BEFORE THE PUBLIC UTILITIES COMMISSION OF THE

STATE OF CALIFORNIA

In the Matter of the Application of SOUTHERN CALIFORNIA EDISON COMPANY (U 338-E) for a Permit to Construct Electrical Facilities: Eldorado-Lugo-Mohave Series Capacitor Project.	Application No. 18-05-xxx

PROPONENT'S ENVIRONMENTAL ASSESSMENT (PEA)

ELDORADO-LUGO-MOHAVE SERIES CAPACITOR PROJECT

VOLUME 2 OF 8

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VOLUME 2 – TABLE OF CONTENTS

Chapter 4 Environmental Impact Assessment Summary

4.0 INTRODUCTION 4-1
4.1 AESTHETICS 4.1-1
4.1.1 Environmental Setting 4.1-2
4.1.2 Regulatory Setting 4.1-25
4.1.3 Significance Criteria 4.1-32
4.1.4 Impact Analysis 4.1-32
4.1.5 Applicant-Proposed Measures 4.1-46
4.1.6 Mid-Line Series Capacitor Site Alternatives 4.1-46
4.1.7 References 4.1-48
4.2 AGRICULTURE AND FORESTRY RESOURCES 4.2-1
4.2.1 Environmental Setting 4.2-1
4.2.2 Regulatory Setting 4.2-12
4.2.3 Significance Criteria 4.2-16
4.2.4 Impact Analysis 4.2-17
4.2.5 Applicant-Proposed Measures 4.2-19
4.2.6 Mid-Line Series Capacitor Site Alternatives 4.2-19
4.2.7 References 4.2-21
4.3 AIR QUALITY 4.3-1
4.3.1 Environmental Setting 4.3-1
4.3.2 Regulatory Setting 4.3-11
4.3.3 Significance Criteria 4.3-21
4.3.4 Impact Analysis 4.3-23
4.3.5 Applicant-Proposed Measures 4.3-28
4.3.6 Mid-Line Series Capacitor Site Alternatives 4.3-29
4.3.7 References 4.3-31
4.4 BIOLOGICAL RESOURCES 4.4-1
4.4.1 Environmental Setting 4.4-3
4.4.2 Regulatory Setting 4.4-3
4.4.3 Existing Biological Resources 4.4-18
4.4.4 Significance Criteria 4.4-86
4.4.5 Impact Analysis 4.4-87
4.4.6 Applicant-Proposed Measures 4.4-99
4.4.7 Mid-Line Series Capacitor Site Alternatives 4.4-103
4.4.8 References 4.4-107
4.5 CULTURAL RESOURCES 4.5-1
4.5.1 Environmental Setting 4.5-1
4.5.2 Cultural Resources Records Search and Survey Results 4.5-17
4.5.3 Cultural Resources Regulatory Setting 4.5-18
4.5.4 Cultural Resources Significance Criteria 4.5-26
4.5.5 Cultural Resources Impact Analysis 4.5-26
4.5.6 Paleontological Resources Environmental Setting 4.5-32
4.5.7 Paleontological Resources Regulatory Setting 4.5-33

4.5.8 Paleontological Resources Records Search and Survey Results 4.5-36
4.5.9 Paleontological Resources Significant Criteria 4.5-37
4.5.10 Paleontological Resources Impact Analysis 4.5-38
4.5.11 Applicant-Proposed Measures 4.5-39
4.5.12 Mid-Line Series Capacitor Site Alternatives 4.5-41
4.5.13 References 4.5-43
4.6 GEOLOGY AND SOILS 4.6-1
4.6.1 Environmental Setting 4.6-1
4.6.2 Regulatory Setting 4.6-68
4.6.3 Significance Criteria 4.6-73
4.6.4 Impact Analysis 4.6-73
4.6.5 Applicant-Proposed Measures 4.6-78
4.6.6 Mid-Line Series Capacitor Site Alternatives 4.6-78
4.6.7 References 4.6-80
4.7 GREENHOUSE GAS EMISSIONS 4.7-1
4.7.1 Environmental Setting 4.7-1
4.7.2 Climatic Environmental Setting 4.7-1
4.7.3 Regulatory Setting 4.7-2
4.7.4 Significance Criteria 4.7-7
4.7.5 Impact Analysis 4.7-8
4.7.6 Applicant-Proposed Measures 4.7-13
4.7.7 Mid-Line Series Capacitor Site Alternatives 4.7-13
4.7.8 References 4.7-14
4.8 HAZARDS AND HAZARDOUS MATERIALS 4.8-1
4.8.1 Environmental Setting 4.8-1
4.8.2 Regulatory Setting 4.8-18
4.8.3 Significance Criteria 4.8-26
4.8.4 Impact Analysis 4.8-27
4.8.5 Applicant-Proposed Measures 4.8-37
4.8.6 Mid-Line Series Capacitor Site Alternatives 4.8-37
4.8.7 References 4.8-39

VOLUME 2 – LIST OF FIGURES

Figure 4.1-1: Viewpoint Locations Map 4.1-5
Figure 4.1-2: BLM Visual Resource Management Classes 4.1-35
Figure 4.2-1: Agricultural and Forestry Lands in the Project Vicinity 4.2-5
Figure 4.4-1: CNDDB Special-Status Plant Occurrences Map 4.4-25
Figure 4.4-2: CNDDB Special-Status Wildlife Occurrences Map 4.4-55
Figure 4.4-3: NNHP Special-Status Wildlife and Plant Occurrences Map 4.4-73
Figure 4.4-4: Desert Tortoise Critical Habitat Map 4.4-83
Figure 4.6-1: Geologic Formations in the Proposed Project Area 4.6-3
Figure 4.6-2: Soils in the Proposed Project Area 4.6-25
Figure 4.6-3: Active and Potentially Active Faults in the Proposed Project Area 4.6-59
Figure 4.8-1: Hazardous Sites Within 1 Mile of the Proposed Project 4.8-7

VOLUME 2 – LIST OF TABLES

Table 4.2-1: Summary of Important Farmland in San Bernardino County 4.2-3
Table 4.3-1: Sensitive Receptors within 500 Feet of the Proposed Project 4.3-5
Table 4.3-2: Recent Ambient Air Quality Concentrations 4.3-7
Table 4.3-3: Frequency of Air Quality Standard Exceedances in the Proposed Project Area .. 4.3-9
Table 4.3-4: Attainment Status for the Proposed Project Area 4.3-11
Table 4.3-5: State and Federal Ambient Air Quality Standards 4.3-13
Table 4.3-6: Thresholds of Significance 4.3-22
Table 4.3-7: Operational Air Quality Thresholds of Significance 4.3-23
Table 4.3-8: Uncontrolled Construction Emissions 4.3-24
Table 4.3-9: Controlled Construction Emissions 4.3-25
Table 4.4-1: Surveys Conducted for the Proposed Project 4.4-2
Table 4.4-2: Vegetation Community Alliances and Land Cover Types Observed within the BRSA 4.4-20
Table 4.4-3: Special-Status Plant Species Observed within the BRSA 4.4-52
Table 4.4-4: Potentially Jurisdictional Waters within the BRSA 4.4-86
Table 4.4-5: Potential Impacts to Special-Status Plant Species 4.4-88
Table 4.4-6: Impacts to Sensitive Natural Communities 4.4-94
Table 4.4-7: Water Features to be Impacted by the Proposed Project 4.4-95
Table 4.6-1: Soils in the Proposed Project Area 4.6-22
Table 4.6-2: Active and Potentially Active Faults in the Vicinity of New Proposed Project Structures 4.6-52
Table 4.6-3: Earthquake Intensity Scale 4.6-63
Table 4.6-4: Depth to Groundwater in the Proposed Project Area 4.6-65
Table 4.7-1: Greenhouse Gas Construction Emissions 4.7-8
Table 4.7-2: Annual Fugitive SF_6 Emissions 4.7-10
Table 4.7-3: Total Annual Greenhouse Gas Emissions 4.7-11
Table 4.8-1: Hazardous Sites Within 1 Mile of the Proposed Project 4.8-4
Table 4.8-2: Hazardous Materials Typically Used for Construction 4.8-28

VOLUME 2 – LIST OF ATTACHMENTS

Attachment 4.1-A: Characterization Photographs
Attachment 4.1-B: BLM Visual Contrast Rating Worksheets
Attachment 4.1-C: Visual Simulations

TABLE OF CONTENTS

4.0 INTRODUCTION..... 4-1

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Chapter 4
Environmental Impact Assessment Summary

4.0 Introduction

This section examines the potential environmental impacts of the Eldorado-Lugo-Mohave Series Capacitor Project (Proposed Project[1]) and alternatives. The analysis of each resource category begins with an examination of the existing physical setting (baseline conditions as determined pursuant to Section 15125[a] of the California Environmental Quality Act [CEQA] Guidelines) that may be affected by the Proposed Project. The effects of the Proposed Project are defined as changes to the environmental setting that are attributable to project construction and operation.[2]

Significance criteria are identified for each environmental issue area. The significance criteria serve as a benchmark for determining if a project would result in a significant adverse environmental impact when evaluated against the baseline. According to the CEQA Guidelines Section 15382, a significant effect on the environment means "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the Project." If significant impacts are identified, feasible mitigation measures are formulated to eliminate or reduce the level of the impacts and focus on the protection of sensitive resources.

CEQA Guidelines Section 15126.4(a)(3) states that mitigation measures are not required for effects which are not found to be significant. Therefore, where an impact is less than significant no mitigation measures have been proposed. In addition, compliance with laws, regulations, ordinances, and standards designed to reduce impacts to less than significant levels are not considered mitigation measures under CEQA. Where potentially adverse impacts may occur, SCE has proposed applicant-proposed measures to minimize the environmental 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").

[2] The California Public Utilities Commission's *WORKING DRAFT Proponent's Environmental Assessment (PEA) Checklist for Transmission Line and Substation Projects,* dated November 2008 (Checklist), provides two options for applicants for formatting PEAs. One option is to include a Chapter 4 entitled "Environmental Setting" along with a separate Chapter 5 entitled "Environmental Impact Assessment Summary." The other option offered by the Checklist is for both sections to be combined into a single section. SCE has chosen to combine both the discussion of environmental setting with the discussion of environmental impacts into a single Chapter 4.

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TABLE OF CONTENTS

4.1 AESTHETICS 4.1-1
4.1.1 Environmental Setting 4.1-2
4.1.2 Regulatory Setting 4.1-25
4.1.3 Significance Criteria 4.1-32
4.1.4 Impact Analysis 4.1-32
4.1.5 Applicant-Proposed Measures 4.1-46
4.1.6 Mid-Line Series Capacitor Site Alternatives 4.1-46
4.1.7 References 4.1-48

LIST OF FIGURES

Figure 4.1-1: Viewpoint Locations Map 4.1-5
Figure 4.1-2: BLM Visual Resource Management Classes 4.1-35

LIST OF ATTACHMENTS

Attachment 4.1-A: Characterization Photographs
Attachment 4.1-B: BLM Visual Contrast Rating Worksheets
Attachment 4.1-C: Visual Simulations

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4.1 Aesthetics

This section examines visual resources in the area of the Eldorado-Lugo-Mohave Series Capacitor Project (Proposed Project[1]) to determine how it could affect the aesthetic character of the landscape. Visual resources are generally defined as the natural and built features of the landscape that can be viewed. Landforms, water, and vegetation patterns are among the natural landscape features that define an area's visual character, whereas buildings, roads, and other structures reflect human modifications to the landscape. These natural and built landscape features are considered visual resources that contribute to the public's experience and appreciation of the environment. This section analyzes whether the Proposed Project would alter the perceived visual character of the environment and cause visual impacts. Alternatives to the Proposed Project are also discussed.

The visual analysis is based on a review of technical data, including Proposed Project maps and drawings provided by Southern California Edison Company (SCE), aerial and ground-level photographs of the Proposed Project area, and computer-generated visual simulations. Additionally, planning policy documents, regional atlases, and geographic information system (GIS) data were reviewed. Field observations were conducted in May 2016 to document existing visual conditions in the Proposed Project area, as well as photographing representative views toward the Proposed Project and from key potentially sensitive viewpoint locations. Section 4.1.1.3, Visual Setting and Representative Views describes 21 representative photographs that document existing visual conditions in the Proposed Project area.

This visual assessment employs methods based in part on those developed by the Bureau of Land Management (BLM), as well as other accepted visual analysis techniques summarized by Smardon et al. (Smardon, et al.1986). BLM's Visual Resource Management (VRM) program includes inventorying scenic resources, assigning scenic values and levels of management, and evaluating impacts based on contrast rating. Further detail on the VRM program is provided in Section 4.1.4.1, Visual Resource Management Program.

To support the analysis of potential impacts and to document the visual changes that would occur, visual simulations show the Proposed Project from key observation points (KOPs). These KOPs are a subset of the viewpoints portrayed in the 21 representative photographs referenced previously, and are described in Section 4.1.1.3, Visual Setting and Representative Views. To capture the KOP images for simulation, a single-lens reflex camera with a 50-millimeter lens (which represents a horizontal view angle of 40 degrees) was used for high-resolution digital site photography. Systematic documentation of KOP photographs included recording Global Positioning System (GPS) data and annotating photograph log sheets and base maps. Three-dimensional computer modeling for proposed structures was developed using engineering design data supplied by SCE. This was combined with GIS data for Proposed Project components and digital aerial photographs of the Proposed Project to produce digital modeling for visual analysis

[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").

and simulation. Simulation viewpoint locations were incorporated based on GPS field data, using 5 feet as the assumed eye level.

The simulation images portray the location, scale, and appearance of the Proposed Project as seen from six publicly accessible KOPs within the Proposed Project area. The KOP locations were selected to represent views seen by the largest number of viewers, primarily along public roadways. Taken together, the set of simulations illustrates the representative visual change associated with the Proposed Project.

4.1.1 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 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 communities of Lucerne Valley in California, as well as the unincorporated communities of Searchlight and Laughlin in Nevada.

4.1.1.1 Regional and Local Landscape Setting

Situated within the Mojave, the Proposed Project includes modifications to three existing 500 kilovolt (kV) transmission lines that cross numerous valleys, consisting of flat desert, agricultural lands, and mountainous areas. Elevations range from 780 to 4,000 feet above mean sea level. Vegetation in the undeveloped areas includes low-growing desert grasses and scrub, which are typical in the Mojave Desert. Land uses in the vicinity of the Proposed Project are undeveloped, open space, protected wildernesses and preserves, national parks, BLM-managed lands, recreation, agricultural uses, and energy infrastructure. Developed areas surrounding portions of the Proposed Project include low-density residential uses near Lugo Substation in the City of Hesperia, California; and electrical substations and generation facilities surrounding Mohave Substation in Clark County and Eldorado Substation in the City of Boulder City, Nevada. Because much of the Proposed Project area is undeveloped, existing electrical transmission lines within existing rights-of-way (ROWs) constitute dominant features in the landscape, as do major highways—including Interstate (I-) 40 and United States (U.S.) Highway (US-) 95—that are spanned by the existing transmission lines, along with two railroad lines operated by Union Pacific Railroad and BNSF Railway. Mountain ranges provide background forms in much of the Proposed Project vicinity, and include the San Gabriel, San Bernardino, and McCullough Mountain Ranges. The existing transmission lines also cross the Mojave River and several smaller drainages, which typically remain dry. Because much of the land in the Proposed Project vicinity is undeveloped, sources of nighttime lighting include vehicles on roadways, interspersed residences, and lighting associated with existing substations and other utility facilities.

4.1.1.2 Project Visibility and Viewshed

The project viewshed is defined as the general area from which the Proposed Project would be visible. For purposes of describing a project's visual setting and assessing potential visual impacts, the viewshed can be divided into distance zones of foreground, middle ground, and background views. The foreground is defined as the distance between the viewer and 0.25 to 0.5 mile. Landscape detail is most noticeable and objects generally appear most prominent when seen in the foreground. The middle ground is 0.5 to 3 miles from the viewer, and the background extends beyond 3 to 5 miles from the viewer.

In the analysis of the Proposed Project, emphasis is placed on the potential effects on foreground viewshed conditions, although consideration is also given to the potential effects on the more distant views. Project visibility includes locations along nearby roads and highways, as well as more distant locations. From many locations within the surrounding area, views of the Proposed Project are partially or fully screened by intervening topography, structures, and vegetation. Existing visual conditions are described in the following sections.

4.1.1.3 Visual Setting and Representative Views

The following subsections describe the visual character found within the Proposed Project area and include references to a set of 21 photographs that document representative views of the Proposed Project. The locations of photograph viewpoints are shown in Figure 4.1-1: Viewpoint Locations Map. As shown in Attachment 4.1-A: Characterization Photographs, photographs are generally presented from west to east (Lugo Substation to Mohave Substation), and then to the north (Mohave Substation to Eldorado Substation).

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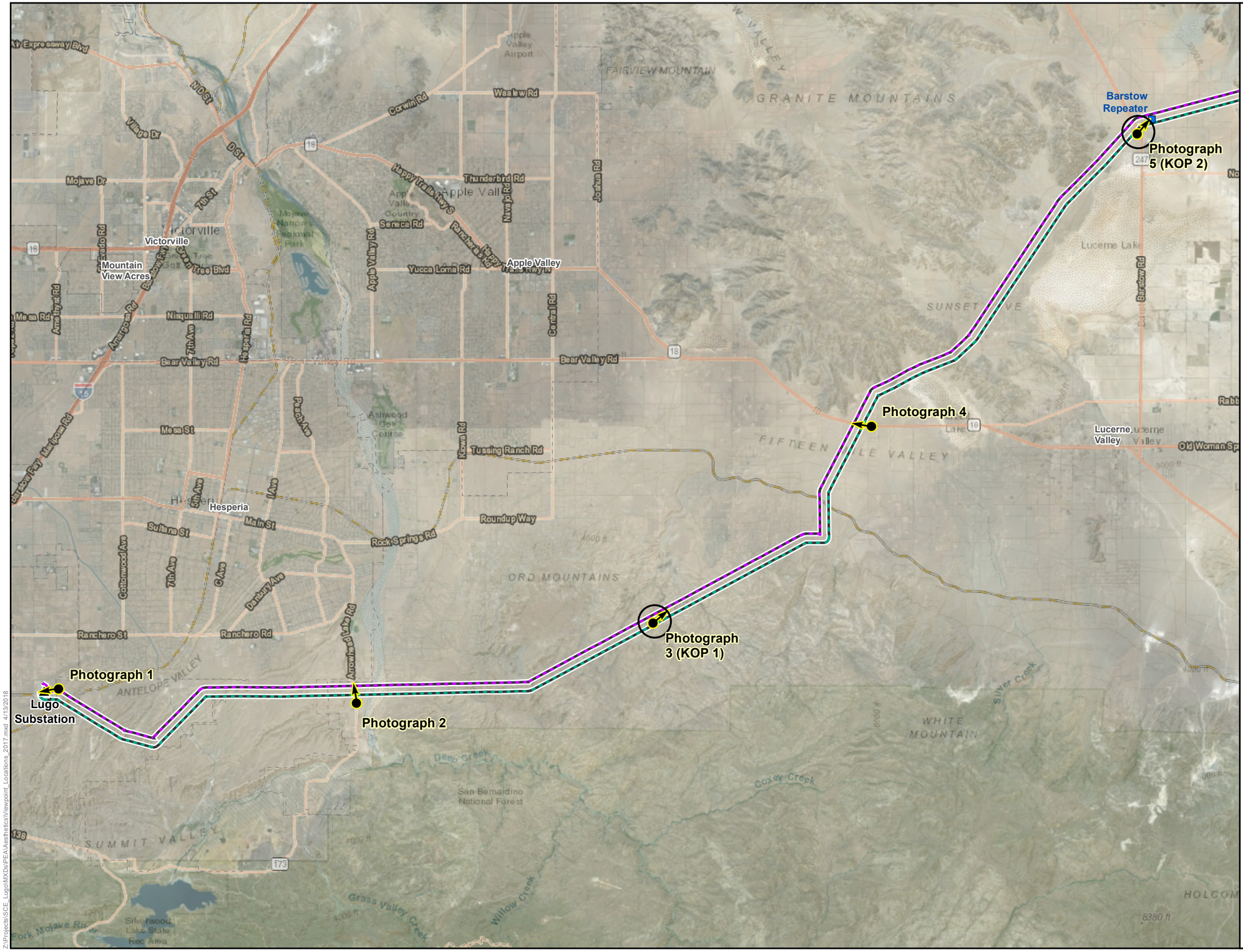
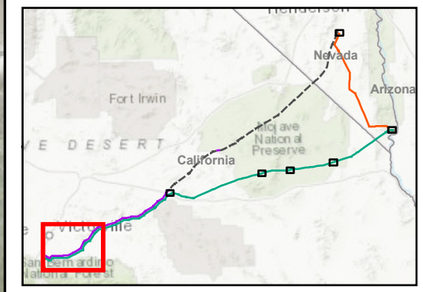


Figure 4.1-1:
Viewpoint Locations
Map 1 of 7

Eldorado-Lugo-Mohave Series Capacitor Project

- Existing Substation
- Proposed Fiber Optic Repeater Location
- Eldorado - Lugo 500 kV Transmission Line
- Lugo - Mohave 500 kV Transmission Line
- City Boundary
- State Boundary
- Character Photo Location
- KOP Photo Location



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Source: CPAD, 2015; Clark County GIS Management Office, 2016; Insignia, 2018; SCE, 2018

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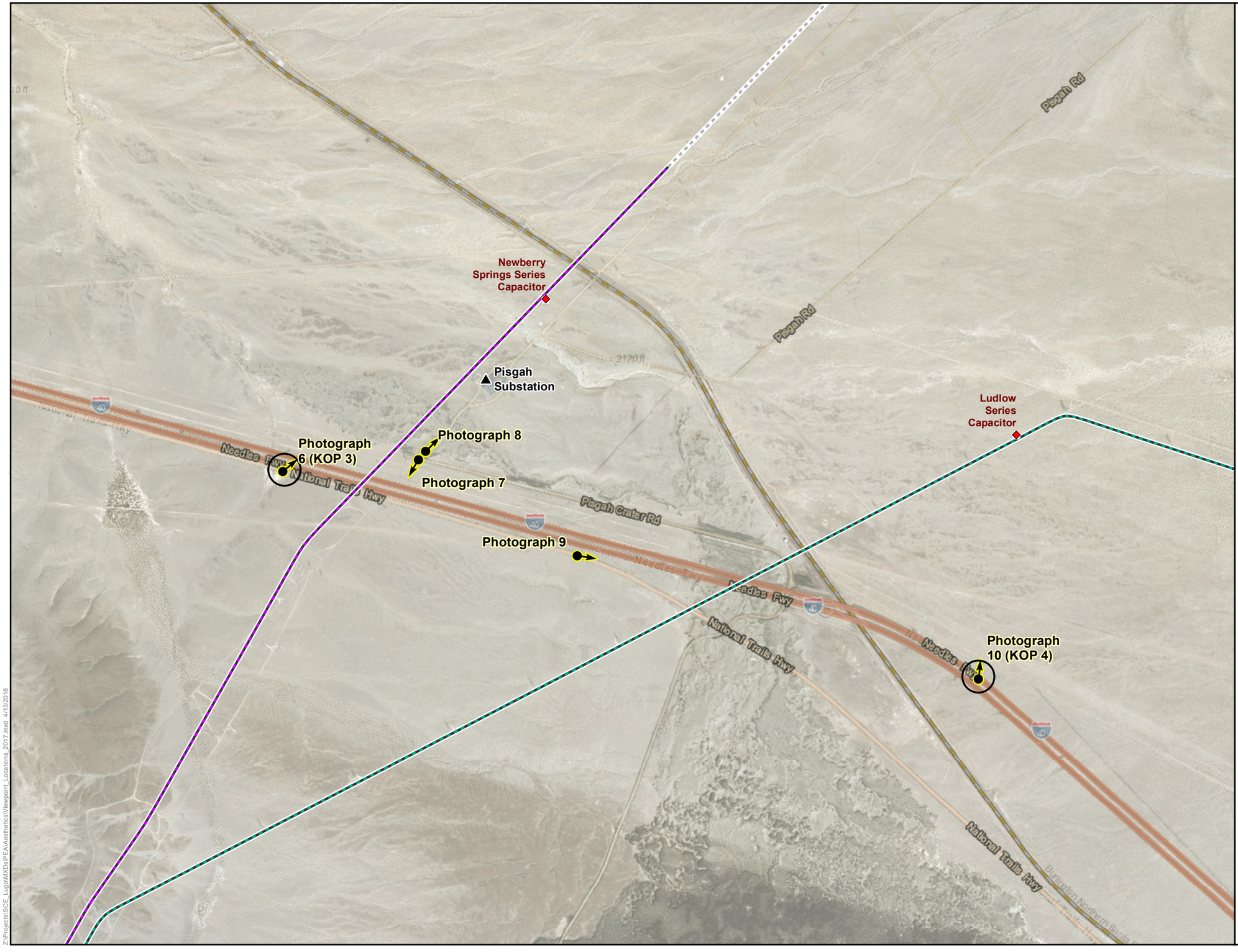
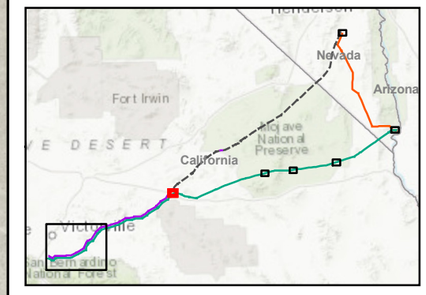


Figure 4.1-1:
Viewpoint Locations
Map 2 of 7

Eldorado-Lugo-Mohave
Series Capacitor Project

- Existing Substation
- Proposed Mid-Line Capacitor Location
- Eldorado - Lugo 500 kV Transmission Line
- Lugo - Mohave 500 kV Transmission Line
- Transmission Line not part of Project
- State Boundary
- Character Photo Location
- KOP Photo Location



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Source: CPAD, 2015; Clark County GIS Management Office, 2016; Insignia, 2018; SCE, 2018

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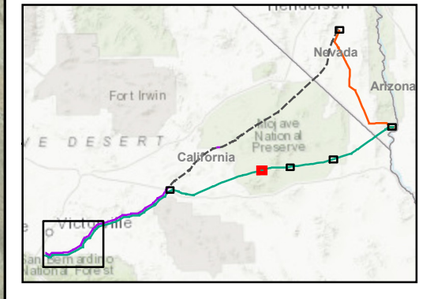
Figure 4.1-1:
Viewpoint Locations
Map 3 of 7

Eldorado-Lugo-Mohave
Series Capacitor Project

- Proposed Fiber Optic Repeater Location
- Lugo - Mohave 500 kV Transmission Line
- State Boundary
- Character Photo Location
- KOP Photo Location



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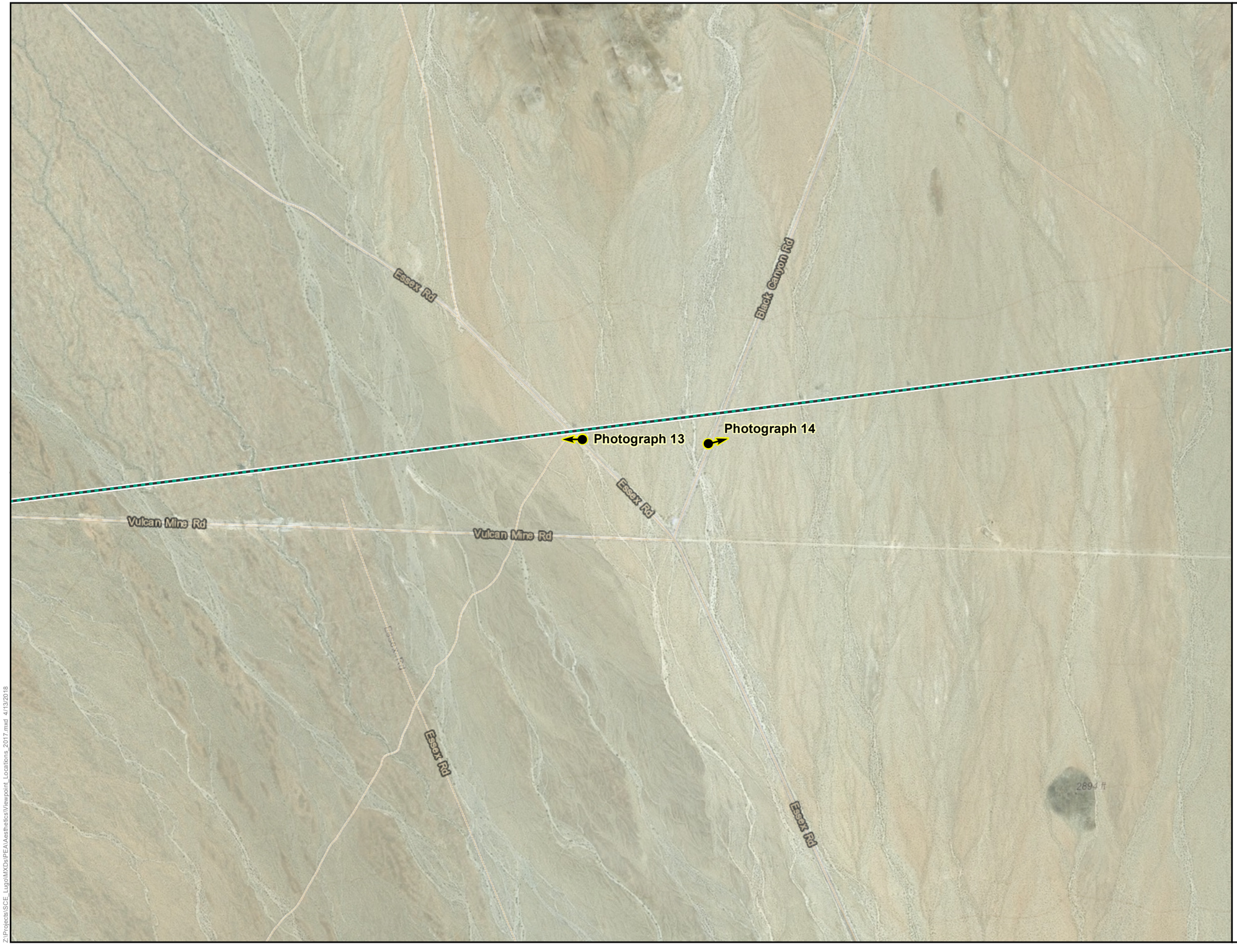
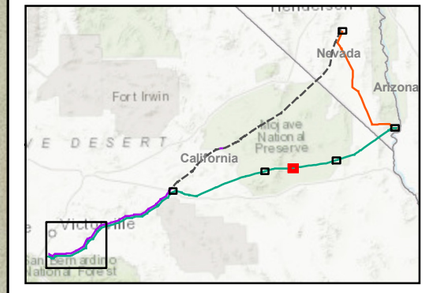


Figure 4.1-1:
Viewpoint Locations
Map 4 of 7

Eldorado-Lugo-Mohave
Series Capacitor Project

Lugo - Mohave 500 kV Transmission Line
State Boundary
Character Photo Location
KOP Photo Location



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INSIGNIA ENVIRONMENTAL

Source: CPAD, 2015; Clark County GIS Management Office, 2016; Insigna, 2018; SCE, 2018

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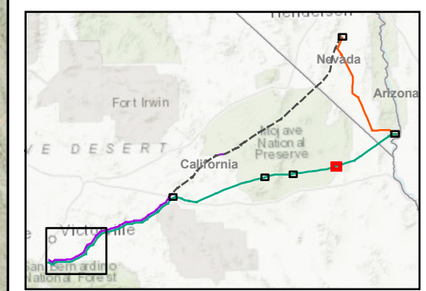
Figure 4.1-1:
Viewpoint Locations
Map 5 of 7

Eldorado-Lugo-Mohave
Series Capacitor Project

- Proposed Fiber Optic Repeater Location
- Lugo - Mohave 500 kV Transmission Line
- State Boundary
- Character Photo Location
- KOP Photo Location



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Source: CPAD, 2015; Clark County GIS Management Office, 2016; Insignia, 2018; SCE, 2018

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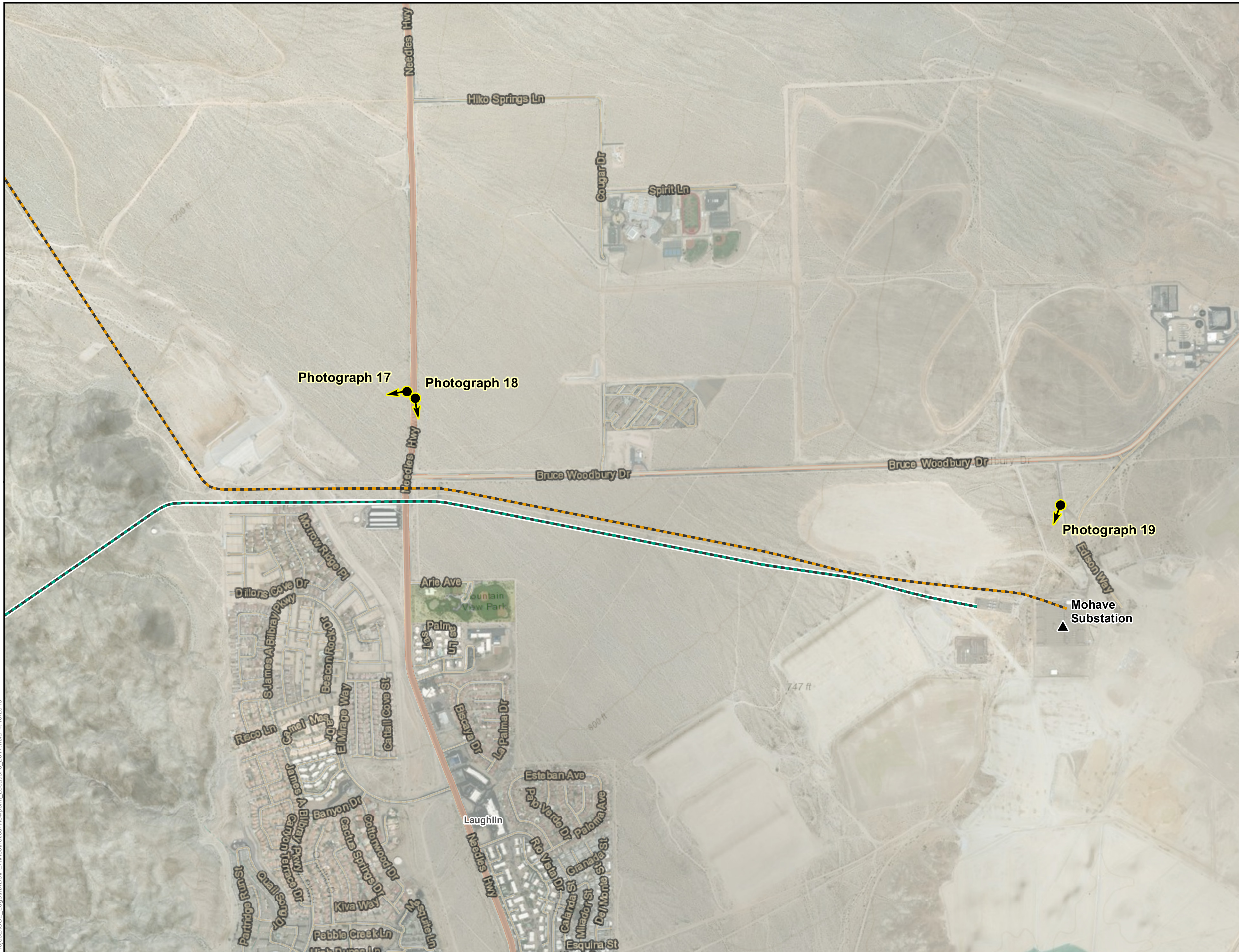
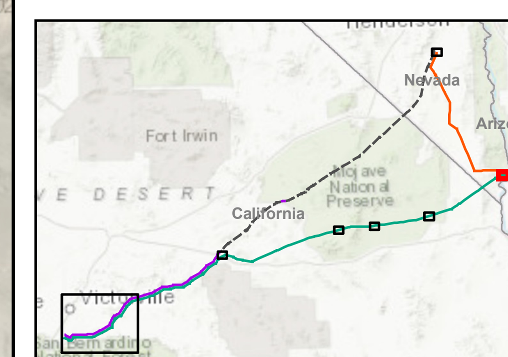
Figure 4.1-1:
Viewpoint Locations
Map 6 of 7

Eldorado-Lugo-Mohave
Series Capacitor Project



Needles Hwy
Hiko Springs Ln
Cougar Dr
Spirit Ln
Photograph 17
Photograph 18
Photograph 19
Bruce Woodbury Dr
Edison Way
Mohave Substation
Morrow Ridge Pl
Dillons Cove Dr
Arie Ave
Mountain View Park
Los Palmas Dr
Laughlin
Esteban Ave
Risco Ln
Camel Mesa
El Mirage Way
Beacon Rock Dr
Banyon Dr
Cottonwood Dr
Kiva Way
Pebble Creek Ln
High Dunes Ln
Esquina St
Cal Edison Dr
747 ft

▲ Existing Substation
Eldorado - Mohave 500 kV Transmission Line
Lugo - Mohave 500 kV Transmission Line
City Boundary
State Boundary
Character Photo Location
KOP Photo Location



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Source: CPAD, 2015; Clark County GIS Management Office, 2016; Insignia, 2018; SCE, 2018

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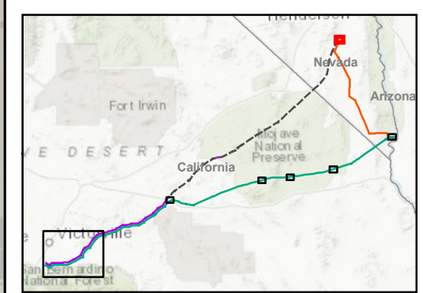
Figure 4.1-1:
Viewpoint Locations
Map 7 of 7

Eldorado-Lugo-Mohave
Series Capacitor Project

- Existing Substation
- Eldorado - Mohave 500 kV Transmission Line
- Transmission Line not part of Project
- City Boundary
- State Boundary
- Character Photo Location
- KOP Photo Location



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Photograph 1: Lugo Substation

Photograph 1 shows the existing view looking west from Fuente Avenue toward Lugo Substation. Two of the three existing transmission lines in the Proposed Project originate at Lugo Substation in the City of Hesperia, California—the Eldorado-Lugo and Lugo-Mohave 500 kV Transmission Lines. Viewed from the eastern side of the substation, this photograph shows one of the existing double-circuit lattice steel towers (LSTs), as well as the switchracks and other components within the perimeter fencing surrounding the substation. The San Bernardino and San Gabriel Mountain Ranges are visible in the background of the photograph.

Photograph 2: Arrowhead Lake Road Crossing

Photograph 2 shows the existing view looking north along Arrowhead Lake Road. Two existing single-circuit LSTs appear along the Eldorado-Lugo and Lugo-Mohave 500 kV Transmission Lines where they span Arrowhead Lake Road, which runs north-south from the San Bernardino Mountains to the City of Hesperia. This photograph captures the existing transmission lines in a rural residential area south of the city limits. As shown in the photograph, existing homes are located on each side of the roadway, and an existing distribution line parallels the roadway.

Photograph 3: Bowen Ranch Road

Photograph 3 shows the existing view looking northeast from Bowen Ranch Road. Existing single-circuit LSTs along the Eldorado-Lugo and Lugo-Mohave 500 kV Transmission Lines are visible from Bowen Range Road, which provides access to a few residential properties in the area. The photograph features the hilly topography in this portion of the Proposed Project area, as well as the dominance of the existing LSTs of the Eldorado-Lugo 500 kV Transmission Line.

Photograph 4: State Route 18 Crossing

Photograph 4 shows the existing view looking west along State Route (SR-) 18. The Eldorado-Lugo and Lugo-Mohave 500 kV Transmission Lines span SR-18 in the unincorporated community of Lucerne Valley. This photograph includes features that are typical in the Proposed Project area, including existing transmission lines and a roadway, desert vegetation, and mountains in the background, with little or non-existent development.

Photograph 5: Proposed Barstow Fiber Optic Repeater Site

Photograph 5 shows the existing view looking northeast from SR-247 (Barstow Road) toward the site of the proposed Barstow Fiber Optic Repeater. The Eldorado-Lugo and Lugo-Mohave 500 kV Transmission Lines, as well as an existing 220 kV transmission line, are visible from SR-247, a County of San Bernardino-designated scenic route.[2] Sparse, rural, residential development also characterizes this area, as shown in the photograph. In addition, the existing lines are shown against a backdrop of the Goat Ord, East Ord, and West Ord Mountains.

Photograph 6: Proposed Newberry Springs Series Capacitor Site

Photograph 6 shows the existing view looking east-northeast from the National Trails Highway (also known as the historic U.S. Route 66) toward the site of the proposed Newberry Springs

[2] Although designated by the County of San Bernardino as a scenic route, SR-247 is not a State scenic highway.

Series Capacitor along the Eldorado-Lugo 500 kV Transmission Line. In this area, the National Trails Highway (Route 66) runs parallel to I-40, a County of San Bernardino-designated scenic route,[3] which is shown in the foreground of the photograph, and the view in this area would be similar from that roadway. This photograph shows the existing single-circuit LSTs along the existing Eldorado-Lugo 500 kV Transmission Line, which passes Pisgah Substation (shown at the far left of the photograph). The photograph also displays two separate 220 kV transmission lines (Lugo-Pisgah #1 and #2), which terminate into the existing Pisgah Substation, and which are not part of the Proposed Project. Additionally, a cell tower appears in the photograph and is adjacent to the existing 500 kV LST. This photograph features the flat topography and desert vegetation typical of the Mojave Desert in the middle ground of the photograph, as well as the mountainous terrain in the background of the photograph.

Photograph 7: Pisgah Road

Photograph 7 shows the existing view looking south-southwest from Pisgah Crater Road. The visual character of the Proposed Project area is dominated by existing single-circuit LSTs in the vicinity of Pisgah Substation. Several transmission lines, including the Eldorado-Lugo 500 kV Transmission Line, are co-located within a single ROW. The photograph also shows the San Bernardino Mountains in the background.

Photograph 8: Pisgah Substation

Photograph 8 shows the existing view looking northeast from Pisgah Crater Road toward Pisgah Substation. This photograph shows a closer view of the existing Pisgah Substation as viewed from the intersection of Pisgah Road and Pisgah Crater Road. Similar to Photograph 7, this photograph highlights the dominance of existing transmission lines in the Proposed Project area. This photograph also features the black lava rocks and sand that are a dominant natural feature in this portion of the Proposed Project area, as well as the mountainous terrain in the background of the photograph.

Photograph 9: Interstate 40 Crossing

Photograph 9 shows the existing view looking east along the National Trails Highway (Route 66). In this photograph, the existing Lugo-Mohave 500 kV Transmission Line spans the National Trails Highway and I-40 southwest of the proposed Ludlow Series Capacitor site. The photograph shows the presence of the existing transmission line and the roadways as the major features in this portion of the Proposed Project area.

Photograph 10: Proposed Ludlow Series Capacitor Site

Photograph 10 shows the existing view looking north from I-40 toward the site of the proposed Ludlow Series Capacitor along the Lugo-Mohave 500 kV Transmission Line. This photograph shows the existing single-circuit LSTs in this area and features the flat topography and desert

[3] Although designated by the County of San Bernardino as a scenic route, the National Trails Highway (Route 66) is not a State scenic highway.

vegetation that are typical of the Mojave Desert in the foreground and middle ground of the photograph, as well as the mountainous terrain in the background of the photograph.

Photograph 11: Kelbaker Road

Photograph 11 shows the existing view looking north-northwest from Kelbaker Road, a County of San Bernardino-designated scenic route.[4] The photograph shows the conductor of the Lugo-Mohave 500 kV Transmission Line, and features an existing Sempra Energy gas plant to the north of the transmission line. The plant is one of many infrastructure facilities located in the vicinity of the Proposed Project. To the left of the plant, the white sands of the Kelso Dunes are visible in the background of the photograph.

Photograph 12: Proposed Kelbaker Fiber Optic Repeater Site

Photograph 12 shows the existing view looking northeast from Kelbaker Road toward the site of the proposed Kelbaker Fiber Optic Repeater. The existing Lugo-Mohave 500 kV Transmission Line is featured in this photograph, and mountainous terrain is visible in the background.

Photograph 13: Essex Road

Photograph 13 shows the existing view of the Lugo-Mohave 500 kV Transmission Line looking west from Essex Road, a County of San Bernardino-designated scenic route.[5] The photograph shows the disturbed condition of the ROW along the transmission line in the foreground, as well as the prominent mountains in the background.

Photograph 14: Black Canyon Road

Photograph 14 shows the existing view of the Lugo-Mohave 500 kV Transmission Line looking east from Black Canyon Road, a County of San Bernardino-designated scenic route.[6] The photograph features typical desert vegetation in the foreground and closer views of the Kelso Dunes in the background.

Photograph 15: Lanfair Road Crossing

Photograph 15 shows the existing view of the Lugo-Mohave 500 kV Transmission Line looking southeast along Lanfair Road, a County of San Bernardino-designated scenic route.[7] Numerous existing distribution poles are also shown along the roadway. Goffs Butte is visible in the background of the photograph.

Photograph 16: Proposed Lanfair Fiber Optic Repeater Site

This photograph shows the single-circuit LSTs and conductor of the existing Lugo-Mohave 500 kV Transmission Line looking northeast from Lanfair Road toward the proposed location of

[4] Although designated by the County of San Bernardino as a scenic route, Kelbaker Road is not a State scenic highway.
[5] Although designated by the County of San Bernardino as a scenic route, Essex Road is not a State scenic highway.
[6] Although designated by the County of San Bernardino as a scenic route, Black Canyon Road is not a State scenic highway.
[7] Although designated by the County of San Bernardino as a scenic route, Lanfair Road is not a State scenic highway.

the Lanfair Fiber Optic Repeater site. Typical desert vegetation is visible in the foreground of the photograph, and Signal Hill can be seen in the background.

Photograph 17: Needles Highway – West

Photograph 17 shows the existing view of the single-circuit LSTs along the Lugo-Mohave 500 kV Transmission Line looking west-southwest from Needles Highway in southern Clark County, Nevada. As the transmission line crosses the mountains west of Mohave Substation, the LSTs that rise from the peaks of the mountains are an existing, prominent feature in the viewshed. The LSTs on the valley floor are well-integrated with the surrounding vegetation in the middle ground of the photograph. An existing water tank serving the local community, one of several along the Proposed Project ROWs, is also visible in the middle ground of the photograph.

Photograph 18: Needles Highway Crossing

This photograph shows the existing single-circuit LSTs and conductors of the Eldorado-Mohave and Lugo-Mohave 500 kV Transmission Lines looking south-southeast across Needles Highway. Bullhead City, Arizona is visible in the background of the photograph.

Photograph 19: Mohave Substation

Photograph 19 shows the existing Mohave Substation looking south-southwest from the substation access road south of Bruce Woodbury Drive. The existing Eldorado-Mohave and Lugo-Mohave 500 kV Transmission Lines are shown looping into the substation from the west.

Photograph 20: Eldorado Valley Drive

Photograph 20 shows the existing view looking south from Eldorado Valley Drive. The existing ROW outside of Eldorado Substation features three transmission lines, including the Eldorado-Mohave 500 kV Transmission Line, as it departs the substation to the south. The Eldorado-Lugo and the Eldorado-Moenkopi 500 kV Lines are also shown, but are not a part of the Proposed Project in this location. Dense vegetation is prominent in the foreground, and the Highland Range is visible in the background.

Photograph 21: Eldorado Substation

Photograph 21 shows the existing view of Eldorado Substation at the northeastern terminus of the Proposed Project and looking north-northwest from Eldorado Valley Drive. The McCullough Range is visible in the background of the photograph, and typical desert vegetation—characterized by the dominance of creosote (*Larrea tridentata*) shrubs, with other shrubs and emergent trees—is visible in the foreground.

4.1.1.4 Scenic Resources

Scenic resources are defined as landscape patterns and features that are considered visually or aesthetically pleasing, and therefore contribute positively to the definition of a distinct community or region. Natural and built features that comprise landscape patterns are visual resources that can be viewed by the general public, thus contributing to the public's experience and appreciation of the environment. Scenic resources may include trees or important vegetation;

landform elements (e.g., hills, ridgelines, or rock outcroppings); water features (e.g., rivers, bays, or reservoirs); and landmarks, important buildings, or historic structures.

California

Scenic resources identified within the portion of the Proposed Project located within California are discussed in the subsections that follow.

Parks and Open Spaces

Within California, the Proposed Project crosses or is adjacent to 10 open space, parks, and wilderness areas managed by the BLM or NPS. These areas provide a range of recreational opportunities and scenic values in the Proposed Project area. Additional information on the recreational facilities within the Proposed Project area is provided in Section 4.15, Recreation.

Scenic Vistas

For the purposes of this analysis, scenic vistas are defined as distant public views along or through an opening or corridor that is recognized and valued for its scenic quality. 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.

Scenic Highways

There are no State-designated scenic highways in the Proposed Project area. Several highways in the Proposed Project area have been identified as eligible, but not officially designated by the California Department of Transportation (Caltrans), including I-40 from SR-47 to the City of Needles and SR-247 from SR-62 to I-40.

Between the cities of Barstow and Needles, the National Trails Highway (Route 66) is proposed for designation as a National Scenic Byway, and was designated by the California Legislature as historic in 1991.

The County of San Bernardino has identified several scenic roadways in the Proposed Project vicinity, including the following:

- Black Canyon Road
- Essex Road from Essex northwest to Mitchell Caverns
- National Trails Highway (Route 66 or Main Street) from Oro Grande northeast and east to the Arizona state line, excepting those areas with incorporated cities
- I-40 from the community of Ludlow northeast to the City of Needles
- Kelbaker Road from I-15 southeast to I-40
- Lanfair/Ivanpah Road
- SR-247 (Old Woman Springs Road/Barstow Road) from the Town of Yucca Valley north to Barstow
- Coxey Truck Trail from Bowen Ranch Road southeast to Rim of the World Drive
- SR-18 from Big Bear Lake northwest to the Town of Apple Valley

Historic Resources

Several listed historic structures and sites are with the Mojave Desert and the surrounding communities. Within the Proposed Project vicinity, the National Trails Highway (Route 66) was designated by the California Legislature as historic in 1991. The National Trails Highway (Route 66) is crossed by the existing Eldorado-Lugo and Lugo-Mohave 500 kV Transmission Lines. The Old Spanish Trail—a historic trade route connecting Los Angeles with Santa Fe, New Mexico in the 1800s—was designated as a National Historic Trail by Congress in 2002. Within California, it is crossed by the existing Eldorado-Lugo 500 kV Transmission Line.

Nevada

Scenic resources identified within the portion of the Proposed Project located within Nevada are discussed in the subsections that follow.

Parks and Open Spaces

Within Nevada, the Proposed Project crosses open space land managed by the BLM and a recreational area managed by Nevada State Parks. These areas provide a range of recreational opportunities and scenic values in the Proposed Project area. Additional information on the recreational facilities within the Proposed Project area is provided in Section 4.15, Recreation.

Scenic Vistas

In the Proposed Project vicinity, no specific scenic vistas have been identified or designated in Clark County or in the City of Boulder City. However, scenic views of desert open spaces and the Eldorado Valley set against mountains in the background are available on public roadways.

Scenic Highways

There are no State-designated scenic highways in the Proposed Project area. However, the South Clark County Land Use Plan identifies US-95 as a gateway to Clark County and the Las Vegas Valley, and directs the control of aesthetics and visual impacts caused by any type of proposed or expanded development.

Historic Resources

The Old Spanish Trail, which extends into Nevada, is crossed by the existing Eldorado-Mohave 500 kV Transmission Line.

4.1.1.5 Potentially Affected Viewers

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

Motorists constitute the most substantial viewer group and include both local and regional travelers who are familiar with the visual setting, as well as those using the roads on a less regular basis. Most numerous are the motorists traveling on I-40 who experience brief, elevated

views of the Proposed Project around Pisgah Substation. The sensitivity of this viewer group is considered low to moderate due to the short duration of views experienced at highway speeds. Other viewers include motorists on the National Trails Highway (Route 66), as well as occasional motorists on County of San Bernardino-designated scenic roadways or US-95 in southern Nevada. Motorists on these roads would still experience brief views of the Proposed Project, but due to the visual resources in the area, the sensitivity of this viewer group is considered moderate.

The second viewer group consists of nearby residents in the City of Hesperia, or in the sparsely settled, rural, residential properties dispersed along the Proposed Project. The closest residences to the Proposed Project are approximately 300 feet from the existing Lugo-Mohave 500 kV Transmission Line and within 455 feet from the existing Lugo Substation in the City of Hesperia. The existing facilities are visible from the residences, and views of the Proposed Project would be seen within the context of existing substations and overhead transmission lines supported by LSTs that are up to 192 feet tall. Residential views tend to be long in duration and frequent; therefore, the sensitivity of this viewer group is considered moderate to high.

The third viewer group is composed of recreationists using parks and trails in the Proposed Project vicinity. This group includes visitors to the Mojave Trails National Monument, the Mojave National Preserve, and various wilderness areas crossed by the Proposed Project. Recreationists' views range from relatively brief to longer in duration. The sensitivity of this viewer group is considered moderate to high due to the potential for views for extended durations.

4.1.1.6 Light and Glare

Existing sources of light and glare within the Proposed Project area include nighttime highway traffic along I-40 and other roadways, as well as localized lighting associated with residential development. Another source of light and glare within the Proposed Project area is from the existing Eldorado, Lugo, Mohave, and Pisgah Substations, including interior and exterior lighting from buildings, lighting from switch racks, and sensor lights.

4.1.2 Regulatory Setting

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

4.1.2.1 Federal

In addition to the federal regulations described in the following subsection, 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.

National Environmental Policy Act

The National Environmental Policy Act (NEPA) was enacted in 1969 to establish a national policy for public review of federal actions. Codified under Title 42, Sections 4321 to 4347 of the U.S. Code (U.S.C.), federal agencies are required to consider the environmental impact of their

actions, including the issuance of discretionary permits. Because the Proposed Project would require several federal permits for work within federal lands and for potential impacts on federal jurisdictional resources, the federal agencies issuing the permits must comply with NEPA by conducting the appropriate environmental review of the Proposed Project.

Federal Land Policy and Management Act of 1976

Under the Federal Land Policy and Management Act (FLPMA) of 1976 (43 U.S.C. § 1701), land management agencies are required to manage federally owned public lands in a manner that protects the quality of resources, including scenic resources. The FLPMA provided a framework for the BLM to manage resources in perpetuity and led to the development of the California Desert Conservation Area (CDCA) Plan, which acts as the BLM's land use guide for the management of public lands and resources. The Las Vegas Resource Management Plan, also established under the FLPMA, acts as the BLM's VRM guide relative to visual and aesthetic impacts on BLM lands.

California Desert Conservation Area Plan

The CDCA Plan establishes goals for the protection and use of the CDCA and a framework for managing its various resources. 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 CDCA recognizes the BLM's VRM program as the tool that the BLM uses to inform its land use decisions. As part of Phase I of the Desert Renewable Energy Conservation Plan (DRECP), the BLM adopted an amendment to the CDCA Plan in September 2016—the Land Use Plan Amendment (LUPA) to the CDCA Plan and Bishop and Bakersfield Resource Management Plan, which is discussed further below.

Desert Renewable Energy Conservation Plan

The DRECP is a collaborative effort between the California Energy Commission, California Department of Fish and Wildlife, BLM, and U.S. Fish and Wildlife Service 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 LUPA 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 (NCCP) that encompasses the entire DCRECP plan area. The DRECP designates National Scenic and Historic Trail management corridors.

Bureau of Land Management Land Use Plan Amendment

The BLM LUPA establishes management direction for the permitting of renewable energy and transmission development on approximately 10 million acres of BLM-managed lands in the DRECP plan area. The BLM LUPA amends the CDCA Plan and the Bakersfield and Bishop

Resource Management Plans. The purpose of the LUPA is to conserve biological, environmental, cultural, recreation, scenic, and visual resources; respond to federal renewable energy goals and policies, including state-level renewable energy targets; and comply with the FLPMA. The BLM LUPA designates land use allocations, prescribes conservation management actions, and establishes VRM classes.

California Historic Route 66: Needles to Barstow Corridor Management Plan (Proposed)

The California Historic Route 66: Needles to Barstow Corridor Management Plan (CMP) is currently in the process of being developed to secure a nomination for the route as a National Scenic Byway. A final draft was released in 2015 and, once approved, it will focus on new development; the CMP will not propose changes to the regulation of Operation and Maintenance (O&M) activities for existing utility facilities. While there is guidance for new transmission lines and LSTs, the CMP does not contain policies that are relevant to the Proposed Project.

Code of Federal Regulations

All airports and navigable airspace not administered by the DoD are under the jurisdiction of the Federal Aviation Administration (FAA). Title 14, Part 77 of the Code of Federal Regulations (CFR) establishes the standards and required notification for objects affecting navigable airspace. This includes standards for marking and lighting structures to promote aviation safety, which can also affect existing viewsheds. Such standards are applicable to any temporary or permanent structures exceeding an overall height of 200 feet above ground level or exceeding any obstruction standard in Title 14, Part 77 of the CFR. SCE would file a Notice of Proposed Construction or Alteration (Form 7460-1) with the FAA 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 the FAA may recommend marking the structures, including the addition of aviation lighting or the 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 concerns. FAA determinations for permanent structures are typically valid for 18 months; therefore, such notifications would be filed upon completion of final engineering and before construction commences.

4.1.2.2 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 Department of Transportation State Scenic Highway Program

The State Scenic Highway Program—a provision of Sections 260 through 263 of the Streets and Highways Code—was established by the Legislature in 1963 to preserve and enhance the natural beauty of California. The State Scenic Highway System includes highways that are either eligible for designation as scenic highways or have been designated as such. The status of a State Scenic Highway changes from "eligible" to "officially designated" when the local jurisdiction adopts a scenic corridor protection program, applies to Caltrans for scenic highway approval, and receives the designation from Caltrans. A city or county may propose adding routes with outstanding scenic elements to the list of eligible highways. However, State legislation is required. There are no State scenic highways in the Proposed Project area; the nearest officially designated scenic highway is SR-38, which is approximately 18 miles to the south of 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.

Nevada Department of Transportation Scenic Byways Program

In 1983, the Nevada State Legislature established the Scenic Byways Program in Nevada. The Nevada Department of Transportation (NDOT) is the Lead Agency for the program, and the Director of NDOT has signature authority to establish a road as a Nevada Scenic Byway. Some Nevada Scenic Byways have historic significance, whereas others have natural attractions or access to outdoor recreation. Currently, there are 20 scenic byways in Nevada comprising approximately 420 miles. There are no Nevada Scenic Byways in the vicinity of the Proposed Project; the nearest Nevada Scenic Byway is Nevada Way, which is approximately 15 miles northeast of the Proposed Project.

4.1.2.3 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 Conservation and Open Space Elements of the County of San Bernardino 2007 General Plan contain goals and policies for the protection of visual resources in the desert region. The following goals and policies from the County of San Bernardino 2007 General Plan are relevant to the Proposed Project:

- Goal D/CO 1: Preserve the unique environmental features and natural resources of the Desert Region, including native wildlife, vegetation, water and scenic vistas.
- Policy D/CO 1.2: Require future land development practices to be compatible with the existing topography and scenic vistas, and protect the natural vegetation.
- Goal D/CO 3: Preserve the dark night sky as a natural resource in the Desert Region communities.
- Policy D/CO 3.2: All outdoor lighting, including street lighting, shall be provided in accordance with the Night Sky Protection Ordinance and shall only be provided as necessary to meet safety standards.
- Policy CO 8.1, Program 3: Require undergrounding of new and existing transmission lines when feasible.
- Policy CO 8.1, Program 4: Assist in the development and use of new designs for major transmission line towers that are aesthetically compatible with the environment from a close viewing distance.
- Policy CO 8.1, Program 7: The County shall consult with the major electric utilities regarding the location of under-grounding of new and existing transmission lines, and consider the under-grounding of distribution lines when feasible and as determined by California state regulatory processes.
- Policy CO 8.1, Program 8: The County shall consult with electric utilities during the planning construction of their major transmission lines towers to ensure that they are aesthetically compatible with the surrounding environment.
- Goal OS 4: The County will preserve and protect cultural resources throughout the County, including parks, areas of regional significance, and scenic, cultural and historic sites that contribute to a distinctive visual experience for visitors and quality of life for County residents.
- Goal OS 5: The County will maintain and enhance the visual character of scenic routes in the County.

- Policy OS 5.2: Define the scenic corridor on either side of the designated route, measured from the outside edge of the right-of-way, trail, or path. Development along scenic corridors will be required to demonstrate through visual analysis that proposed improvements are compatible with the scenic qualities present.

- Policy OS 5.3: The County desires to retain the scenic character of visually important roadways throughout the County. A "scenic route" is a roadway that has scenic vistas and other scenic and aesthetic qualities that over time have been found to add beauty to the County. Therefore, the County designates the following routes as scenic highways and applies all applicable policies to development on these routes (see Figures 2-4A through 2-4C of the Circulation and Infrastructure Background Report):[8]

  - Black Canyon Road*
  - Essex Road from Essex northwest to Mitchell Caverns*
  - Historic Route 66 (National Trails Highway or Main Street) from Oro Grande northeast and east to the Arizona state line, excepting those areas with incorporated cities
  - I-40 from Ludlow northeast to Needles
  - Kelbaker Road from I-15 southeast to I-40*
  - Lanfair/Ivanpah Road
  - SR-247 (Old Woman Springs Road/Barstow Road) from the Town of Yucca Valley north to Barstow
  - Coxey Truck Trail from Bowen Ranch Road southeast to Rim of the World Drive
  - SR-18 from Big Bear Lake northwest to Apple Valley

- Policy D/OS 1.6: No development of any kind, including resource extraction, shall be approved which would destroy or seriously diminish the visual quality of existing sand dunes.

- Policy OS 7.6: Require that hillside development be compatible with natural features and the ability to develop the site in a manner that preserves the integrity and character of the hillside environment, including but not limited to, consideration of terrain, landform, access needs, fire and erosion hazards, watershed and flood factors, tree preservation, and scenic amenities and quality.

City of Hesperia

City of Hesperia General Plan 2010

The Open Space Element of the City of Hesperia General Plan 2010 identifies natural open space areas that should be preserved, including the Mojave River to the east; the Oro Grande Wash and the San Bernardino and San Gabriel Mountains to the south; and the surrounding Victor Valley, along with neighboring hillsides and the natural desert environment. The following policy from the Open Space Element is relevant to the Proposed Project:

[8] The asterisks in this list indicate that the route has been designated by the BLM as part of its Back Country Byway Program, which is a component of the National Scenic Byway System.

- Implementation Policy OS-4.2: Preserve the aesthetic integrity and usefulness of open space washes by implementing restrictive development standards on projects occurring in or around the wash areas, and ensuring development proposals are compatible.

Nevada

Clark County

Clark County Comprehensive Plan

The Public Facilities and Services Element of the Clark County Comprehensive Plan contains goals and policies for utilities. The following policy is relevant to the Proposed Project:

- Utilities Policy 8: Support the reduction of visual impacts by newly constructed utility poles, towers, substations, and equipment buildings. Use methods for reducing the effect though actions such as:

  - Disguising and co-locating antennas for cell towers;
  - Hiding equipment buildings with screening and solid fencing;
  - Use architecture design on major utility projects to complement the character of a community; and
  - Place high capacity electrical transmission lines underground, to lessen visual impacts in large multi-use projects.

The Clark County Environmentally Sensitive Lands Advisory Committee Report, which provides background information for the Conservation Element, identifies one aesthetic resource—Oro Hanna Spring—within the Proposed Project vicinity.

South Clark County Land Use Plan

The following policy from the South Clark County Land Use Plan is relevant to the Proposed Project:

- Policy 54.8: Since Highway 95 is a gateway to Clark County and the Las Vegas Valley, aesthetics and visual impacts caused by any type of proposed or expanded development, should be controlled.

Laughlin Land Use Plan

The following goal and policies from the Public and Quasi-Public Infrastructure component of the Laughlin Land Use Plan are relevant to the Proposed Project:

- Goal 34: Provide public and quasi-public infrastructure that emphasizes aesthetic considerations in its planning and development.

- Policy 34.1: Encourage the installation of public and quasi-public infrastructure (e.g., electrical substations, water pumping stations, etc.) with enhanced designs which utilize low profile equipment, decorative block walls, drought-tolerant landscaping and features which integrate with adjacent development.

- Policy 34.2: Discourage the use of low voltage overhead electric distribution lines. The Unified Development Code (Title 30) mandates that electric distribution lines be installed underground.

City of Boulder City

City of Boulder City Master Plan

The following policy from the Special Planning Area Policies Chapter of the City of Boulder City Master Plan is relevant to the Proposed Project:

- Policy EV 3: The visual impacts of future development in the Eldorado Valley should be a strong consideration when reviewing future proposals for energy production facilities or other uses. Future development should be designed so as to minimize negative impacts to views of the Eldorado Valley from the urbanized areas of the city.

4.1.3 Significance Criteria

The significance criteria for assessing the impacts to aesthetics come from the CEQA Environmental Checklist.[9] According to the CEQA Checklist, a project causes a potentially significant impact if it would:

- Have a substantial adverse effect on a scenic vista
- Substantially damage scenic resources within a state scenic highway, including, but not limited to: trees, rock outcroppings, and historic buildings
- Substantially degrade the existing visual character or quality of the site and its surroundings
- Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area

4.1.4 Impact Analysis

The evaluation of visual and aesthetic changes resulting from the Proposed Project focuses primarily on the Proposed Project's potential impact on public views, though potential effects on views from nearby private residences were also considered.

4.1.4.1 Visual Resource Management Program

Inventory

To evaluate visual changes associated with the Proposed Project, the BLM's VRM program was used to analyze the six representative KOPs discussed in this section. The VRM classification system is a "systematic process used to analyze potential visual impacts of proposed projects and activities." BLM-managed property was inventoried and assigned one of four classes based on the BLM's evaluation of the form, line, color, and texture of the existing landform/water,

[9] 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.

vegetation, and structures. Class I is assigned to all special areas goals require maintaining a natural environment that is essentially unaltered by man. Classes II, III, and IV are assigned based on a combination of factors that include scenic quality, sensitivity level, and distance zones. The classes and their associated BLM management objectives are as follows:

- Class I: The objective of this class is to preserve the existing character of the landscape. The class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.

- Class II: The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

- Class III: The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

- Class IV: The objective of this class is to provide for management activities that require major modifications of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating basic elements.

As shown in Figure 4.1-2: BLM Visual Resource Management Classes, the VRM classes for BLM-managed land within the area of the Proposed Project are Class, I, II and III, depending on the location, management policies, visual sensitivity, and distance factors. While the VRM program does not apply to non-federal lands, the VRM methodology was used for the entire Proposed Project area to provide a consistent method of assessing potential visual effects for the Proposed Project alternatives. The Proposed Project includes modifications to existing transmission lines within an existing SCE ROW, but surrounding lands would provide distant views with moderate to high scenic value; therefore, non-federal lands were assigned as Class III.

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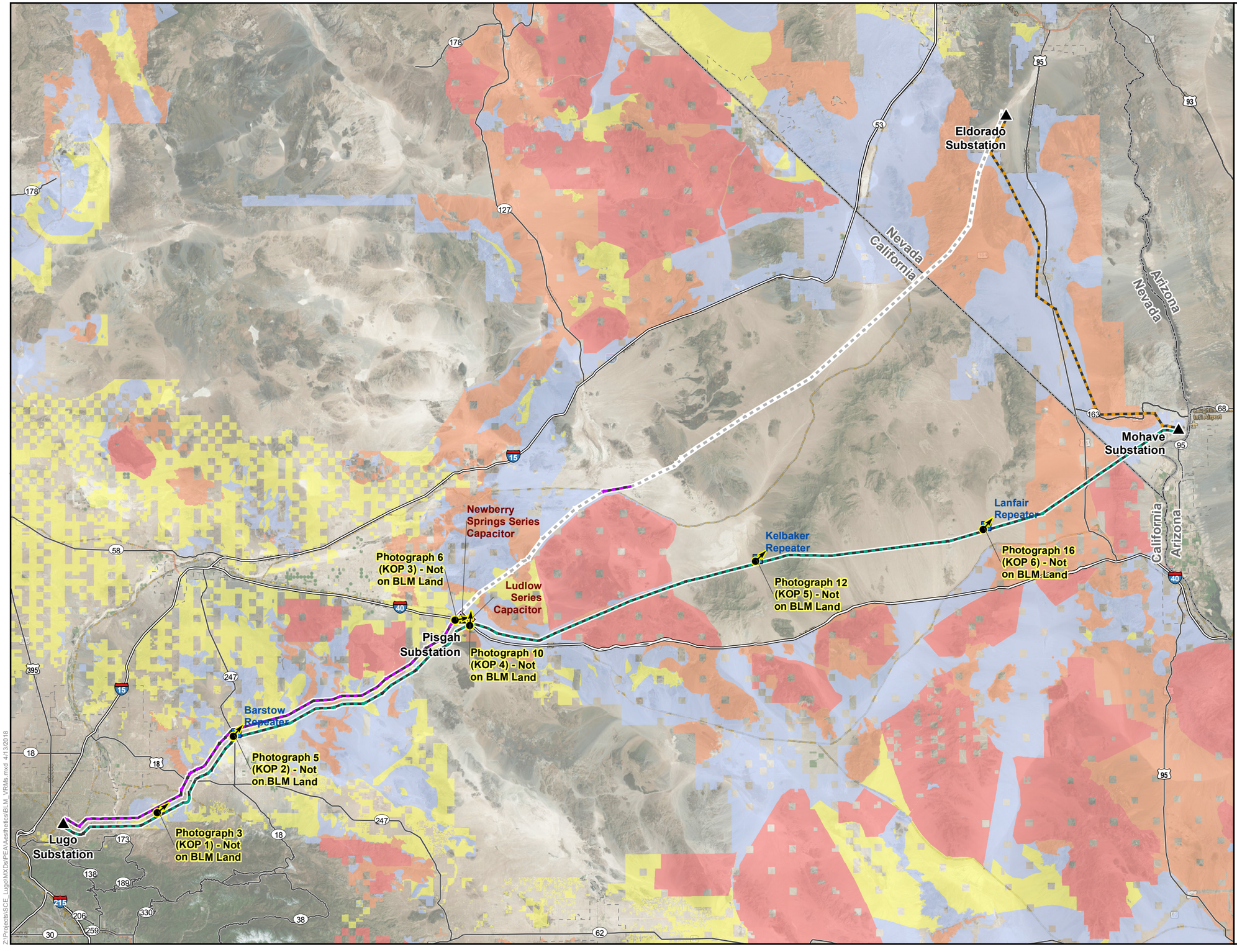


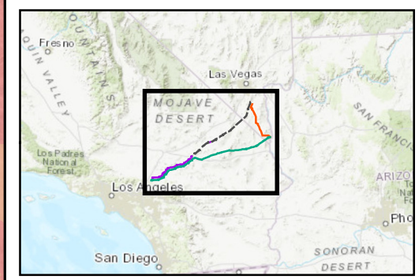
Figure 4.1-2: BLM Visual Resource Management Classes Map

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
- KOP Photo Location

Visual Resource Management Classes

- VRM Class I
- VRM Class II
- VRM Class III
- VRM Class IV



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SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

INSIGNIA ENVIRONMENTAL

Source: Insignia, 2016; CPAD, 2015;
Clark County GIS Management Office (GISMO) 2016

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Analysis Criteria

The assigned class is used to determine the potential impact resulting from the Proposed Project. The classification system was developed to "provide the basis for the consideration of visual resources in the BLM's resource management planning process." The VRM class assigned to the area is compared to the Proposed Project to determine what, if any, mitigation is required to meet the VRM class objectives.

In comparing the pre-construction and post-construction conditions, the BLM Visual Contrast Rating Worksheet Form 8400-4 was used to document the existing environment and the changes resulting from the Proposed Project. Section D of the form evaluates the degree of contrast between the existing environment and the changes that would result from the Proposed Project. The contrast associated with each KOP is evaluated for the following elements:

- Form – Contrast in form results from changes in the shape and mass of landforms or structures. The degree of change depends on how dissimilar the introduced forms are to those continuing to exist in the landscape.

- Line – Contrast in line results from changes in edge types and interruption or introduction of edges, bands, and silhouette lines. New lines may differ in their subelements (e.g., boldness, complexity, and orientation) from existing lines.

- Color – Changes in value and hue tend to create the greatest contrast. Other factors (e.g., chroma, reflectivity, and color temperature) also increase the contrast.

- Texture – Noticeable contrast in texture usually stems from differences in the grain, density, and internal contrast. Other factors (e.g., irregularity and directional patterns of texture) may affect the rating.

The extent or degree of contrast is evaluated based on the following criteria:

- None – The element contrast is not visible or perceived
- Weak – The element contrast can be seen, but does not attract attention
- Moderate – The element contrast begins to attract attention and begins to dominate the characteristic landscape
- Strong – The element contrast demands attention, would not be overlooked, and is dominant in the landscape

Finally, Proposed Project components were assessed for their compatibility with the VRM objectives for its respective VRM class and whether mitigation measures are necessary. Attachment 4.1-B: BLM Visual Contrast Rating Worksheets contains the worksheets prepared for each KOP.

4.1.4.2 Visual Simulations

To accomplish the evaluation, a set of six visual simulations were prepared from six KOPs for the Proposed Project and are provided in Attachment 4.1-C: Visual Simulations. These KOPs are a subset of the viewpoints portrayed in the 21 representative photographs described in

Section 4.1.1.3, Visual Setting and Representative Views. These simulations are described further in the following subsections.

As described previously, computer-generated visual simulations were developed using engineering design data for the Proposed Project. This data was supplied by SCE and includes a range of possible heights for proposed structures. These proposed structures are simulated at the tallest end of the height ranges in order to portray the Proposed Project's greatest potential visibility. Should the new structures be lower than the greatest height in the range, these Proposed Project elements could be less visible than portrayed in the visual simulation images.

KOP 1 – Discrepancy[10] Work Area at Towers M14-T3 to M14-T4

The visual simulation for KOP 1 shows the view of the Proposed Project from Bowen Ranch Road, approximately 0.4 mile from where Tower M14-T4 would be raised to address two clearance discrepancies on the Eldorado-Lugo 500 kV Transmission Line. As shown in the simulation, Tower M14-T4 would be modified and raised approximately 20 feet. From this viewpoint, several LSTs on the Eldorado-Lugo and Lugo-Mohave 500 kV Transmission Lines would be visible. Occasional motorists using this roadway, which is used mainly for local access to residential properties in the area, would have occasional and temporary views of the existing and modified LSTs. As shown in the simulation, the modified LSTs would be taller, would not change substantially in form from other existing LSTs, and would continue the pattern of LSTs within the area.

As shown in Figure 4.1-2: BLM Visual Resource Management Classes, Tower M14-T4 is not located on BLM-managed land, and is therefore assigned VRM Class III. The Visual Contrast Rating Worksheet for this KOP is in Attachment 4.1-B: BLM Visual Contrast Rating Worksheets. The contrast rating of this Proposed Project component is relatively weak, due to the presence of the existing transmission lines in the viewshed. Though the modified tower would be taller, it would continue the form, color, and pattern of the existing transmission lines, and therefore would result in low contrast with existing conditions. The Proposed Project is consistent with the VRM Class III objective, which is to partially maintain the character of the landscape and allow management changes that repeat the basic element found in the existing environment.

KOP 2 – Barstow Fiber Optic Repeater Site

The visual simulation for KOP 2 shows the location of the proposed Barstow Fiber Optic Repeater site along the Eldorado-Lugo and Lugo-Mohave 500 kV Transmission Lines, approximately 0.4 mile east of SR-247. As shown in the simulation, the proposed facility, including the equipment building and perimeter fencing, would be visible from this County of San Bernardino-designated scenic route. Motorists traveling along Barstow Road would be the

[10] 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 is needed to address CPUC G.O. 95 and National Electrical Safety Code overhead clearance requirements.

main viewer group, along with the residents living in the neighboring residential property. Though the residential viewers would have a relatively sustained view of the new Barstow Fiber Optic Repeater facility, motorists traveling along the roadway would have temporary views of the new facility and their views would be short in duration. Because the proposed Barstow Fiber Optic Repeater facility would be relatively small and because the surrounding mountains are distant, views of the mountains would not be impacted.

As shown in Figure 4.1-2: BLM Visual Resource Management Classes, the proposed Barstow Fiber Optic Repeater site is not located on BLM-managed land and is therefore assigned VRM Class III. To assess the visual contrast of the Proposed Project, the visual simulation for KOP 2 was analyzed using the Visual Contrast Rating Worksheet in Attachment 4.1-B: BLM Visual Contrast Rating Worksheets. The overall contrast rating of this Proposed Project component is weak. Due to the distance of the fiber optic repeater facility from the KOP location, the building enclosing the mechanical equipment would be the single visible component. The building would appear as a solid, light brown form and would continue the existing pattern in the area that is created by the scattered residential buildings and equipment storage nearby. The Proposed Project integrates well into the existing surroundings and would not contrast with the visual character of the surrounding landscape. The Proposed Project is consistent with the VRM Class III objective, which is to partially maintain the character of the landscape and allow management changes that repeat the basic element found in the existing environment.

KOP 3 – Newberry Springs Series Capacitor Site

The visual simulation for KOP 3 shows the location of the proposed Newberry Springs Series Capacitor along the Eldorado-Lugo 500 kV Transmission Line. This site is located northeast of the existing Pisgah Substation, and would be visible from several roadways, including I-40, the National Trails Highway (Route 66), Pisgah Road, and Pisgah Crater Road. As shown in the simulation, the proposed mid-line series capacitor[11] facility would be located approximately 0.9 mile from I-40 and would be visible from these roadways, primarily by passing motorists along the two highways. The proposed facility includes the relatively solid-looking capacitor bank, which is located on a platform in the center of the site. A transmission interface structure[12] is located on either side of the capacitor bank, connecting the capacitor to the transmission line. The conductor would span from an existing LST through the new the interface structures to the existing LST on the other side. The overhead ground wire will span from the existing LST to the existing LST on the other side. The entire facility is surrounded by an 8-foot-tall chain-link fence. The new facility is visible within the transmission line ROW, where existing 500 and 220 kV LSTs and Pisgah Substation are visible. A train is also visible behind the proposed capacitor facility as it travels through or stops in the area.

Motorists would have temporary and partial views of the proposed facility, and their views would be short in duration, particularly along I-40, where travel speeds are up to 70 miles per hour (mph), or greater. As shown in the background of the visual simulation, views of the

[11] The Proposed Project includes construction of two new 500 kV mid-line series capacitors—the proposed Newberry Springs Series Capacitor and Ludlow Series Capacitor.
[12] SCE is evaluating the use of transmission interface structures.

surrounding mountains would not be impacted due to their distance from the proposed Newberry Springs Series Capacitor and its relatively low profile against the mountainous backdrop.

As shown in Figure 4.1-2: BLM Visual Resource Management Classes, the proposed Newberry Springs Series Capacitor site is located in a VRM Class III area. To assess the visual contrast of the Proposed Project, the visual simulation for KOP 3 was analyzed using the Visual Contrast Rating Worksheet in Attachment 4.1-B: BLM Visual Contrast Rating Worksheets. The overall visual contrast rating of this Proposed Project component is weak to moderate. Due to the location of the proposed facility within a ROW near an existing substation and LSTs, the proposed facility repeats elements that are already visible in the viewshed. Therefore, the proposed mid-line series capacitor integrates well into the existing surroundings and would not contrast with the visual character of the surrounding landscape. The Proposed Project is consistent with the VRM Class III objective, which is to partially maintain the character of the landscape and allow management changes that repeat the basic element found in the existing environment.

KOP 4 – Ludlow Series Capacitor Site

The visual simulation for KOP 4 shows the location of the proposed Ludlow Series Capacitor along the Lugo-Mohave 500 kV Transmission Line. This site would be visible to the public, and primarily to motorists traveling westbound on I-40. As shown in the simulation, the proposed mid-line series capacitor would be located approximately 0.7 mile from the roadway and would be visible primarily to passing motorists. The proposed facility includes the relatively solid-looking capacitor bank, which is located on a platform in the center of the site. A transmission interface structure is located on either side of the capacitor bank, connecting the capacitor to the transmission line. The conductor would span from an existing LST through the new the interface structures to the existing LST on the other side. The overhead ground wire will span from the existing LST to the existing LST on the other side. Also visible in the visual simulation is the tan-colored Mechanical Electrical Equipment Room (MEER) building associated with the mid-line series capacitor, and the entire facility is surrounded by an approximately 8-foot-tall chain-link fence. The new facility is visible within the transmission line ROW where existing LSTs of the Lugo-Mohave 500 kV Transmission Line are also visible.

Due to high travel speeds up to 70 mph or greater, motorists would have temporary, and in some locations, partial views of the facility, and their views would be short in duration. As shown in the background of the visual simulation, views of the surrounding mountains would not be impacted due to their distance from the proposed Ludlow Series Capacitor and its relatively low profile against the mountainous backdrop.

As shown in Figure 4.1-2: BLM Visual Resource Management Classes, the proposed Ludlow Series Capacitor site is located in a VRM Class III area. To assess the visual contrast of the Proposed Project, the visual simulation for KOP 4 was analyzed using the Visual Contrast Rating Worksheet in Attachment 4.1-B: BLM Visual Contrast Rating Worksheets. The contrast rating of this Proposed Project component is weak to moderate. Due to the location of the proposed facility within a ROW with existing LSTs, the proposed facility integrates well into the existing surroundings and would not contrast with the visual character of the surrounding landscape. The Proposed Project is consistent with the VRM Class III objective, which is to partially maintain

the character of the landscape and allow management changes that repeat the basic element found in the existing environment.

KOP 5 – Kelbaker Fiber Optic Repeater Site

The visual simulation for KOP 5 shows the location of the proposed Kelbaker Fiber Optic Repeater site along the Lugo-Mohave 500 kV Transmission Line, approximately 0.2 mile east of Kelbaker Road, which is a County of San Bernardino-designated scenic route. As shown in the simulation, the proposed facility, including the equipment building and perimeter fencing, would be visible on the far side of an existing single-circuit LST. Motorists traveling along Kelbaker Road would be the main viewer group, but they would have temporary views of the proposed Kelbaker Fiber Optic Repeater facility, and their views would be short in duration. As shown in the background of the simulation, views of the mountains would not be impacted due to the relatively small size of the facility and its distance from the mountains.

As shown in Figure 4.1-2: BLM Visual Resource Management Classes, the proposed Kelbaker Fiber Optic Repeater site is located on a VRM Class III site. To assess the visual contrast of the Proposed Project, the visual simulation for KOP 5 was analyzed using the Visual Contrast Rating Worksheet in Attachment 4.1-B: BLM Visual Contrast Rating Worksheets. The overall contrast rating of this Proposed Project component is weak. Due to the distance of the fiber optic repeater facility from the KOP location, the building enclosing the mechanical equipment would be the single visible component. The building would appear as a solid, light brown form, which is a new element in the viewshed, but it is partially hidden by the vegetation in the forefront. Because the proposed fiber optic repeater is being located adjacent to an existing single-circuit LST within the existing ROW, the facility is somewhat integrated into the existing surroundings and would not contrast with the visual character of the surrounding landscape. The Proposed Project is consistent with the VRM Class III objective, which is to partially maintain the character of the landscape and allow management changes.

KOP 6 – Lanfair Fiber Optic Repeater Site

The visual simulation for KOP 6 shows the location of the proposed Lanfair Fiber Optic Repeater site along the Lugo-Mohave 500 kV Transmission Line, approximately 0.4 mile east of Lanfair Road, which is a County of San Bernardino-designated scenic route. As shown in the simulation, the proposed facility, including the equipment building and perimeter fencing, would be visible on the far side of an existing single-circuit LST. Motorists traveling along Lanfair Road would be the main viewer group, and this group would experience views of the proposed Lanfair Fiber Optic Repeater facility that would be temporary and short in duration. As shown in the background of the simulation, views of Signal Hill would not be impacted due to the relatively small size of the facility and its distance from Signal Hill.

As shown in Figure 4.1-2: BLM Visual Resource Management Classes, the proposed Lanfair Fiber Optic Repeater site is located on a VRM Class III site. To assess the visual contrast of the Proposed Project, the visual simulation for KOP 6 was analyzed using the Visual Contrast Rating Worksheet in Attachment 4.1-B: BLM Visual Contrast Rating Worksheets. The overall contrast rating of this Proposed Project component is weak. Due to the distance of the fiber optic repeater facility from the KOP location, the building enclosing the mechanical equipment would be the single visible component. The building would appear as a solid, light brown form, which is a

new element in the viewshed. However, the facility is located adjacent to an existing LST, and from this KOP, appears to be visible directly behind the single-circuit LST. Because of its proximity to the existing LST, the facility is integrated into the existing surroundings and would not contrast with the visual character of the surrounding landscape. The Proposed Project is consistent with the VRM Class III objective, which is to partially maintain the character of the landscape and allow management changes.

4.1.4.3 Would the project have a substantial adverse effect on a scenic vista?

Construction

Less-Than-Significant Impact. There are no designated State or local scenic vistas in the Proposed Project area. However, there are scenic views throughout the Proposed Project vicinity, due to the undeveloped desert open spaces and unimpeded views of the surrounding mountains. As shown in Attachment 4.1-C: Visual Simulations, the simulations of KOPs 2, 3, 4, 5, and 6 show the proposed permanent facilities in relation to views of the surrounding mountains. As previously discussed, the proposed mid-line series capacitors and fiber optic repeater sites would be located mainly within existing ROWs that include existing substations, transmission lines, and LSTs. The proposed facilities would be relatively small compared to the mountains in the background, and views of the mountains would remain unimpeded. In addition, the facilities do not contrast substantially with the existing landscape, and are relatively consistent with VRM classes and objectives. Therefore, impacts on scenic vistas are less than significant.

Operation

Less-Than-Significant 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 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 at least 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.

4.1.4.4 Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Construction

Less-Than-Significant Impact. There are no designated State Scenic Highways in the Proposed Project area, and therefore there would be no impact to these facilities. However, there are several locally designated scenic roadways, particularly within San Bernardino County, and the

National Trails Highway (Route 66) is nominated as a National Scenic Byway. During construction of the Proposed Project, construction crews, trucks, and equipment would be visible from locally designated scenic roadways. The temporary activities and equipment—including cranes and helicopters—would be visible from County of San Bernardino-designated scenic roadways during construction, including Coxey Truck Trail, SR-18, SR-247, Kelbaker Road, Essex Road, Black Canyon Road, and Lanfair Road. These activities would also be visible at the US-95, I-40, and National Trails Highway (Route 66) crossings. Construction activities associated with these components of the Proposed Project would be temporary, lasting weeks or months for the capacitors and repeaters, and a day or two along the linear components before moving onto the next segment.

The Proposed Project includes the construction of the proposed Newberry Springs and Ludlow Series Capacitors, both of which would be viewed from I-40. The Newberry Springs Series Capacitor site can also be viewed from the National Trails Highway (Route 66). However, as shown in the simulation for KOP 3 in Attachment 4.1-C: Visual Simulations, the Newberry Springs Capacitor site, which is approximately 0.9 mile from I-40 and the National Trails Highway (Route 66), would be viewed among the existing single-circuit LSTs of the Eldorado-Lugo 500 kV Transmission Line, Pisgah Substation, and other poles and single-circuit LSTs. Viewed in the context of these existing facilities, the Proposed Project has an incremental impact and does not affect views of the mountains in the background. Therefore, visual impacts to scenic resources would be less than significant.

Similar to the proposed Newberry Springs Series Capacitor, the proposed Ludlow Series Capacitor would be visible from I-40. As shown in the visual simulation for KOP 4, this facility would be located approximately 0.7 mile from I-40. The proposed Ludlow Series Capacitor and the proposed MEER building would be viewed in the presence of the existing single-circuit LSTs, which would result in an incremental change in the viewshed, but this would not affect the views of the mountains in the background. Therefore, visual impacts to scenic resources would be less than significant.

The proposed Barstow, Kelbaker, and Lanfair Fiber Optic Repeater facilities would be visible from County of San Bernardino-designated scenic roadways—SR-247, Kelbaker Road, and Lanfair Road, respectively. Visual simulations of the facilities are shown in KOPs 2, 5, and 6 in Attachment 4.1-C: Visual Simulations. As shown in the simulation for KOP 2, the proposed Barstow Fiber Optic Repeater facility would be located approximately 0.4 mile from SR-247 and would be visible in the middle ground of the simulation. However, the facility would be located near existing single-circuit LSTs, and the view of the facility would be somewhat camouflaged by the presence of existing residential and outbuildings, as well as farming equipment that is stored in the area. In addition, the proposed facility would have a relatively low profile and would not conflict with views of the surrounding mountains. Therefore, the impact would be less than significant.

As shown in the simulation for KOP 5 in Attachment 4.1-C: Visual Simulations, the proposed Kelbaker Fiber Optic Repeater facility would be located approximately 0.2 mile from Kelbaker Road and would be visible in the middle ground of the simulation. However, the facility would be located near an existing single-circuit LST within SCE's ROW. While this facility is more visible than the other simulated facilities due to its proximity to the roadway, the facility would

have little effect on the views of the surrounding mountains. Therefore, the impact would be less than significant.

As shown in the simulation for KOP 6 in Attachment 4.1-C: Visual Simulations, the proposed Lanfair Fiber Optic Repeater facility would be located approximately 0.4 mile from Lanfair Road and is visible in the foreground to middle ground of the simulation. Like the other fiber optic repeaters, this facility would be located near existing single-circuit LSTs within an existing SCE ROW. In this portion of the Proposed Project area, views of nearby mountains are limited to a single hill, and the facility, which appears low-lying in the surrounding viewshed, would have little impact on the views in the area; therefore, the change in the viewshed would be minor and incremental, and the impact would be less than significant.

Additional components of the Proposed Project, including removal of overhead ground wire (OHGW) and installation of optical ground wire (OPGW), would take place on existing LSTs along the Eldorado-Mohave and Lugo-Mohave 500 kV Transmission Lines. Minor modifications to the single-circuit LSTs, including the modification of the ground wire peaks, may be necessary to facilitate the new OPGW. While these modifications would be visible from public roadways, including County of San Bernardino-designated scenic roadways, they would not result in appreciable visual alterations to the viewshed. However, because none of these roadways are State Scenic Highways and visual resources would not be affected, there would be no impact.

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, though there would be additional O&M activities associated with the proposed mid-line series capacitors and fiber optic repeater facilities. The mid-line series capacitor and fiber optic repeater facilities would be unmanned, but equipment and trucks may be visible from nearby roadways (e.g., I-40, the National Trails Highway (Route 66), SR-247, Kelbaker Road, and Lanfair Road) during maintenance activities. However, maintenance activities would be temporary and short in duration, and due to the distance of the facilities from the roadways, the trucks and equipment would appear small in the distance and would be hidden from view by the facilities themselves, depending on the access road locations. Views of the surrounding natural environment, including mountains in the background of these viewsheds, would not be altered. In addition, because none of these roadways are State Scenic Highways, there would be no impact.

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

Construction

Less-Than-Significant Impact. During construction of the previously described facilities, construction crews, trucks, and equipment would be visible from public roadways and a few residences located close to the existing ROWs. In some locations, staging yards and pulling and tensioning sites may also be visible. Additional construction activities, including removal of OHGW and installation of OPGW, would take place on existing single-circuit LSTs along the Eldorado-Mohave and Lugo-Mohave 500 kV Transmission Lines. Construction activities

associated with the installation of goat peaks on LSTs would be temporary, lasting a day or two before moving onto the next LST. Views of the activities—as well the as trucks, equipment, cranes, helicopters, staging yards, and pulling and tensioning sites—would be temporary. Areas used for staging yards and pulling and tensioning sites would be restored to previously existing conditions where feasible. Therefore, impacts would be less than significant.

The Proposed Project would modify and add facilities to three existing transmission lines located mainly within SCE's existing ROWs. The Proposed Project would result in the construction of five new facilities within the ROWs—the proposed Newberry Springs and Ludlow Series Capacitors and the proposed Barstow, Kelbaker, and Lanfair Fiber Optic Repeater facilities. As previously described, the construction of these permanent facilities would have incremental visual impacts on the existing viewshed, due to the presence of an existing substation and LSTs associated with the existing Eldorado-Lugo and Lugo-Mohave 500 kV Transmission Lines. As described in Attachment 4.1-B: BLM Visual Contrast Rating Worksheets, the VRM rating associated with the proposed facilities would be weak to moderate for the mid-line series capacitors and weak for the fiber optic repeater sites. Because of distance from public viewpoints, as well as viewsheds that include existing transmission facilities, the Proposed Project facilities would be relatively well integrated into the visual surroundings. In addition, the weak to moderate visual contrast with the surroundings are consistent with the VRM Class III objective. Therefore, impacts would be less than significant.

The Proposed Project also includes modifications to the Eldorado-Lugo, Eldorado-Mohave, and Lugo-Mohave 500 kV Transmission Line single-circuit LSTs and conductor or grading at 14 locations to address 16 overhead clearance discrepancies. The visual simulation for KOP 1 depicts the visual change associated with modifying (i.e., jacking) LSTs to raise the conductor between the LSTs, resulting in the elimination of the clearance discrepancy. The visual simulation for KOP 1 shows the modification of Tower M14-T4, which would eliminate the discrepancy between that tower and Towers M14-T3 and M15-1. This modification would be visible from Bowen Ranch Road, a windy local collector that is mainly used by local residents. As shown in the simulation, Tower M14-T4 would be raised by approximately 20 feet to approximately 155 feet in height. Because the tower was previously existing and is part of a pattern of existing towers associated with the two transmission lines in this ROW, the impact of raising both the single-circuit LST and the conductor is an incremental change from the existing conditions. In terms of the contrast rating, the contrast associated with the tower modification is relatively weak, and is consistent with the VRM Class III objective (like the other proposed permanent facilities). In addition, minor modifications to the LSTs, including the installation of goat peaks, may be necessary to facilitate the new OPGW, but would not result in appreciable visual alterations to the viewshed. As a result, the permanent changes associated with the Proposed Project 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. However, O&M activities associated with these facilities would result in the

temporary presence of workers and equipment, which would not be appreciably different than current O&M activities. Therefore, impacts would be less than significant.

4.1.4.6 Would the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

Construction

Less-Than-Significant Impact. Construction of the Proposed Project would generally occur during daytime hours. However, for some construction activities, work may be required at night. Construction activities conducted at night would require the use of floodlights, which have the potential to illuminate properties in the vicinity of construction areas. To reduce the impact of nighttime lighting on neighboring properties, lighting would be directed on the Proposed Project site and away from surrounding areas during construction. Therefore, the impact 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. The proposed mid-line series capacitors and the fiber optic repeaters would utilize occasional outdoor yard lighting in the event of an emergency, or when required for O&M. As described in Chapter 3, Project Description, the lighting would be controlled by a manual switch, which would normally be in the "off" position, and directed downward to avoid glare. Therefore, impacts would be less than significant.

4.1.5 Applicant-Proposed Measures

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

4.1.6 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 aesthetics in the following discussion.

The alternative 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 is located farther from I-40 and the National Trails Highway (Route 66). Motorists' views of construction of the facility, the

completed facility, or any O&M activities at this location would be more distant. In addition, the facility would appear smaller relative to the existing landscape. Therefore, both construction and O&M impacts at the alternative location would be less than the impacts at the proposed location.

The alternative Ludlow Series Capacitor site is located closer to I-40. Motorists' views of construction of the facility, the completed facility, or any O&M activities at this location would be closer. The facility would appear larger relative to the existing landscape, and impacts to scenic resources or views of the mountains could be interrupted. Therefore, both construction and O&M impacts at the alternative location would be greater than the impacts at the proposed location.

4.1.7 References

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