact to local sewer systems would result from the Proposed Project, and no new water or wastewater treatment facilities would be required; therefore, the Proposed Project would not contribute to cumulative impacts to water or wastewater treatment facilities.

Local area landfills could be impacted due to the increased cumulative need for disposal of construction debris. The Proposed Project would generate limited quantities of construction waste—approximately 10,330 cubic yards. The amount of daily construction waste for the projects listed in Table 4.18-1: Cumulative Projects within 1 Mile of the Proposed Project and Table 4.18-2: Cumulative Projects within 5 Miles of the Proposed Project are unknown; however, construction debris would be generated by these projects as well. In total, the landfills near the Proposed Project have a combined capacity to accept approximately 235 million cubic yards of additional waste. Solid waste generated by the Proposed Project and other projects would decrease the capacity of the landfills; however, the amount would not be enough to significantly affect the capacity of the nearby landfills. In addition, SCE would reuse and recycle materials to the extent possible to reduce landfill waste. Any impacts on landfills caused by the construction and operation of the planned and proposed projects would also be required to conform to the regulations and policies of the local jurisdictions. As a result, the cumulative impact would be less than significant.

4.18.14.2 Operation

O&M of the Proposed Project would use limited amounts of water and generate limited amounts of waste, which would not exceed the capacity of utilities and service systems. Therefore, the Proposed Project would not contribute to a cumulatively considerable impact related to the capacity of utilities and service systems during O&M.

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4.19 Growth-Inducing Impacts

An analysis of growth-inducing impacts was conducted for the Eldorado-Lugo-Mohave Series Capacitor Project (Proposed Project[1]). This analysis addresses 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 in accordance with California Environmental Quality Act Guidelines Section 15126.2(d). Section 5.3, Growth-Inducing Impacts provides information regarding how construction and operation of the Proposed Project would not result in any growth-inducing impacts.

[1] The term "Proposed Project" is inclusive of all components of the Eldorado-Lugo-Mohave Series Capacitor Project. Where the discussion in this section focuses on a particular component, that component is called out by its individual work area (e.g., "Ludlow Series Capacitor").

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