

Appendix B

Visual Resources

**ORD MOUNTAIN SOLAR AND
ENERGY STORAGE PROJECT
ENVIRONMENTAL IMPACT REPORT**

DRAFT

Visual Resources Study Ord Mountain Solar and Energy Storage Project and Calcite Substation Project

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Draft Visual Resources Study Ord Mountain Solar Project

TABLE OF CONTENTS

<u>Section</u>	<u>Page No.</u>
ACRONYMS AND ABBREVIATIONS.....	V
1 INTRODUCTION.....	1
1.1 Purpose of Analysis	1
1.2 Visual Resource Concepts and Terminology.....	1
1.2.1 Visual Character.....	2
1.2.2 Visual Quality	2
1.2.3 Viewer Response	2
1.2.4 Distance Zones.....	3
1.2.5 Project Viewshed	4
1.2.6 Key Issues	4
2 PROJECT DESCRIPTION	7
2.1 Project Location	7
2.2 Proposed Project	7
3 EXISTING VISUAL SETTING	21
3.1 Project Site	21
3.2 Surrounding Area.....	22
4 EXISTING VISUAL RESOURCES AND VIEWER RESPONSE	29
4.1 Visual Character.....	29
4.2 Visual Quality	30
4.3 Viewer Response	31
5 REGULATORY SETTING	35
5.1 Federal Regulations	35
5.2 State Regulations	35
5.3 Local Regulations	36
6 VISUAL IMPACT ASSESSMENT.....	43
6.1 Methodology	43
6.1.3 Key Observation Points	43
6.1.4 Visual Simulations.....	44
6.1.5 Visual Analysis	45
6.1.6 Glare Effects	45
6.2 Thresholds of Significance	45

Draft Visual Resources Study Ord Mountain Solar Project

TABLE OF CONTENTS (CONTINUED)

<u>Section</u>	<u>Page No.</u>
6.3 Impact Assessment.....	46
6.3.1 Threshold A: Would the project have a substantial adverse effect on a scenic vista?	46
6.3.2 Threshold B: Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	49
6.3.3 Threshold C: Would the project substantially degrade the existing visual character or quality of the site and its surroundings?	50
6.3.4 Threshold D: Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	67
7 REFERENCES.....	71

APPENDIX

A Visual Contrast Rating Forms

FIGURES

1 Regional Map.....	73
2 Vicinity Map	75
3a Site Plan	77
3b Calcite Substation Project Components.....	79
4 Photo Location Map.....	81
4a On-site Visual Elements	83
4b On-site Visual Elements	85
4c On-site Visual Elements	87
4d Off-site Visual Elements.....	89
4e Off-site Visual Elements.....	91
4f Off-site Visual Elements.....	93
4g Off-site Visual Elements.....	95
5 Residences.....	97
7a Key Observation Point 1 – Looking West from Meridian Road across from the Project Site	101
7b Key Observation Point 1 – Visual Simulation.....	103

Draft Visual Resources Study Ord Mountain Solar Project

TABLE OF CONTENTS (CONTINUED)

	<u>Page No.</u>
8a Key Observation Point 2 – Looking Northwest from Meridian Road toward Project Site	105
8b Key Observation Point 2 – Visual Simulation.....	107
9a Key Observation Point 3 – Looking Southwest from Intersection of Fern Road and Desert Lane toward Project Site.....	109
9b Key Observation Point 3 – Visual Simulation.....	111
10a Key Observation Point 4 – Looking East from SR-247 at Waalew Road toward Project Site.....	113
10b Key Observation Point 4 – Visual Simulation.....	115
11a Key Observation Point 5 – Looking Northwest from Haynes Road toward Project Site	117
11b Key Observation Point 5 – Visual Simulation.....	119
12a Key Observation Point 6 – Looking West from Waalew Road near Rodeo Road toward Project Site	121
12b Key Observation Point 6 – Visual Simulation.....	123
13a Key Observation Point 7 – Looking Southeast from SR-247 near Cummings Road toward Project Site	125
13b Key Observation Point 7 – Visual Simulation.....	127
14a Key Observation Point 8 – Looking southwest from SR-247 near Waalew Road toward Calcite Substation Site.....	129
14b Key Observation Point 8 – Visual Simulation.....	131
15a Key Observation Point 9 – Looking Northwest from Fern Road and SR-247 towards Calcite Substation Site	133
15b Key Observation Point 9 – Visual Simulation.....	135
16a Key Observation Point 10 - Looking west from SR-247 towards Calcite Substation site	137
16b Key Observation Point 10 - Visual Simulation.....	139
17a Key Observation Point 11 - Looking southeast from SR-247 towards on-site substation and energy storage system site	141
17b Key Observation Point 11 - Visual Simulation.....	143
18 Key Observation 1 - Visual Simulation (with Mitigation Incorporated).....	145
19 Key Observation 2 - Visual Simulation (with Mitigation Incorporated).....	147
20 Key Observation 4 - Visual Simulation (with Mitigation Incorporated).....	149
21 Key Observation 6 - Visual Simulation (with Mitigation Incorporated).....	151

**Draft Visual Resources Study
Ord Mountain Solar Project**

TABLE OF CONTENTS (CONTINUED)

	<u>Page No.</u>
22 Key Observation 8 - Visual Simulation (with Mitigation Incorporated).....	153
23 Key Observation 9 - Visual Simulation (with Mitigation Incorporated).....	155
24 Key Observation 10 - Visual Simulation (with Mitigation Incorporated).....	157
25 Key Observation 11 - Visual Simulation (with Mitigation Incorporated).....	159
26 Color Shifting of Photovoltaic Solar Panels Throughout the Day Copper Mountain Solar Facility, Boulder City, NV	161

Draft Visual Resources Study Ord Mountain Solar Project

ACRONYMS AND ABBREVIATIONS

Abbreviation	Definition
AADT	annual average daily traffic
ACSR	aluminum conductor steel-reinforced cable
amsl	above mean sea level
CEQA	California Environmental Quality Act
gen-tie	generator tie
HVAC	heating, ventilation, and air-conditioning
KOP	key observation point
PV	photovoltaic
SCE	Southern California Edison
SR-	State Route

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1 INTRODUCTION

1.1 Purpose of Analysis

This visual resources study analyzes the potential effects of the proposed Ord Mountain Solar and Energy Storage Project and Calcite Substation Project (proposed project) on visual resources in accordance with the California Environmental Quality Act (CEQA). This report also proposes measures to avoid, minimize, or mitigate adverse visual change associated with construction and/or operation of the project on the surrounding visual environment. The lead agency for the review of the visual resources study is the County of San Bernardino (County) and California Public Utilities Commission (CPUC) is a responsible agency.

1.2 Visual Resource Concepts and Terminology

For purposes of this study, visual resources are defined as the various elements and features of the landscape that contribute to the visual character of a particular setting. Natural and man-made elements and features are considered visual resources, as are objects, vistas, and viewsheds. A visual resource assessment typically begins with fieldwork and an inventory of the existing visual resources and conditions of a particular site. In general, a visual resource assessment includes the following processes:

- Inventory and describe the existing visual setting of the project site and surrounding area.
- Identify sensitive viewers and representative viewpoints (also known as key observation points) to the project site. Representative viewpoints are used in the visual study to document the anticipated level of visual change occurring in the area as a result of the project in question.
- Analyze the anticipated visual change occurring as a result of the proposed project.
- If effects will be significant, identify appropriate design treatments or recommendations to avoid or reduce significant effects.

The process described above is based on the analysis process established by the Bureau of Land Management Visual Resource Management (VRM) system (BLM 1986).. The intent of the process outlined above is the measurement of the aesthetic value of an area according to visual character, quality and viewer response to a particular visual resource change represented by the project. These concepts and other key issues discussed in this visual resource assessment are described in the following subsections.

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1.2.1 Visual Character

Visual character is defined by descriptive attributes in the landscape. Natural and artificial landscape features contribute to the visual character of an area or view. Visual character is influenced by geologic, hydrologic, botanical, wildlife, recreational, and urban features. Urban features include those associated with development, such as massed structures, roads, utilities, earthworks, and the results of other concentrated human activity. The perception of visual character can vary significantly seasonally and even hourly, as weather, light, shadow, and elements that compose the viewshed change. The basic elements used to describe visual character for most visual assessments are the form, line, color, and texture of landscape features. The appearance of the landscape is described in terms of the dominance of these components.

1.2.2 Visual Quality

Visual quality is also evaluated according to the vividness, intactness, and unity present in the landscape. This approach to evaluating visual quality can help identify specific methods for mitigating specific adverse impacts that may occur because of a project. The three criteria for evaluating visual quality can be defined as follows:

- Vividness is the overall memorability of landscape components as they combine in distinctive visual patterns.
- Intactness is the visual integrity of the natural and man-made landscape and its freedom from encroaching elements. It can be present in well-kept urban and rural landscapes, as well as in natural settings.
- Unity is the visual coherence and compositional harmony of the landscape considered as a whole. It frequently attests to the careful design of individual components in the landscape.

1.2.3 Viewer Response

Viewer response is composed of two elements: viewer sensitivity and viewer exposure. These elements combine to form a method of predicting how viewers might react to visual changes brought about by a project. The concepts of viewer sensitivity and viewer exposure are described in the following paragraphs, as is the concept of viewer volume. Viewer groups in the project area are also identified in this section.

Viewer Sensitivity

Viewer sensitivity is described in qualitative terms of high, medium, or low and is based on a number of factors including the number and types of viewers/users potentially affected, amount

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of use, adjacent land uses, special areas such as Natural Areas, Wilderness, Wilderness Study Areas, and Wild and Scenic Rivers, viewing distances, and documented public interest/concern about visual changes to the environment.

Viewer Exposure

In addition to the visual factors described previously, the visual resources analysis considered viewer exposure. The elements of viewer exposure help to define viewer perceptions resulting from a dynamic experience with the landscape and related visual resources. Viewer exposure varies depending on the angle of view (i.e., normal, inferior, or superior viewing angles), view distance (i.e., foreground, middleground, and background), relationship to sun angle (e.g., backlighting vs. front or side lighting), the extent of visibility (i.e., whether views are panoramic or limited by vegetation, topography, or other land uses), and viewer screening conditions (e.g., whether the project facilities would be skylined on ridgelines, backscreened by topography and/or vegetation, or screened by structures or vegetation in the foreground). Viewer exposure also considers the duration of view based on viewer activity (e.g., travel, residential use, and recreation) and often relates to speed of travel (i.e., pedestrian, vehicular, or stationary). Viewer exposure is considered long term for residents, short term for travelers along roadways, and moderate for users of public trails.

Viewer Volume

Viewer volume is the number of potential viewers from any given point. Viewer volume can be defined by the average daily traffic on a roadway, number of residents in a development, consumers at a large commercial center, or users of a recreational area. While viewer volume does not directly translate to viewer sensitivity, this factor can be influenced by taking into consideration the number of potential viewers at a given observation point.

Viewer Groups

Viewer groups consist of individuals that frequent public viewpoints in the project area. The two viewer groups identified in the project area are residents and motorists. There are no known recreational areas located within the viewshed of the proposed project; therefore, recreational viewers are not discussed in this analysis.

1.2.4 Distance Zones

Landscapes are subdivided into 3 distance zones based on relative visibility from travel routes or observation points. The 3 zones are: foreground-middleground, background, and seldom seen. The foreground-middleground zone includes areas seen from highways, rivers, or other viewing

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locations that are less than 3 to 5 miles away. Visible areas beyond the foreground-middleground zone but usually less than 15 miles away are in the background zone. Areas not seen as foreground-middleground or background (i.e., hidden from view) are in the seldom-seen zone. The distance zones described above and in greater detail below are consistent with Bureau of Land Management (BLM) guidelines established for visual resource inventories in Manual H-8410-1 (BLM 1986).

Foreground-Middleground Zone

This area can be seen from each travel route for a distance of 3 to 5 miles where management activities might be viewed in detail. The outer boundary of this distance zone is defined as the point where the texture and form of individual plants are no longer apparent in the landscape. In some areas, atmospheric conditions can reduce visibility and shorten the distance normally covered by each zone. Also, where the foreground-middleground zone from one travel route overlaps the background from another route, use only the foreground-middleground designation.

Background Zone

This is the remaining area which can be seen from each travel route to approximately 15 miles. Do not include areas in the background that are so far distant that the only thing discernible is the form or outline. In order to be included within this distance zone, vegetation should be visible at least as patterns of light and dark.

Seldom-Seen Zone

These are areas that are not visible within the foreground-middleground and background zones and areas beyond the background zones.

1.2.5 Project Viewshed

A viewshed is comprised of all the surface areas visible from an observer's viewpoint. The limits of a viewshed are defined as the visual limits of the views located from the proposed project. The viewshed also includes the locations of viewers likely to be affected by visual changes brought about by project.

1.2.6 Key Issues

Typical adverse effects on visual resources associated with the development of solar projects include the loss of natural features or areas, the removal of features with aesthetic value, or the introduction of contrasting utility features into natural and/or undeveloped areas. The loss or

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alteration of visually significant features and the introduction of disparate features that conflict with existing visual character and visual elements of form, line, color, and texture are generally considered significant adverse visual effects. The following characteristics drive the visual context of the existing site:

- The project site consists of relatively flat and previously disturbed land with nearly half devoid of vegetation and the remainder sparsely vegetated by low mounded shrubs;
- Existing structures/features on site include an abandoned residence, scattered well pumps, and three large and geometric steel lattice structures (the southern boundary of project site is traversed east to west by an existing regional transmission corridor consisting of three high voltage lines);
- The surrounding area is marked by abandoned structures, vacant and undeveloped lands, and scattered rural residences that contain varying levels of informal storage of large-scale items such as trailers and vehicles;
- The project site is located in close proximity to a segment of State Route 247 (SR-247) designated as an eligible state scenic highway; and
- The project site is located on the valley floor with mountainous terrain located to the west, north, and east. While distant, the San Bernardino Mountains are located south of the project site. Views to local and regional mountainous terrain are available (at varying distances) from all side of the project site.

The following elements of the project have the potential to result in significant visual character and quality impacts:

- Introduction of 250,000 orderly, rectangular photovoltaic (PV) panels and ancillary project components to a primarily undeveloped high desert landscape characterized by flat terrain scattered with low, mounded shrubs and occasional single-family residences and flanked by low hills and rugged mountains to the north, west, and south;
- Vegetation clearing (where necessary) across the 484-acre project site and resulting visual contrast in form, color, and texture between the project site and surrounding areas dotted by low, mounded shrubs prior to installation of solar panels; and
- Introduction of an open-air project substation consisting of components up to 55 feet in height and overhead lines supported by 45- to 60-foot-tall poles for the single and double circuits, respectively; with the exception of tall steel lattice towers supporting an existing 500 kilovolt (kV) transmission line in the southern portion of the 484-acre project site, vertical elements at the proposed substation facility would be greater in height than

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existing residential structures in the vicinity, and could potentially result in moderate to strong form and color contrast with existing structures.

- Construction and operation of an energy storage system that would be housed in a 35,000 square-foot, 20-foot high building located adjacent to the open-air project substation.
- Construction and operation of the Calcite Substation, a new regional 220 kV collector substation on an approximate 13 acre site that includes 6 acres for drainage, grading, and an access road. This substation would support the solar and energy storage facility.
- The addition of new tubular steel poles (TSPs) or lattice steel towers (LSTs) to the proposed project area landscape and more specifically, within close proximity to SR-247 (SR-247). SR-247 is an eligible state scenic highway and a County-designated scenic highway.
- Construction of approximately 2,000 feet of 12 kV overhead distribution line and approximately 2,100 feet of underground distribution line (connecting the existing distribution system along Haynes Road to Calcite Substation) to provide temporary power for construction and permanent substation light and power.

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2 PROJECT DESCRIPTION

2.1 Project Location

The solar and energy storage project site is located east of State Route 247 (SR-247), north of Haynes Road, and west of Meridian Road, approximately 8 miles north of Lucerne Valley, in unincorporated San Bernardino County. The generator tie (gen-tie) line would extend southwest from the project site for approximately 0.6 mile to the SCE Calcite Substation, which is proposed on an approximately 75-acre parcel of land that extends on the west and east sides of SR-247 and directly north of Haynes Road. The solar and energy storage site is roughly in the southern portion of Section 36, Township 6 North, Range 1 West; the northern portion of Section 1, Township 5 North, Range 1 West; and the southern portion of Section 2, Township 5 North, Range 1 West, within the California U.S. Geological Survey 7.5-minute topographic quadrangle. The site is at approximately 34°33'36.74"N/116°56'0.97"W. The site includes six adjacent parcels and is irregularly shaped, but generally it is bounded on the east by Meridian Road and on the west by Fern Road. Desert Lane bisects the project site between the northern three parcels and the southern three parcels. Unnamed private roads or property lines border the project site on the north and south (see Figure 1, Regional Map, and Figure 2, Vicinity Map). In addition to Haynes Road (located within the 75-acre Calcite Substation parcel), an existing, unnamed north-south dirt road traverses the eastern portion of the 13-acre substation pad site. The proposed Calcite Substation site is at approximately 34°32'50.70"N/116°57'7.29"W.

2.2 Proposed Project

Solar Facility System

The proposed solar and energy storage project includes a 60 megawatt-peak alternating current (MWac) solar power generating installation. The 484-acre project site would house all structures, including solar panels, tracking/support structures, inverters, SCADA, energy storage structure, and interconnection facilities (on-site substation), all of which would be enclosed by a perimeter security fence approximately 7 feet high.

Solar energy would be captured by an array of approximately 250,000 PV panels mounted to a single-axis tracking system. The high-efficiency, commercially available PV panels convert incoming sunlight to direct current (DC) electrical energy. The panels are arranged in series to effectively increase output voltage to approximately 1,500 volts. These serial chains of panels are called “strings” in industry terms, and provide the basic building block of power conversion in the solar array. The strings are combined in the solar field via an above- or belowground DC collection system and then further ganged together at the inverter stations, where the energy is

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converted to Alternating Current (AC) and then stepped to an intermediate voltage, typically 34.5 kV. The chosen PV panels will be either crystalline silicon or thin film and will be well suited for the desert environment due to their durability and reliability.

The tracking system would be supported, when practical, by driven piers (piles) directly embedded in the ground and the system would be parallel to the ground. The system would rotate slowly throughout the day at a range of $\pm 60^\circ$ facing east to west in order to stay perpendicular to the incoming solar rays so that production can be optimized. Each tracker would hold approximately 80–90 panels (depending on final configuration) and at its highest rotated edge would have a maximum height of approximately 12 feet above grade, depending on the dimensions of the chosen panel. The minimum clearance from the lower edge of the panel to ground level is approximately 18 to 24 inches, pending final design.

The inverter stations would be up to 12 feet in height and perform three critical functions for the solar plant: (1) collect DC power in a central location, (2) convert the DC power into AC power, and (3) convert low-voltage AC power to medium-voltage AC power. The inverter stations are typically open-air and well suited for the desert environments. The stations consist of DC collection equipment, utility-scale inverters, and a low-to-medium-voltage transformer. The output power from the inverter stations is then fed to the AC collection system via an above- or belowground collection system. This AC collection system would deliver the electricity to the on-site substation, where the voltage would be stepped up to the interconnection voltage (see Figure 3a, Site Plan – Ord Mountain Solar and Energy Storage Project).

On-site Substation

The project substation is the termination point of the collection system of 34.5 kV AC electricity. The output of the entire field is passed through a final interconnection step-up transformer to convert it to the grid tie voltage at 220 kV. Additionally, the project substation would host the grid intertie safety equipment and switches required to interconnect to the high-voltage transmission system. The open-air substation would likely be constructed on the southern border of the solar array nearest the proposed SCE Calcite Substation. The footprint of the on-site substation would be approximately 150 by 230 feet. The on-site substation would consist of a foundation and an approximately 55-foot-tall A-frame, approximately 16-foot-tall 230 kV disconnect switch, approximately 16-foot-tall metering units, approximately 16-foot-tall 230 kV circuit breaker, approximately 28-foot-tall step-up transformer, and approximately 15-foot-tall power distribution center (25 by 60 feet). The on-site substation would be fed by two 34.5 kV feeders extending throughout the site that would collect the AC power from the inverters. The feeders would be overhead lines constructed with approximately 45- and 60-foot-tall poles for the single and double circuits, respectively.

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Energy Storage System

Adjacent to the on-site substation, an energy storage system is proposed to provide a maximum capacity of 60 megawatts over a 4-hour period (240 megawatt-hours). The energy storage batteries would be housed in a structure of approximately 35,000 square feet. The structure height (including any screening for heating, ventilation, and air-conditioning (HVAC) components) would be approximately 20 feet. The batteries are housed in open-air-style racking (similar to computer racking) 7–9 feet high. The associated inverters, transformers, and switchgear would be located immediately adjacent to the structure on concrete pads.

The energy storage structure would also have a fire rating in conformance with County standards and would have specialized fire suppression systems installed for the battery areas. All non-battery areas would have County-approved standard sprinkler systems. The structure would also have HVAC cooling in the battery areas to maintain energy efficiency. Power to the HVAC, lighting, and other systems would be provided via a connection to the on-site station service transformer, with connection lines installed above- and/or belowground. The energy storage system would be unmanned, with remote operational control and periodic inspections/maintenance performed as necessary.

Generator Tie Line

The energy is transported from the on-site substation to SCE's proposed Calcite Substation via the gen-tie line. The gen-tie line would extend approximately 0.6 mile to the southwest, from the facility's on-site substation to SCE's proposed Calcite Substation. The 220 kV gen-tie line would consist of approximately seven single-circuit, up to 150-foot-tall concrete or steel poles, spaced on an average of every 500 feet. The poles would carry 336 aluminum conductor steel-reinforced cable (ACSR) conductors, one conductor per phase, and would allow the line to maintain a minimum 30-foot vertical clearance to ground.

The right-of-way is expected to consist of a width of up to 50 feet for the maintenance road and gen-tie line. Less width may be required for portions of the right-of-way where access to the transmission line is facilitated by existing roads, such as those associated with the existing SCE transmission lines.

Ancillary Facilities – Solar Facility System

Access Road

The solar and energy storage project access road would be 24 feet wide and composed of asphalt concrete. This road would connect to Highway 247 (Barstow Road) and would require the

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construction of approximately 1,200 feet of new road. Permanent land disturbance would be approximately 1 acre for the solar and energy storage project access road and gen-tie components on the Calcite Substation property.

Signage

A small project sign at the site main entry would be installed. The sign would be no larger than 8 feet by 4 feet and would read “Ord Mountain Solar Energy Center XXXX Fern Road.” In addition, required safety signs would be installed identifying high voltage within the facility on the fence near the entrance and at the gates either end of Desert Lane. These safety signs would also provide information for emergency services.

Perimeter Fence

The perimeter of the solar energy center site would be enclosed by a 6-foot chain-link fence topped with 1 foot of three-strand barbed wire. Natural-colored privacy/wind slats will be added to the fence where the fence encroaches within 0.25 mile of a primary residence and elsewhere as determined prudent for dust control. The main purpose of the fence is to prevent unauthorized access to the site. The total height, above grade, of the fence would be approximately 7 feet. Tortoise mesh would be attached to the fence fabric and would extend from approximately 12 inches below grade to approximately 24 inches above grade. Access to the project site would be provided through up-to six drive-through gates.

Lighting

Low-elevation (<14 foot) controlled security lighting would be installed at primary access gates, the on-site substation, and entrance to energy storage building. The lighting would only be switched on when personnel enter the area (either motion-sensor or manual activation (switch)). All safety and emergency services signs would be lit when the lights are on. The lighting would be shielded so that the light is directed downwards. Electrical power to supply the access gate and lighting would be obtained from SCE. Lighting would be only in areas where it is required for safety, security, or operations. All lighting would be directed onto the site and would include shielding as necessary to minimize illumination of the night sky or potential impacts to surrounding viewers.

Construction

The proposed solar and energy storage project is anticipated to be built over an approximately 10-month timeframe from the onset of perimeter fence installation through testing and commissioning of the facility. It is anticipated that the work would be completed in 8- to 10-

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hour shifts, with a total of five shifts per week (Monday–Friday). Overtime and weekend work would be used only as necessary to meet scheduled milestones or accelerate schedule and would comply with all applicable California labor laws.

Because the proposed solar and energy storage site is fairly level grading is expected to be minor in most instances. However, grading would occur throughout the site especially for the construction of roads and inverter pads. This would be accomplished with scrapers, motor graders, water trucks, dozers, and compaction equipment. The PV modules would be off-loaded and installed using small cranes, boom trucks, forklifts, rubber tired loaders, rubber tired backhoes, and other small to medium sized construction equipment as needed. Construction equipment would be delivered to the site on “low bed” trucks unless the equipment can be driven to the site (for example the boom trucks). It is estimated that there would be approximately 35 pieces of construction equipment on site each month (see Table 3).

Vegetation on the site would be modified only where necessary. Vegetation would be removed where gravel roads would be constructed, where fill would be placed from grading operations, where buildings are to be constructed, and where transmission pole and tracker foundations would be installed (if necessary). At locations where transmission pole and tracker foundations would be installed, minor cuts may be required where the foundations would be driven. Minor earth work would also occur to install aggregate base access roads and transmission line maintenance roads. The surface of the roads would be at-grade to allow any water to sheet flow across the site as it currently does. Throughout the remainder of the developed area on the solar and energy storage site, the vegetation root mass would generally be left in place to help maintain existing drainage patterns on a micro level, and to assist in erosion control. During construction of the solar and energy storage facility, it is expected that most of the vegetation would be cut, trimmed, or flattened as necessary, but otherwise undisturbed so that reestablishment is possible.

Operation

The proposed solar and energy project component would be unmanned and no operation and maintenance building would be constructed. The operations would be monitored remotely via the Supervisory Control and Data Acquisition (SCADA) system and periodic inspections and maintenance activities would occur. During operations, solar panel washing is expected to occur one to four times per year and general labor (up to 10 individuals) may assist in the panel cleaning. Panel washing for a project of this size would require 15 days to complete per wash cycle. Water consumption is expected to be around 0.28 gallons per square yard of panel based on other similar operations. Given a 60 MW AC plant, with four cycles per year, the annual water usage is expected to consume up to approximately 6 AF of water. While the Applicant only expects to actually wash

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the PV panels once per year, the panels may need to be washed more frequently (up to four times per year) based on site conditions. Conditions that may necessitate increased wash requirements include unusual weather occurrences, forest fires, local air pollutants, and other similar conditions. Therefore, the proposed solar project is requesting the use of up to 6 AF per year for the explicit use of washing panels. This amount is in addition to the amount of water necessary for the operations, fire suppression, and site landscape maintenance, which is a small amount of groundwater (i.e., approximately 0.6 AF) to be used for this purpose. In the event that electrical power distribution cannot be delivered to the groundwater pump, a generator would be located adjacent to the well pump to provide power. If groundwater prove unsuitable for washing, water trucks would be used to deliver water from a local purveyor.

Decommissioning

The PV system and energy storage system (including structure) would be recycled when the solar and energy storage project's life is over. Most parts of the proposed system are recyclable. Panels typically consist of silicon, glass, and a metal frame. Tracking systems (not counting the motors and control systems) typically consist of aluminum and steel. Batteries include lithium-ion, which degrades but can be recycled and/or repurposed. Site structures would include steel or wood and concrete. All of these materials can be recycled. Concrete from deconstruction is to be recycled. Local recyclers are available. Metal and scrap equipment and parts that do not have free flowing oil may be sent for salvage.

Fuel, hydraulic fluids and oils would be transferred directly to a tanker truck from the respective tanks and vessels. Storage tanks/vessels would be rinsed and transferred to tanker trucks. Other items that are not feasible to remove at the point of generation, such as smaller containers lubricants, paints, thinners, solvents, cleaners, batteries and sealants would be kept in a locked utility building with integral secondary containment that meets Certified Unified Program Agencies (CUPA) and Resource Conservation and Recovery Act (RCRA) requirements for hazardous waste storage until removal for proper disposal and recycling. It is anticipated that all oils and batteries would be recycled at an appropriate facility. Site personnel involved in handling these materials would be trained to properly handle them. Containers used to store hazardous materials would be inspected regularly for any signs of failure or leakage. Additional procedures would be specified in the Hazardous Materials Business Plan (HMBP) closure plan submitted to the CUPA. Transportation of the removed hazardous materials would comply with regulations for transporting hazardous materials, including those set by the Department of Transportation (DOT), EPA, California Department of Toxic Substances Control (DTSC), California Highway Patrol (CHP), and California State Fire Marshal.

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Upon removal of the proposed solar and energy storage project components the site would be left as disturbed dirt generally consistent with the existing (pre-development) conditions, subject to a Closure Plan in accordance with SBCC 84.29.60.

Calcite Substation

The proposed solar and energy storage project is both practically located to be close to SCE's proposed Calcite Substation and the first trigger necessitating that substation. Because it is a necessary infrastructure improvement to allow the proposed solar and energy storage project to connect to the grid, the Calcite Substation is a connected project and together they represent the "proposed project" for environmental evaluation purposes under CEQA. Approvals by the California Public Utilities Commission (CPUC) are necessary for the Calcite Substation and the CPUC is a responsible agency for the purposes of environmental evaluation.

SCE proposes to construct and operate the Calcite Substation project on approximately 13 acres to facilitate the connections of renewable energy generation to the SCE electrical grid. The Calcite Substation project would also include loop-in transmission lines from the existing Lugo-Pisgah No.1 220 kV transmission lines approximately 2,500 feet in length. The Calcite Substation project also includes two new fiber-optic cables to provide telecommunications and 12 kV distribution lines to provide power for lighting at the substation along the same approximately 1-mile route. The Calcite Substation project would also develop access roads to facilitate construction and maintenance for the substation and transmission connections.

Calcite Substation Project Characteristics

The proposed Calcite Substation project consists of the following components:

- Calcite Substation;
- Loop-In Transmission Line;
- Telecommunication Facilities; and
- Ancillary Facilities

Calcite Substation

The proposed Calcite Substation project would be a new regional 220kV collector station initially needed to support the proposed Ord Mountain Solar and Energy Storage Project. The substation is proposed on a rectangular, approximate 13-acre area measuring approximately 620 feet by 480 feet (see Figure 3b, SCE Calcite Substation Project). The Calcite Substation would be an unattended collector station (no power transformation) surrounded by a prefabricated

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concrete wall with a visible loop of razor wire along the top and with two gates. The proposed Calcite Substation project would be designed to accommodate a total of eight 220 kV positions, with four positions initially constructed. Two positions would be used in the initial design: one position shared between the Ord Mountain Solar and Energy Storage Project gen-tie and the Pisgah 220 kV transmission line, and one position for the Lugo 220 kV transmission line. The remaining two positions would be available for future network or generation tie-lines.

Calcite Substation would be initially equipped with the following:

- Two overhead 220 kV buses;
- Five circuit breakers;
- Ten group-operated disconnect switches;
- One Mechanical Electrical Equipment Room (MEER);
- Light and power transformers and associated equipment;
- Station lighting;
- Permanent wall; and
- Microwave tower.

The proposed Calcite Substation design includes terminating the Ord Mountain Solar and Energy Storage's 220 kV gen-tie line into the switchrack. There would be two double-circuit lattice or Tubular Steel Poles (TSPs) dead-end structures with heights ranging from approximately 130 feet to approximately 180 feet on the Calcite Substation property for the connection of Ord Mountain's gen-tie line to a 220 kV position inside Calcite Substation.

Loop-In Transmission Line

The proposed Calcite Substation would connect to the Lugo-Pisgah No. 1 220 kV Transmission Line transmission source line via a loop-in that would modify the Lugo-Pisgah No. 1 220 kV Transmission Line. That modification would create two new line segments: the Calcite-Lugo 220 kV transmission line and the Calcite-Pisgah 220 kV transmission line. Each new transmission line segment entering into the Calcite Substation would be approximately 2,500 feet long.

The proposed routes for these new transmission lines would require crossing under SCE's Eldorado-Lugo and Lugo-Mohave 500 kV lines. Crossing under the 500 kV lines would require the addition of one 500 kV interset tower for each of the Eldorado-Lugo and Lugo-Mohave 500 kV lines to comply with the safe clearance requirements of G0 95.

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The new 220 kV transmission lines would require approximately seven transmission structures, consisting of six single-circuit structures and one double-circuit structure. Four single-circuit structures with heights ranging from approximately 50 feet to approximately 100 feet would be used to cross underneath the Eldorado-Lugo 500 kV and Lugo-Mohave 500 kV transmission lines. The path would then continue north to two single-circuit structures with approximate heights between 110 feet and 160 feet. From there, the alignment turns northeast to one 220 kV double-circuit structure with a height ranging from approximately 130 feet to approximately 180 feet. The 220 kV double-circuit TSP or LST would be located just outside of the substation wall (but still within the proposed Calcite Substation Property boundaries). The conductor used would be 2B-1590 kcmil “Lapwing” Aluminum Conductor Steel Reinforced (ACSR) conductor or similar.

Additionally, one existing 220 kV lattice steel tower in the existing ROW would be removed. The final combination of poles and towers will be determined during detailed engineering.

The seven new structures would require a new ROW ranging between approximately 250 and 400 feet wide (depending on structure types and line crossings) from SCE’s existing ROW to the Calcite Substation Property.

At the point of the proposed 220 kV line undercrossing, the existing Lugo-Mohave and Eldorado-Lugo 500 kV transmission lines would require the addition of one 500 kV interset tower per line to comply with applicable engineering standards and specifications (including GO 95). The preferred approach at this time would be to determine the appropriate crossing structures and position the interset towers within the 500 kV ROW. The current structures are slightly less than 150 feet tall. It should be assumed that the interset tower would be approximately 15-30 feet taller to facilitate the proposed undercrossing.

Loop-In Transmission Line Access and Spur Roads

Existing public roads and existing transmission line roads would be used as much as possible during construction. However, the Calcite Substation Project would require new transmission line roads to access the new 220 kV transmission line segments and structure locations between the Calcite Substation and existing SCE ROW.

The graded road would have a minimum drivable width of between 14 feet and 22 feet with 2 feet of shoulder on each side as required by the existing land terrain, but may be wider depending on final engineering requirements and field conditions. The minimum center line turning radius required along a curve is 50 feet (the minimum turning radius required to meet construction and maintenance vehicle requirements) and berm and swale drainage improvements may be required for erosion control along the road.

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Distribution System for Station Light and Power

An extension of an existing 12 kV distribution circuit would be required to provide the temporary power for construction and permanent station light and power for Calcite Substation. The Calcite Substation project calls for extending the existing 12 kV distribution circuit overhead westward on Haynes Road for approximately 2,000 feet by installing approximately 12 wood poles.

The 12 kV distribution circuit would then extend underground heading west along Haynes Road under the existing California Highway 247 and transmission ROW and then turn north along the Calcite Substation driveway and into Calcite Substation. The total underground circuit extension length would be approximately 1,700 feet, of which 1,400 feet is forecasted to have surface disturbance. These new facilities would also be used for installation of the required telecommunication fiber-optic cables into Calcite Substation (described below Telecommunication Facilities).

Telecommunication Facilities

A telecommunication system would be required to provide monitoring and remote operation capabilities of the electrical equipment at Calcite Substation, transmission line protection, and Remedial Action Scheme (RAS).

The SCE telecommunication facilities expected to be constructed as part of the Calcite Substation Project would include two approximately 1-mile-long fiber-optic cables to the nearest splice points on an optical ground wire (OPGW) that is expected to already be in place on the 500 kV Lugo-Mohave T/L by the time any work associated with the Calcite Substation Project commences.¹

1 That OPGW is expected to be in place as a result of the anticipated completion of SCE's anticipated Eldorado Lugo Mohave (ELM) Series Capacitors project. The ELM Series Capacitors project is a distinct and independent project being separately undertaken by SCE that has independent utility from the Calcite Substation Project. Completion and operation of the ELM Series Capacitors project would include OPGW, which would be tapped to connect to the proposed Calcite Substation. Similarly, SCE also has another distinct and independent project with telecommunications equipment that, if constructed, would obviate the need to construct any other telecommunication facilities to support the Calcite Substation, namely, the Lugo-Victorville 500 kV Transmission Line Special Protection Scheme (SPS) Project. In fact, SCE has already submitted a Standard Form 299 application to the U.S. Bureau of Land Management for authorization to complete the Lugo-Victorville 500 kV Transmission Line SPS Project, which also has independent utility from the Calcite Substation Project. In light of the fact that both the ELM Series Capacitors Project and the Lugo-Victorville 500 kV Transmission Line SPS Project, currently planned by SCE, would be constructed and placed into operation prior to the operation of Calcite Substation, SCE would not need to construct any further telecommunication facilities to support the Calcite Substation (other than the two 1-mile taps described above).

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The first proposed fiber-optic cable would start from Calcite Substation and would be installed along the new 12 kV distribution path previously described. The proposed line would turn north along an un-named dirt road for approximately 1,100 feet attaching to existing wood poles and arriving at the Barstow Repeater Communication Site (CS). The line would drop down in a new riser and continue underground for approximately 150 feet into an existing communication room within the CS.

The second proposed fiber-optic cable would start from Calcite Substation and exit the substation to the south for approximately 400 feet in new underground conduit and then turn east onto Haynes Road for approximately 1,200 feet. The conduit would turn southwest on an existing access road for approximately 4,000 feet and then turn northwest to get to tower M29-T3 on the Lugo-Mohave transmission line where the existing splice box is located. This underground conduit route would be built exclusively for telecommunications use.

Ancillary Facilities – Calcite Substation

Access Road

The Calcite Substation access road would be 24 feet wide and composed of asphalt concrete. This road would connect to Highway 247 (Barstow Road) and would require the improvement of approximately 1,100 feet of the existing Haynes Road and the establishment of approximately 800 feet of new road. Permanent land disturbance would be approximately 2 acres on the Calcite Substation Property.

Perimeter Fence

The Calcite Substation would be an unattended collector station (no power transformation) surrounded by a prefabricated concrete wall with a visible loop of razor wire along the top and with two gates.

Lighting

Low-elevation (<14 foot) controlled security lighting would be installed substation. The lighting is only switched on when personnel enter the area (either motion-sensor or manual activation (switch)). All safety and emergency services signs would be lighted when the lights are on. The lighting would be shielded so that the light is directed downwards. Lighting would be only in areas where it is required for safety, security, or operations. All lighting would be directed on site and would include shielding as necessary to minimize illumination of the night sky or potential impacts to surrounding viewers.

Draft Visual Resources Study Ord Mountain Solar Project

Construction

The Calcite Substation and associated transmission and telecommunications connections are anticipated to be constructed over a period of approximately 10 months.

Substation

The approximate area of land disturbance (cleared and graded) at the Calcite Substation Property, is approximately 18 acres, approximately 13 acres of which would be permanent and the other approximately 5 acres would be temporarily disturbed for construction. The Calcite Substation access road would be 24 feet wide and composed of asphalt concrete. This road would connect to Highway 247 (Barstow Road) and would require the improvement of approximately 1,100 feet of the existing Haynes Road and the establishment of approximately 800 feet of new road. Permanent land disturbance would be approximately 2 acres on the Calcite Substation Property.

The volume and type of earth materials proposed to be used is approximately 26,000 cubic yards (cy) of soil and approximately 3,000 cy of surface material (rock), which would be imported as part of construction. Existing material not suitable for use would be exported and disposed of off-site, is estimated at approximately 3,000 cy.

Loop-In Transmission Structures

The new structure pad locations and laydown/work areas would first be graded and/or cleared of vegetation as required to provide a reasonably level and vegetation-free surface for structure installation. Erection of the structures may also require establishment of a permanent equipment pad of approximately 50 feet by 50 feet located adjacent to each applicable structure within the laydown/work area used for structure assembly. The pad may be cleared of vegetation and/or graded as necessary to provide a level surface for equipment operation. Typical structure foundations for each LST would consist of four poured-in-place concrete footings; TSPs would require a single drilled poured-in-place concrete footing; and TSP H-Frames would require a two drilled poured-in-place concrete footings. Actual footing diameters and depths for each of the structure foundations would depend on the soil conditions and topography at each property and would be determined during final engineering.

Wire stringing activities would be in accordance with SCE common practices and are similar to process methods detailed in the IEEE Standard 524-2003 (Guide to the Installation of Overhead Transmission Line Conductors). Typical wire stringing activities may or may not include the use of a helicopter.

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The total land disturbance associated with the loop-in and the dead ends for the gen-tie that SCE would install is estimated approximately 42.2 acres. The majority of the disturbance would be temporary, approximately 39.3 acres, and approximately 2.9 acres permanently disturbed.

Construction of the transmission lines would require the establishment of an approximately 5-acre staging yard within the Calcite Substation Property. This staging yard would be used as a reporting location for workers, vehicle and equipment parking, and material storage. The yard would also have construction trailers for supervisory and clerical personnel. The staging yard may be lit for staging and security.

Telecommunication Facilities

For the locations that require overhead construction, the permanent ground disturbance for each pole installation would be approximately 4.9 square feet per pole and 0.1 square feet per pole anchor. At some structure locations, vegetation may be removed and/or trimmed to accommodate the installation of overhead and/or underground distribution facilities. For the locations that require the construction of a trench or underground structure, excavation activities would generally be done using a backhoe. The anticipated dimensions for the trench would be approximately 24 inches wide by approximately 51 inches deep resulting in approximately 0.38 acre of disturbance.

Operations

The proposed Calcite Substation would be unstaffed, and electrical equipment within the substation would be remotely monitored and controlled by an automated system from SCE's Lugo Substation Switching Center. Operations and Maintenance (O&M) activities are necessary to ensure reliable service, as well as the safety of the utility worker and the general public, as mandated by the CPUC. SCE facilities are subject to Federal Energy Regulatory Commission jurisdiction. SCE transmission facilities are under operational control of the California Independent System Operator (CAISO). SCE personnel would typically visit for electrical switching and routine maintenance purposes. Routine maintenance would include equipment testing, monitoring and repair.

Following the completion of project construction, operation of the new telecommunication facilities would commence. Inspection and maintenance activities would occur at least once per year. The frequency of inspection and maintenance activities would be on an as-needed basis

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3 EXISTING VISUAL SETTING

3.1 Project Site

The proposed project site is located in an unincorporated area of San Bernardino County and in North Lucerne Valley, approximately 15 miles east of Apple Valley, 20 miles west of Victorville, and 20 miles south of Barstow. Regional access to the site is provided from State Route 247 (SR-247) and SR-18 from the south and Interstate 15 (I-15) and SR-247 from the north. Local access to the solar and energy storage site is provided by a number of small and narrow east-west roads in North Lucerne Valley with access off SR-247 including Fern Road, Haynes Road, Waalew Road/Desert Lane, and Meridian Road. Fern Road and Meridian Road run alongside portions of the project site's western and eastern boundary. Local access to the Calcite Substation site would require construction of a new access driveway off Haynes Road just west of SR-247. Refer to Figure 1, Regional Map, and Figure 2, Vicinity Map.

Overall, the proposed project area landscape is characterized by a broad, flat alluvial plain occasionally dotted with large hills and abutting mountainous terrain to the north, east, west, and south. Scattered rural residences, undeveloped properties, fallow agricultural lands, and regional electrical transmission line infrastructure are located on the alluvial plain and generally do not extend to nearby foothills and ridgelines.

The topography of the approximate 484-acre solar and energy storage site is generally flat but gently slopes from northwest to southeast with elevations ranging between approximately 2,900 and 2,980 feet above mean sea level (amsl). A low hill is located in the southeastern corner of the project site and has been disturbed by the installation of two large steel lattice towers which sit atop the elevated terrain and support two regional 500 kilovolt (500 kV) electrical transmission lines. A regional 220 kV transmission line support by similar steel lattice towers is located immediately south of the low hill and within the project site boundary. The existing transmission lines are part of a regional transmission corridor that generally extends east to west through San Bernardino County. Surface drainage from most of the project site primarily flows north to south, with some variability due to local topography.

The project site has no existing sources of night lighting or glare. No street lights existing along site perimeter roadways including Fern Road, Waalew Road/Desert Lane, and Meridian Road and streetlights are not installed along SR-247. Some nighttime lighting and sources of glare are present in the immediate surrounding area and is associated with existing residential uses and electrical transmission line infrastructure.

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There are no active residences on the project site; however, there is one abandoned residence in the middle of the project site and south of Desert Lane. The abandoned residence consists of a deteriorated wood-and-steel structure, and associated litter. Due to the abandonment of the on-site residence, there is no associated interior or exterior lighting. Short wood post-and-wire fencing lines the northern and northeastern portions of the project site, as well as the northern side of Desert Lane. Unmaintained wood slat fencing runs along portions of the southwestern project boundary, east of Fern Road. As previously discussed, three steel lattice towers are installed in the southeastern corner of the site and overhead electrical transmission lines cross the southern portion of the site. Tall wood poles supporting local electrical distribution lines are installed along project site perimeter roads including Fern Street, Desert Lane, and Meridian Road. The remainder of the site is vacant and contains no existing development.

Biological resources within the proposed solar and energy storage boundaries are generally disturbed due to previous agricultural operations. Vegetation on site is limited to small groupings of saltbush scrub encroaching onto portions of fallow agricultural fields. Much of the habitat on the solar and energy storage site has been degraded by human use, primarily from previous agriculture use and livestock grazing.

Because the larger 75-acre Calcite Substation parcel abuts the Ord Mountain solar and energy storage site, the visual setting of the two sites is similar. The larger 75-acre Calcite Substation parcel is bisected by SR-247 and three large steel lattice towers supporting existing regional transmission lines are located on the eastern portion of the parcel. Topography of the 13-acre Calcite Substation site is relatively flat with elevations ranging from approximately 2,980 to 2,900 feet amsl. The eastern portion of the vacant site is traversed by a narrow, unimproved north-south access road. There are no existing sources of night lighting or glare on the 13-acre site and as previously mentioned, the site is vacant and supports no existing structures. At its closest location, the substation site is situated approximately 650 feet west of SR-247 and the nearest active residence is located approximately 0.35 mile to the northeast. The Calcite Substation site generally supports similar vegetation communities as solar and energy storage site however, the substation site was not previously used for agricultural operations and contains characteristic vegetation (white bursage scrub, shadscale scrub) typically associated with old washes, alluvial fans, bajadas, and rocky hills.

3.2 Surrounding Area

San Bernardino County contains vast undeveloped tracts of land that offer significant scenic vistas. The County consists of three distinct geographic regions: the Mountain Region, the Valley Region, and the Desert Region. The proposed project site and surrounding area are located in the Desert Region of the County. The visual character of the Desert Region is defined

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by its arid landscape, consisting of sparsely vegetated mountain ranges and broad valleys with expansive bajadas (a broad slope of alluvial material at the foot of an escarpment or mountain) and scattered dry lakes. In addition, the Desert Region features extensive open space and expansive vistas (County of San Bernardino 2007a).

The North Lucerne Valley area is dotted with locally prominent hills and flanked by mountainous terrain to the north, east, and south. The solar and energy storage site is located approximately 0.7 mile north of wide and rugged Peterman Hill (approximate elevation 3,208 feet amsl) and White Horse Mountain (approximately 4,418 feet amsl) is located approximately 1.8 miles to the southwest. The Ord Mountains, a cluster of rugged, rocky peaks, are located approximately 2 miles to the north. The mountain ranges surrounding the valley rise approximately 500 to 1,200 feet above the valley floor and the rugged silhouette of ridgelines dominate the landscape. In addition, the relatively distant San Bernardino Mountains frame southerly views of the Lucerne Valley landscape and are located approximately 14 miles south of the proposed project site. The undeveloped natural lands in the immediate project area and the presence of mountainous terrain surrounding the North Lucerne Valley creates a rural ambiance; however, modifications to the landscape associated with power lines, roads, and scattered residences are visible and interrupt the otherwise intact, natural-appearing desert landscape.

Scattered rural residential land uses and vacant, undeveloped properties comprise the majority of the property abutting the proposed solar and energy storage site. Residences in the surrounding area are modest one-story single-family structures located on relatively large lots. Several properties feature multiple structures and horse/cattle corrals. Some of the private property yards are used for the storage of multiple vehicles and trailers. Of the 32 observed existing residential structures within 0.5 miles of the project boundary, 22 were determined to be currently occupied.² Currently occupied residential properties are generally landscaped with minimal vegetation characterized by trees installed around the perimeter of structures however, mature pine trees have been densely planted around the Meridian Road frontage of a residential property adjacent to the project site. In addition to on properties abutting the project site, single-story residences are located northwest of the project site off No End Road and Brucite Street and generally feature minimal landscaping. The properties surrounding the 13-acre Calcite Substation site are generally vacant and undeveloped. Regional transmission lines supported by tall lattice steel poles traverse the eastern portion of the larger 75-acre Calcite Substation parcel, crossing both SR-247 and Haynes Road in a general northeast-southwest alignment that continues towards and over the southeastern extent of the Granite Mountains. Haynes Road demarcates the southern boundary of the 75-acre Calcite Substation parcel

² The structure and property showed signs of inhabitation, versus vacant or abandoned structures.

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boundary and then extends to the northwest towards two relatively large trash piles. Aerial imagery shows a recreational vehicle (RV) and an assortment of stored equipment and indecipherable items within a fenced lot located off Haynes Road approximately 0.30 miles west of the 13-acre substation site.

The area surrounding the proposed project features limited sources of nighttime lighting. No street lights are installed along local roads (i.e., Fern Road, Waalew Road/Desert Lane, Meridian Road, and Haynes Road) or along SR-247. Existing residential uses contribute some level of night lighting however, the nighttime environment is typically dark and characteristic of sparsely developed desert landscapes.

The closest scenic highway to the proposed project is SR-247. From Old Woman Springs Road/Barstow Road in the Town of Yucca Valley north to Barstow, SR-247 is designated as a scenic highway in the Conservation Element of the County of San Bernardino (County of San Bernardino 2007c). The segment of SR-247 is also designated as an eligible state scenic highway by Caltrans (Caltrans 2016b). At its closest point, SR-247 is located 0.25 mile west of the solar and energy site's southwestern corner however, as currently proposed, the project's gen-tie line would cross the highway to deliver generated power to SCE's proposed Calcite Substation. At its closest point, the 13-acre Calcite Substation site is located 650 feet west of SR-247. Existing views from SR-247 to the solar and energy site are generally unencumbered by existing development or landscaping however; existing topography occasionally obscures portions of the site from the view of motorists. Existing views from SR-247 to the Calcite Substation site are generally clear and unobstructed by terrain, vegetation and/or existing structures.

Several local roads surround the solar and energy storage site and abut the Calcite Substation site. These roads provide access to proposed project sites and the surrounding area. Local roads in close proximity to the solar and energy storage include Fern Road to the west, Haynes Road to the south, Meridian Road to the east, and an unnamed dirt road to the north. Desert Lane runs east/west, and bisects the northern and southern portions of the solar and energy storage site for approximately 1 mile. These local roadways are mainly used by people accessing active residences in the immediate area and provide opportunities for immediate and relatively unobstructed foreground-middleground views to the project site and foreground-middleground to background distance zones views to mountainous terrain in the surrounding area. Haynes Road runs east-west along the southern boundary of the larger 75-acre Calcite Substation parcel and an unnamed north-south dirt access road traverses the eastern portion of the approximate 13-acre substation site. West of SR-247, Haynes Road is an unimproved dirt road and is spanned by regional transmission lines. Beyond the transmission line crossing (approximately 300 feet west of SR-247), the anticipated low volume of westbound Haynes Road motorists are afforded unobstructed foreground-middleground views to the rugged, rocky terrain of White Horse Mountain.

Draft Visual Resources Study Ord Mountain Solar Project

There are no known parks or recreational facilities in the surrounding area. Local mountains may receive use from area recreationists however, the lack of formal staging areas and/or signs identifying designated trails or recreation areas suggests recreational use including off-highway vehicle (OHV) use in the surrounding area may be unauthorized.

Figure 4, Photo Location Map, depicts the project site boundary against an aerial base and shows the location from which photographs of the proposed project and surrounding area were taken. Figures 4a through 4c depict on-site visual elements and Figures 4d through 4g depict off-site visual elements.

On-Site Visual Elements

Figure 4a, Photograph A looks southeast from Desert Lane across the project site. As shown in the photograph, the project site is dotted with mounded, saltbush scrub shrub vegetation and a low wood post and wire fence is visible above the shrubs. In addition to thin wood poles supporting a distribution line, several tall steel lattice towers are visible against the distant mountainous terrain. Peterman Hill rises from the valley floor and is located approximately one mile to the southeast.

Figure 4a, Photograph B looks southwest from Desert Lane and is located near Photograph A. In Photograph B, the density of scrub shrub vegetation is less than in Photograph A and two tall steel lattice towers foreground-middleground distance rise above the ridgeline of mountainous terrain in the background distance.

Figure 4b, Photograph C looks west from the low hill located in the southeastern corner of the project site to White Horse Mountain. In addition to low-mounded shrubs, two dirt access roads are located on the project site. Three large and geometric steel lattice towers are located approximately 0.2 mile to the west but are difficult to detect due to the presence of tan colored mountainous terrain in the foreground-middleground distance zone. The mountainous terrain effectively occupies the open space between lattice components and as a result, views to the terrain are minimally interrupted. An existing single-story rural residence is located to the west but tends to blend into the landscape.

Figure 4b, Photograph D looks east from Fern Street across the project site towards existing rural residences and hills in the foreground-middleground distance zone. A weathered and dilapidated wood rail fence marks the western boundary of the project site. Low golden grasses and mounded shrubs cover the project site. Metal post and wire fencing is also commonplace in the landscape as are scattered clusters of trees that tend to mark the location of rural residential

Draft Visual Resources Study Ord Mountain Solar Project

development in the area. Several tall steel lattice structures traverse the terrain and rise above the distant eastern horizon.

Figure 4c, Photographs E and F provide similar views of the previously farmed and currently fallow project site. In both photographs, the flat form of the terrain is evident and the density of vegetation is low.

Off-Site Visual Elements

Figure 4d, Photograph A looks southeast from No End Road/SR-247 across northern Lucerne Valley. Off-site visual elements (mounded shrubs, flat terrain) are similar to on-site elements yet the wider perspective offered at No End Road/SR-247 provides views to locally prominent hills and the hazy silhouettes of distant mountainous terrain. Thin dark lines displayed by distribution and transmission support structures are noticeable but are not visually prominent.

Figure 4d, Photograph B looks north from North Side Road toward the project site which is obscured by several trees located adjacent to SR-247. Evidence of illegal dumping is visible and the wood distribution line support rises above the seeming low and distant ridgeline. A portion of Peterman Hill located 0.5 mile to the north screens views to the project site.

Figure 4e, Photographs C and D provide representative views of the valley landscape from local roads in the surrounding area. The valley terrain is generally flat and covered with low mounded shrubs. Tall and spreading trees are typically located near rural residential development and act as visual screens from roadways. Electrical distribution and transmission infrastructure traverses the landscape and when viewed in close proximity, wood poles and steel lattice towers are skylined.

Figure 4f, Photograph E looks north from the Desert Lane/Meridian Road intersection. The rough textured surface of Desert Lane is evident and screening trees have been installed on rural residential properties. The scale of residential development in the surrounding area is illustrated in Photograph E, as is the storage of vehicles and equipment on residential properties.

Figure 4f, Photograph F, looks to the south from the southern project boundary toward a seemingly abandoned residence. Most of the one-story structure's windows have been boarded up with plywood and there is evidence of vandalism (i.e., broken glass window) along the north-facing elevation. In addition to the residence, two additional small structures are located on the property and appear unkempt.

Figure 4g, Photograph G, looks to the northeast from Fern Road (just north of SR-247) toward the existing high voltage transmission line corridor and steel lattice structures. Due to bulk and scale, existing steel lattice towers are visually prominent through the valley landscape and

Draft Visual Resources Study Ord Mountain Solar Project

visibility to these features is increased when skylined. Further, depending on the time of day, the concave line of transmission lines may appear to be shining due to the reflection of incoming sunlight. Comparatively low residential structures and dark green residential landscaping are also visible but do not attract attention in the view. The mountainous terrain displays rugged forms and lines and tones of brown and grey and, along with steel lattice towers, tend to co-dominate the view.

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4 EXISTING VISUAL RESOURCES AND VIEWER RESPONSE

4.1 Visual Character

The desert landscape of the proposed project site and immediate surrounding area is characterized by a broad, flat alluvial plain covered with exposed, tan soils that are intermixed with short golden grasses and dotted with low, mounded, coarse-textured desert shrubs. While the solar and energy storage site and the Calcite Substation site are generally flat, several mounded and craggy hills, including Peterman Hill and unnamed hills east of the solar and energy storage site, rise from the valley floor and add variety to the landscape setting. West of SR-247 and west of the Calcite Substation site, the generally flat terrain gradually rises and then abruptly climbs and transitions to the east-facing slopes of rugged, rocky White Horse Mountain. This transition of terrain from broad alluvial plain to rugged mountains is repeated to the northwest of the proposed project sites (i.e., Sidewinder Mountain) and to the north of the solar and energy storage site (i.e., Ord Mountains). The proposed project sites and the alluvial plain are abutted by rugged, mountainous terrain to the north, west, and east and as a result, the landscape is partially enclosed. While distant, the prominent San Bernardino Mountains are visible from the project site and contribute a scenic mountainous backdrop to the desert landscape.

The surrounding area landscape is marked regular regional transmission infrastructure and scattered rural residential development. Large and geometric steel lattice towers supporting a series of high voltage transmission lines rise from the valley floor and are a prominent features in the majority of available views in the area. Several parcels near the solar and energy storage site are lined with either simple, thin metal post-and-wire fencing or unkempt, low wood post-and-rail fencing. Modest, single-story rural residences are scattered throughout the landscape (approximately six are adjacent to the solar and energy storage site) and clusters or stands of trees tend to be planted along properties where residences front local roads. Undeveloped portions of properties are often used by owners as storage space for vehicles, trailers, and/or machinery. A RV is located on a circular shaped and fenced lot located off Haynes Road, approximately 0.30 miles west of the 13-acre substation site. The alluvial plain underlying the project area is crossed by several paved and numerous straight dirt roads that branch from the main thoroughfare in the area, SR-247, which serves as a connector between the rural desert community of Lucerne Valley to the south and the city of Barstow to north. Tall, wood posts featuring thin wood cross-arms supporting electrical distribution line tend to be aligned along local roads and make individual overhead connections to local area residences. Three large regional powerlines supported by tall, geometric steel lattice towers run east–west through the project area, and steel lattice towers are located in the southern portion of the solar and energy storage site and on the eastern portion (i.e., east of SR-247) of the 75-acre Calcite Substation parcel. Due to the general

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east-west alignment of transmission lines and the vertical scale of towers, multiple skylined steel lattice towers are visible throughout the landscape and viewers are able to visually “follow” the alignments over an approximate three-mile segment of the utility corridor.

4.2 Visual Quality

The flat, broad valley and rugged, prominent mountainous terrain in the project area combine to form a contrasting and moderately striking visual pattern. While the consistent drab green color of vegetation is often interrupted by dry, gray-and-brown, dead, woody vegetation, the texture and color of vegetation is generally consistent and is not overly striking. The project area landscape is sparsely developed with modest rural residences; however, several properties near the solar and energy storage site are used as storage for vehicles and machinery and the density of features (and jumbled appearance) tends to contrast with the open, uninhabited nature of the vast desert landscape. Distribution poles and line are relatively orderly and are aligned along other linear landscape features (roads); however, the scale of three regional power line steel lattice towers on both the solar and energy storage site and the 75-acre Calcite Substation parcel make these features visible throughout the landscape and reduce the overall vividness of the project area setting. Vividness of the landscape is rated as moderately low.

In addition to undeveloped lands and mountainous terrain, the rural desert landscape includes high voltage electrical transmission lines supported by large steel lattice towers traversing the terrain from east to west, stored vehicles and machinery on rural residential properties, and clusters of white exterior colored structures located west of SR-247 and along Brucite Street. Regularly spaced geometric steel lattice structures tower over the valley floor, which is generally flat and supports low-mounded shrubs. Residential properties cluttered with vehicles, machinery, and inoperable equipment jumble the otherwise vast, open desert setting. As such, intactness of the existing landscape is rated as moderately low.

Steel lattice structures traverse the southern end of the flat desert landscape in the project area. While contrasting in form, line, and color with the surrounding vegetation and terrain, towers tend to recede into the background landscape somewhat with increased distance from receptors. For example, when SR-247 motorists enter the valley landscape from the north, towers are visible, but the apparent scale of the features is reduced due to the presence of prominent mountainous terrain in the foreground-middleground and background viewing distance. The visual prominence of the towers increases with proximity (the line and color of the towers increasingly contrast with background terrain), yet the three power lines are located parallel to one another within an established corridor. Visual unity of the landscape is rated as moderately low.

Draft Visual Resources Study Ord Mountain Solar Project

4.3 Viewer Response

As discussed in further detail under “Viewer Groups,” approximately 22 rural residences are located within a 0.5-mile radius of the solar and energy storage site. One of the 22 residences is also located within a 0.5-mile radius of the 13-acre Calcite Substation site. Given the existing primarily undeveloped nature of the project area and the presence of flat, low-shrub-dotted terrain that affords residents open and unencumbered views to surrounding mountainous terrain, residents will be highly aware of and sensitive to changes occurring in the visual landscape. However, resident’s sensitivity may be somewhat tempered by the presence of a highly visible transmission corridor (and numerous tall and geometric steel lattice structures) and properties cluttered with vehicles and trailers. The permanent, long-term nature of residents’ views and their assumed perception of an primarily undeveloped, rugged desert landscape are factors that would make residents highly sensitive to changes to the project area landscape.

Due to the remote location of the project area and its distance from large transportation corridors, SR-247 motorists driving through the project area landscape likely have expectations of an open and undeveloped desert landscape. Regular motorists on SR-247 are assumed to be familiar with the landscape, and because of that familiarity, they may be sensitive to changes to the landscape that run counter to their expectations. Despite their brief experience of the area while driving through it, occasional SR-247 motorists also may be moderately sensitive to landscape alterations and renewable energy development due to the remote location of the area and the character of the landscape, consisting of undeveloped, flat terrain dotted with low-mounded vegetation.

Viewer Groups

Residents and motorists are the two viewer groups who would be afforded views to and of the proposed project. These viewer groups are discussed in more detail in the following subsections.

Residents

Approximately 22 currently occupied residences are located within a 0.5-mile radius of the solar and energy storage site (one residence is also located within 0.5-mile of the 13-acre Calcite Substation site) and are afforded both immediate and partial views of the site, depending on orientation, presence of intervening elements, and proximity. For example, clumped residential trees and residences immediately adjacent to the solar and energy storage site tend to obstruct direct views of the site for more distant residences in the area. Further, several residences around the perimeter of the site have installed landscape trees that partially screen Meridian Road and portions of the solar and energy storage site from view (see Figure 5, Residences). The status (i.e., occupied or vacant) of residences within a 0.5-mile radius of the solar and energy storage site was

Draft Visual Resources Study Ord Mountain Solar Project

determined based on a field investigation conducted by Dudek environmental planner Vanessa Currie on June 15, 2016. During the field investigation, additional scattered residences were observed outside the 0.5-mile radius, and receptors at these locations experience varying levels of visibility to the solar and energy site due to intervening topography and vegetation. Although views from private residences are not analyzed under CEQA, local residents experience long-term exposure views of the solar and energy storage site and the Calcite Substation site from public viewpoints in close proximity to their homes during the transition from private driveways to public streets. Therefore, the views of residents are considered in the analysis. In addition, residents make up the majority of motorists traveling on project area roads, including Fern Road, Desert Lane, Meridian Road, Haynes Road, and Waalew Road, because these roads provide local access to residences as opposed to regional access (i.e., SR-247/Barstow Road). Lastly, given their long-term view exposure and familiarity with the features in the surrounding area, residents are assumed highly sensitive to changes occurring in the landscape.

Motorists (Mobile Groups)

The public roadways in the immediate surrounding area, including Fern Road, Meridian Road, Desert Lane, and Haynes Road provide motorists with direct, unobstructed to partially obstructed views of the solar and energy storage site and the Calcite Substation site. The location of these roadways is depicted on Figure 5. Fern Road, which provides private access to the surrounding residences, is approximately 2.5 miles in length, and a 0.5-mile segment of the road is directly adjacent to the eastern boundary of the solar and energy storage site. Fern Road is considered a private road because it does not receive any public funds for maintenance from the County and is not a dedicated road. The solar and energy storage site is visible along the majority of the 2.5-mile-long roadway. Meridian Road is a County-maintained residential road serving scattered residences located east of SR-247 and near the solar and energy storage site. The site is visible along the majority of the approximately 1.8-mile-long Meridian Road and a 0.60-mile-long segment of the road is located immediately adjacent to the eastern boundary of the proposed solar facility. However, scattered roadside shrubs along the roadway and clumped mature trees in roadside-adjacent residential yards shield portions of the solar facility site from the view of Meridian Road motorists. Desert Lane is a dirt road that runs east from SR-247 to Meridian Road and bisects the solar and energy storage site for approximately 1 mile. Lastly, Haynes Road demarcates the southern boundary of the 75-acre Calcite Substation parcel and west of SR-247 it is considered an unimproved private road as it has seemingly not been dedicated and does not appear receive public maintenance funds from the County. Further, Haynes Road does not appear to provide access to active land uses including residences or recreational areas and as such, motorist viewer volume is anticipated to be low.

Draft Visual Resources Study Ord Mountain Solar Project

Roadways in the project area are organized in a loose, grid-like pattern. In addition to the partially paved roadways described above, local residences are accessible via a network of unimproved dirt roads. Due to a lack of regional connectivity, motorists on local roads in the project area are assumed to be generally composed of the same individuals considered in the residential group described under “Residents.” As such, local road motorists are considered highly sensitive to changes occurring in the landscape.

In addition to local roadways, SR-247 runs through the project area and bisects the 75-acre Calcite Substation parcel. The western boundary of solar and energy storage site is located approximately 0.25 mile east of SR-247 and at its closest location, the 13-acre Calcite Substation site is situated 650 feet west of the state route. SR-247 is a two-lane undivided conventional highway that begins at its junction with SR-62 in the Town of Yucca Valley, serving as a connector between SR-62 and Interstate 15 in the City of Barstow. SR-247 has a federal functional classification of Minor Arterial, and its primary purpose is inter-regional travel (Caltrans 2016a). Through the proposed project area, SR-247 averages an annual average daily traffic (AADT) count of approximately 1,800 vehicles³ (Caltrans n.d.). While views to the Calcite Substation site from SR-247 are generally open and unencumbered, the solar and energy site is intermittently visible along an approximately 4.5-mile-long segment of SR-247 between Peterman Hill and the Lucerne Valley Cutoff. Views along this segment consist of the low mounded shrubs across the valley floors, rugged and dark colored hills and mountains terrain (more distant mountains display a hazy, grey tone), and steel lattice structures within the regional transmission corridor (the prominence of these features increases with proximity). As SR-247 carries both local and regional traffic, state route motorists are considered moderately sensitive to changes occurring in the landscape.

³ Approximate AADT was calculated by averaging the 2014 Back and Ahead AADT measured at Rabbit Spring Road (approximately 5.75 miles south of the solar and energy storage site) and the Lucerne Valley Cutoff (approximately 3.6 miles northwest of the solar and energy storage site). These are the two closest measured locations to the project site. More recent system-wide AADT traffic volume data are not available from the California Department of Transportation (Caltrans).

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Ord Mountain Solar Project

5 REGULATORY SETTING

5.1 Federal Regulations

There are no federal visual resources regulations applicable to the proposed project.

5.2 State Regulations

Caltrans Scenic Highway Program

In 1963, the California Legislature created the Scenic Highway Program to preserve and protect scenic highway corridors from changes that would diminish the aesthetic value of lands adjacent to the highways. The state regulations and guidelines governing the Scenic Highway Program are found in Section 260 et seq. of the Streets and Highways Code. A highway may be designated as scenic depending on how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the travelers' enjoyment of the view (Caltrans 2008). A state route must be included on the list of highways eligible for scenic highway designation in Streets and Highways Code Section 263 for it to be nominated for official designation (eligible state routes are those that have been listed in Section 263 by the State Legislature). The application to nominate eligible scenic highways for official designation requires the preparation of a visual assessment and a Scenic Highway Proposal. The proposal must include a letter of intent from the local governing body, topographic and zoning maps, and a narrative description of the scenic elements in the corridor that includes a discussion of any visual intrusions on scenic views (Caltrans 2008). In addition, the local governing body must also develop, adopt, and submit to the California Department of Transportation (Caltrans) for review and approval a corridor protection program composed of protection measures in the form of protective ordinances, zoning, and/or planning policies that apply to the area of land within the scenic corridor (Caltrans 2008).

According to the Section 263.1 of the Streets and Highways Code, the entire length of SR-247 is included in the State Scenic Highway System; however, the County has not yet submitted an application and the necessary studies/report for official state scenic highway designation. As such, and as verified by the Caltrans Scenic Highway Mapping System, SR-247 is an eligible state scenic highway (Caltrans 2016b).

Draft Visual Resources Study Ord Mountain Solar Project

5.3 Local Regulations

County of San Bernardino General Plan

The proposed project is located in San Bernardino County. The County is vast and consists of three distinct geographic regions: the Valley, Mountain, and Desert Regions (San Bernardino County 2007a). The General Plan addresses the distinctions between the three geographic regions while retaining unified goals and policies that would address County-wide issues and opportunities. Most of the policies in the General Plan address the County in its entirety and are referred to as County-wide policies. County-wide policies relevant to the proposed project and related to aesthetics are organized by General Plan elements, and are outlined below. Additionally, specific Desert Region (D) policies are also included.

Land Use Element

- LU 1.2** The design and siting of new development will meet locational and development standards to ensure compatibility of the new development with adjacent land uses and community character.
- LU 1.4** Encourage preservation of the unique aspects of the rural communities and their rural character.
- D/LU 2.1** Provide transitional uses and buffer incompatible uses such as residential and commercial uses and environmentally sensitive areas.
- D/LU 3.1** The County shall develop standards for commercial development within the region to best reflect the character of the region. Standards may include, but not be limited to signage, screening, pedestrian access, parking, and buffering between adjacent land uses.

Conservation Element

- CO 8.3** Assist in efforts to develop alternative energy technologies that have minimum adverse effect on the environment, and explore and promote newer opportunities for the use of alternative energy sources.
- D/CO 1.2** Require future land development practices to be compatible with the existing topography and scenic vistas, and protect the natural vegetation.

Draft Visual Resources Study Ord Mountain Solar Project

- D/CO 1.3** Require retention of existing native vegetation for new development projects, particularly Joshua trees, Mojave yuccas and creosote rings, and other species protected by the Development Code and other regulations.
- D/CO 1.5** Mechanical removal of vegetation shall be minimized and limited to the building pad, driveway and areas prepared for permitted accessory uses.
- D/CO 3.1** Protect the Night Sky by providing information about and enforcing existing ordinances:
- a. Provide information about the Night Sky ordinance and lighting restrictions with each land use or building permit application.
 - b. Review exterior lighting as part of the design review process.
- 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.

Open Space Element

- OS 5.1** Features meeting the following criteria will be considered for designation as scenic resources:
- a. A roadway, vista point, or area that provides a vista of undisturbed natural areas.
 - b. Includes a unique or unusual feature that comprises an important or dominant portion of the viewshed (the area within the field of view of the observer).
 - c. Offers a distant vista that provides relief from less attractive views of nearby features (such as views of mountain backdrops from urban areas).
- 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.
- 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

Draft Visual Resources Study Ord Mountain Solar Project

to the County. Therefore, the County designates the following routes as scenic highways and applies all applicable policies to development on these routes:

- o. State Route 247 (Old Woman Springs Road/Barstow Road) from the Town of Yucca Valley north to Barstow.

San Bernardino County Development Code

The Development Code (County of San Bernardino 2007b) implements the policies of the County General Plan by classifying and regulating the uses of land and structures within the County. The purpose of the Development Code is to promote and protect the public health, safety, and general welfare of County residents. The Development Code also establishes specific development standards for each district and the procedures to follow in order to approve a particular use.

San Bernardino County Code 82.19.040, Development Criteria within Scenic Areas

Section 82.19.040 establishes criteria to evaluate land use proposals with scenic areas. The solar and energy storage site and the Calcite Substation site are not identified as a major open space area afforded an associated buffer zone on the County of San Bernardino's Open Space Overlay Map (County of San Bernardino 2007c). The proposed solar and energy storage project gen-tie alignment would however, traverse SR-247, a County designated Scenic Highway and a state designated eligible scenic highway. According to Section 82.19.040(a)(2) the development criteria listed in the section is applicable to "an area extending 200 feet on both sides of the ultimate road right-of-way State and County designated Scenic Highways as identified in the General Plan. The area covered may vary to reflect the changing topography and vegetation along the right-of-way.

The following development criteria established in Section 82.19.040 of the San Bernardino County Code are applicable to the proposed gen-tie transmission line alignment over and adjacent to SR-247:

- (c) *Building and Structure Placement.* Structure placement and style shall be compatible with and shall not detract from the visual setting or obstruct significant views.
- (h) *Above Ground Utilities.* Utilities shall be constructed and routed underground except in those situations where natural features prevent the underground siting or where safety considerations necessitate above ground construction and routing. Above ground utilities shall be constructed and routed to minimize detrimental effects on the visual setting of the designated area. Where it is practical, above ground utilities shall be screened from

Draft Visual Resources Study Ord Mountain Solar Project

view from either the Scenic Highway or the adjacent scenic or recreational resource by existing topography, or by placement of structures.

- (i) *Grading*. The alteration of the natural topography of the site shall be minimized and shall avoid detrimental effects to the visual setting of the designated area and the existing natural drainage system. Alterations of the natural topography shall be screened from view from either the Scenic Highway or the adjacent scenic or recreational resource by landscaping and plantings which harmonize with the natural landscape of the designated area, and which are capable of surviving with a minimum of maintenance and supplemental water.

San Bernardino County Code 83.07.040, Glare and Outdoor Lighting

Section 83.07.040 of the Development Code provides standards for outdoor lighting in the County's Mountain and Desert Regions (the proposed project is located within the Desert Region). This section of the Development Code requires new permitted lighting for construction and operational lighting to be fully shielded to preclude light pollution or light trespass on adjacent property, other property within line of sight (direct or reflected) of the light source, or members of the public who may be traveling on adjacent roadways or rights-of-way. Emergency lighting operated by a public utility or agency during the course of repairing or replacing damaged facilities is exempt from the requirements of the Development Code. Additionally, fixtures producing light directly by the combustion of fossil fuels, such as kerosene lanterns or gas lamps, are also exempt.

San Bernardino County Code 84.29.035, Required Findings for Approval of a Commercial Solar Energy Facility

- A. In order to approve a commercial solar energy generation facility, the Planning Commission shall, in addition to making the findings required under Section 85.06.040(a) of the San Bernardino County Development Code, determine that the location of the proposed commercial solar energy facility is appropriate in relation to the desirability and future development of communities, neighborhoods, and rural residential uses, and will not lead to loss of the scenic desert qualities that are key to maintaining a vibrant desert tourist economy by making each of the findings of fact in subdivision (C).
- B. In making these findings of fact, the Planning Commission shall consider:
 - 1. the characteristics of the commercial solar energy facility development site and its physical and environmental setting, as well as the physical layout and design of the proposed development in relation to nearby communities, neighborhoods, and rural residential uses; and

Draft Visual Resources Study Ord Mountain Solar Project

2. the location of other commercial solar energy generation facilities that have been constructed, approved, or applied for in the vicinity, whether within a city of unincorporated territory, or on state or federal land.

C. The finding of fact shall include the following:

1. The proposed commercial solar energy generation facility is either:
 - a. sufficiently separated from existing communities and existing/developing rural residential areas so as to avoid adverse effects, or
 - b. of a sufficiently small size, provided with adequate setbacks, designed to be lower profile than otherwise permitted, and sufficiently screened from public view so as to not adversely affect the desirability and future development of communities, neighborhoods, and rural residential use.
2. Proposed fencing, walls, landscaping, and other perimeter features of the proposed commercial solar energy generation facility will minimize the visual impact of the project so as to blend with and be subordinate to the environment and character of the area where the facility is to be located.
3. The siting and design of the proposed commercial solar energy generation facility will be either:
 - a. unobtrusive and not detract from the natural features, open space and visual qualities of the area as viewed from communities, rural residential uses, and major roadways and highways, or
 - b. located in such proximity to already disturbed lands, such as electrical substations, surface mining operations, landfills, wastewater treatment facilities, etc. that it will not further detract from the natural features, open space and visual qualities of the area as viewed from communities, rural residential uses, and major roadways and highways.
4. The siting and design of project site access and maintenance roads have been incorporated in the visual analysis for the project and shall minimize visibility from public view points while providing needed access to the development site.
19. The proposed commercial solar energy generation facility will avoid modification of scenic natural formations.
22. For sites where the boundary of a new commercial solar energy generation facility will be located within one-quarter mile of a primary residential structure, an adequate wind barrier will be provided to reduce potentially blowing dust in the

Draft Visual Resources Study Ord Mountain Solar Project

direction of the residence during construction and ongoing operation of the commercial solar energy generation facility.

San Bernardino County Code 84.29.040, Solar Energy Development Standards

- b. **Glare.** Solar energy facilities shall be designed to preclude daytime glare on any abutting residential land use zoning district, residential parcel, or public right-of-way.
- c. **Night Lighting.** Outdoor lighting within a commercial solar energy generation facility shall comply with the provisions of Chapter 83.07 of the Development Code.

San Bernardino County Code 85.06.040, Findings Required

- A. General findings for all Use Permits (Conditional and Minor). The review authority shall first find and justify that all of the following are true before approving a Conditional Use Permit or Minor Use Permit application.
 - 1. The site for the proposed use is adequate in terms of shape and size to accommodate the proposed use and all landscaping, loading areas, open spaces, parking areas, setbacks, walls and fences, yards, and other required features pertaining to the application.
 - 2. The site for the proposed use has adequate access, which means that the site design incorporates appropriate street and highway characteristics to serve the proposed use.
 - 3. The proposed use will not have a substantial adverse effect on abutting property or the allowed use of the abutting property, which means that the use will not generate excessive noise, traffic, vibration, or other disturbance. In addition, the use will not substantially interfere with the present or future ability to use solar energy systems.
 - 4. The proposed use and manner of development are consistent with the goals, maps, policies, and standards of the General Plan and any applicable community or specific plan.
 - 5. There is supporting infrastructure, existing or available, consistent with the intensity of development, to accommodate the proposed development without significantly lowering service levels.
 - 6. The lawful conditions stated in the approval are deemed reasonable and necessary to protect the public health, safety, and general welfare.
 - 7. The design of the site has considered the potential for the use of solar energy systems and passive or natural heating and cooling opportunities.

Draft Visual Resources Study Ord Mountain Solar Project

San Bernardino County Ordinance No. 3900

Due to the night sky conditions valued by desert and mountain residents, the County adopted Ordinance No. 3900, also known as the Night Sky Ordinance. This ordinance outlines specific standards relating to glare and outdoor lighting, and these standards are included within the sections of the Development Code described previously.

Draft Visual Resources Study

Ord Mountain Solar Project

6 VISUAL IMPACT ASSESSMENT

6.1 Methodology

6.1.1 Project Viewshed

A topographic viewshed of the project was created by Dudek to illustrate the potential extent of available views to project components from the surrounding area. The topographic viewshed is presented as Figure 6, Topographic Viewshed and does not consider the potential screening effect of vegetation and/or structures. Using a topographic basemap and referencing the proposed height of gen-tie line support structures, the viewshed depicts the approximate extent of available views to project components within a selected twelve-mile radius of the project site. The viewshed map illustrates the possible extent of available views; it does not illustrate clarity of views or other visual conditions.

6.1.2 Site Observations

Dudek environmental planner Vanessa Currie conducted fieldwork at the site and in the surrounding area on June 15, 2016. The local temperature was approximately 90°F and winds were generally mild, but occasional strong gusts were experienced. Visibility conditions were clear. Digital photographs were taken during fieldwork with a location-services-enabled iPhone 6s to photodocument the existing characteristics of the project site and surrounding area. Digital photographs were also taken for the purpose of creating visual simulations that depict the anticipated visual change and characteristics associated with the development of the proposed project. Photographs were taken from several locations along the project boundary and the project vicinity. The exact locations of photographs were recorded with a location-services-enabled iPhone 6s. Photograph locations were plotted on an aerial photo base map as a reference for the visual resources study. Additionally, a mapping and mobile data collection application, Esri's Collector, was used to plot the location of existing structures (residences) within a 0.5-mile radius of the project site and to record the determined status (i.e., active/occupied or abandoned/vacant).

6.1.3 Key Observation Points

Key observation points (KOPs) were selected as representative vantage points in the landscape offering sensitive receptors views to the proposed project site. The locations of identified KOPs are depicted on Figure 4, Photo Location Map. Factors considered in the selection of KOPs included proximity to the solar and energy storage site and Calcite Substation site, angle of observation, number of views, length of time the project is in view, and relative project size. According to the project viewshed, the availability of views from locations outside of the

Draft Visual Resources Study Ord Mountain Solar Project

immediate area to the north, east, and west are limited due to the presence of mountainous terrain. Higher elevation terrain effectively reduces the viewshed of the Project to the north, east and, west. However, the availability of views to the tallest project components (i.e., gen-tie structures) extends south from the project site towards Lucerne Valley development situated near SR-18/SR-247 (approximately 7 miles away and further). While higher elevation areas located south of SR-18/SR-247 including residential development off Mesa Road are provided northerly views extending to the project site area, project components and details would be relatively difficult to discern from these locations due to distance. Project components (primarily solar panels) would be experienced as a contrast of color when viewed against the desert landscape and gen-tie structures would not be clearly perceptible. Because the visual details of project components would not be overly clear, distant viewing locations were not selected as KOPs.

Local area residents are the primary receptors in the area and would be afforded unobstructed and direct long-term views to the proposed project. Therefore, the majority of KOPs were located on commonly traveled local roads situated in close proximity to existing active/occupied residences. Due to the proximity of SR-247 to the solar and energy storage site, three KOPs were located on SR-247, approximately 0.35, 0.5 mile and 1.0 mile west, respectively. Three KOPs were also located on SR-247 to assess the anticipated visual change associated with development of the Calcite Substation. Photographs of existing conditions are included to support the discussion of the existing visual setting from the selected KOPs.

6.1.4 Visual Simulations

The 3-D simulations include existing site photographs as background images and true-scale 3-D models for the proposed solar facilities rendered onto the existing photographs. The photos were taken during the initial site survey from KOPs that were determined by Dudek internally following the field investigation.

Visual simulations from KOPs surrounding the solar and energy storage site and Calcite Substation site were created to depict the anticipated visual change and characteristics associated with the development and buildout of the proposed project. Using available topography maps or digital elevation maps, a 3-D surface was created for the existing terrain and then imported into 3-D Studio Max. This 3-D surface was used to camera-match the background photos to the terrain model. 3-D models were created for all proposed facilities that are visible from the selected KOPs. These 3-D models were then merged into the 3-D scene at their finished grade elevations. Lighting was added to the scene to match the time of day the photos were taken and to cast realistic shadows. Each view was rendered to a high-resolution image. The final product depicts a photorealistic before-and-after simulation. Upon completion of the visual simulations, the existing

Draft Visual Resources Study Ord Mountain Solar Project

setting photographs were compared to the proposed project conditions to outline the potential impacts of the proposed project and determine the significance of anticipated visual change.

6.1.5 Visual Analysis

The visual analysis presented below follows the analysis process established by the BLM's Visual Resource Management (VRM) System. As described in BLM Handbook H-8431-1, Visual Resource Contrast Rating, the VRM System analysis stage involves comparing the project features with the basic features (i.e., landform, vegetation, and structures) in the existing landscape using the basic design elements of form, line, color, and texture. More specifically, at each KOP, existing conditions in the landscape are described and assessed, a simulation of the proposed project is provided to illustrate project features and anticipated visual change, and the anticipated degree of contrast (i.e., none, weak, moderate, and strong) is disclosed. Consistent with the BLM VRM System, factors considered in determining degree of contrast include distance, angle of observation, view exposure, relative size or scale, and spatial relationships.

Visual contrast rating forms (BLM Form 8400-4) were completed for KOP and are provided as Appendix A to this report.

6.1.6 Glare Effects

In addition to the general characteristics of PV panel surfaces, the Utility-Scale Solar Energy Facility Visual Impact Characterization and Mitigation Project Report prepared by the Argonne National Laboratory (Argonne National Laboratory 2013) was reviewed. The Argonne National Laboratory report documents the visual characteristics (including generated glare) of various utility-scale solar energy facilities on the basis of field observations.

6.2 Thresholds of Significance

Pursuant to the 2016 CEQA Guidelines (14 CCR 15000 et seq.), the following thresholds were used to determine whether the project would have a significant effect on visual resources:

- a. Would the project have a substantial adverse effect on a scenic vista?
- b. Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?
- c. Would the project substantially degrade the existing visual character or quality of the site and its surroundings?
- d. Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Draft Visual Resources Study Ord Mountain Solar Project

In determining the significance of project effects on visual resources pursuant to CEQA thresholds of significance, the anticipated degree of contrast was considered along with number of sensitive receptors afforded views to the project and the existing visual character and quality of the landscape.

6.3 Impact Assessment

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

Although there are no designated scenic vistas in the proposed project area (the County does not formally designate or identify scenic vistas), County General Plan policies contain criteria for evaluating whether scenic vistas occur in a particular area. More specifically, General Plan Open Space Element, Policy OS 5.1, states that a feature or vista can be considered scenic if it provides a vista of undisturbed natural areas, includes a unique or unusual feature that comprises an important or dominant portion of the viewshed, or offers a distant vista that provides relief from less attractive views of nearby features (such as views of mountain backdrops from urban areas).

The project site and surrounding area are not considered an undisturbed natural area. The solar and energy storage site has been previously farmed and has been fallow for over a decade. In addition, the solar and energy storage site and the Calcite Substation site are generally flat and contain no significant geologic features or vegetation that is particularly unique for the area, or vegetation that would be considered scenic. The sparse, existing development in the area includes scattered rural residences (some of which are located on properties littered with inoperable vehicles and trailers), abandoned/inactive residential structures, electrical distribution lines supported by wood poles; and high-voltage transmission power lines supported by LSTs ranging from 75 feet to 150 feet in height. As such, the solar and energy storage site, Calcite Substation site, and the surrounding North Lucerne Valley area are not considered undisturbed natural areas.

While primarily characterized as a broad, flat alluvial plain, the project area landscape is also marked by mountainous terrain to the north, west, and east. Due to the presence of rugged terrain, the landscape is enclosed on three sides, yet the lack of prominent local terrain to the south and southeast affords receptors views to the distant San Bernardino Mountains. Although the Ord Mountain solar and energy storage project would alter the existing character of the sites and these changes would be most noticeable to receptors within a foreground-middleground viewing distance (see discussion under Threshold C, below), the introduction of project components would not substantially obstruct or interrupt views of surrounding mountainous terrain. The majority of the proposed solar facility equipment would maintain a relatively low

Draft Visual Resources Study Ord Mountain Solar Project

vertical profile and would display a height of approximately 12 feet. Therefore, from most viewing locations in the surrounding area, solar panels would not block mountainous terrain from view. Panels may obstruct distant mountainous terrain in southeasterly views available at one residence located immediately adjacent to the western project boundary (see KOP 3 discussion under Threshold C, below); however, mountainous terrain and rugged ridgelines would remain visible in views to the south, west, and north. Equipment within the on-site substation would range from 16 to 55 feet in height; however, these components would be close to existing tall vertical features (i.e., LSTs) and there are no receptors (either residents or motorists) in the immediate vicinity of the on-site substation. SR-247 is located approximately 0.3 mile west of the on-site substation; however, due to distance and because tall equipment within the substation facility would not form a continuous wall that would block mountains from view, the introduction of substation equipment would not substantially obstruct or interrupt views of mountainous terrain available in easterly views from SR-247.

As proposed, the gen-tie transmission line would span SR-247 and interconnect to SCE's proposed Calcite Substation. The gen-tie transmission line would generally parallel existing high-voltage transmission lines present in the project area. Under existing conditions, the three high-voltage transmission lines span SR-247 approximately 900 feet northwest of the Fern Road/Haynes Road intersection and then proceed in a southwesterly alignment towards existing large and geometric LSTs. To minimize the potential for visual impacts and adverse effects to existing views, support monopoles for the proposed gen-tie transmission line would be installed near existing steel lattice structures and as such, new structures would be viewed alongside existing structures. However, unlike existing transmission lines that are supported by LSTs, the proposed gen-tie transmission line would be supported by up to seven structures (likely predominately steel or concrete monopoles) that would display a solid form and regular, straight line. As such, monopoles would not replicate the existing form and line of utility infrastructure in the immediate area. Further, monopoles would be more visible than LSTs and would not display the same capability as steel lattice to blend in with the surrounding landscape. Still, the close proximity of existing LSTs would reduce the potential for the introduction of new support structures for the gen-tie line to significantly detract from the existing visual setting or significantly obstruct existing views, whether constructed of LSTs or steel or concrete monopoles. Lastly, the visual effects of grading activities associated with the installation of gen-tie transmission line support structures would be similar to the line and texture contrasts produced by existing electrical infrastructure dirt access roads. Due to the presence of low, mounded shrubs in the landscape, the removal of existing vegetation and resulting patch of cleared, smooth textured soils at the base of new support structures would largely be screened from view of passing motorists.

Draft Visual Resources Study Ord Mountain Solar Project

Similar to the Ord Mountain solar and energy storage facility, vertical features at SCE's Calcite Substation would not substantially obstruct or interrupt views of surrounding mountainous terrain. As illustrated in the visual simulations for KOPs 8 and 9 (see KOP 8 and 9 discussion under Threshold C, below, for additional detail), substation switchracks, A-frame structures, and the MEER building would be visible from SR-247 and other locations in the project area but these components would not block mountainous terrain from view. The majority of equipment and structures within the Calcite Substation fenceline would display a height of between 10 and 80 feet and loop-in transmission line structures (tubular steel pole or lattice steel towers; tubular steel poles were assumed for purposes of this analysis and are reflected in visual simulations) would display a height of between 70 and 130 feet. Equipment and structures within the substation fenceline would generally display thin vertical and horizontal lines that when viewed in the context of the surrounding landscape, would not substantially detract from existing views of mountainous terrain and the flat valley landscape in proximity to the existing three regional transmission lines. Although they would display a thin line and tall form, proposed loop-in transmission line structures would be backscreened by mountainous terrain and would replicate the height displayed by existing LSTs in the landscape. Further, as demonstrated in the visual simulations for KOPs 8 and 9, the area's mountainous terrain and rugged ridgelines would remain visible in westerly views available to SR-247 motorists as they pass through the project area. As such, the introduction of the Calcite Substation would not substantially obstruct or interrupt views of mountainous terrain available in westerly views from SR-247.

Because the majority of solar and energy storage facility and Calcite Substation components would display a vertical profile that would largely maintain existing available views to mountainous terrain in the surrounding area, project impacts to scenic vistas would not be substantial. Where view blockage at a particular vantage point is anticipated, views of the local mountainous terrain would remain available to receptors elsewhere in their field of vision and would be largely unencumbered by project components. The placement of the proposed Ord Mountain gen-tie transmission line (five support monopoles) and the Calcite Substation loop-in transmission line monopoles within an existing transmission corridor and in close proximity to existing high voltage transmission lines and tall steel lattice towers would minimize potential visual effects on existing views available to SR-247 motorists as they pass through the project area. As such, the proposed project would not have a substantial adverse effect on a scenic vista and impacts would be less than significant.

Draft Visual Resources Study Ord Mountain Solar Project

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

At its closest point, the Ord Mountain solar and energy storage facility is located approximately 0.25 mile east of SR-247, an eligible state scenic highway. At the northeastern corner of the 13-acre site, SCE's Calcite Substation is located 650 feet west of SR-247. The closest officially designated state scenic highway is SR-38, located approximately 23 miles south of the Ord Mountain solar and energy storage site in the San Bernardino Mountains.

Due to the proposed project's distance from SR-38 and the presence of intervening forested and mountainous terrain, the proposed project (i.e., the Ord Mountain solar and energy project and the Calcite Substation project) is not visible from the segment of SR-38 that has been officially designated as a state scenic highway. Furthermore, development of the proposed facilities would not entail the removal of trees, rock outcroppings, and/or historic buildings (these features do not occur on the project site) within the viewshed of an officially designated state scenic highway.

The solar and energy storage site has been previously farmed and has been fallow for over a decade. In addition, the site is generally flat and contains no significant geologic features or vegetation that is particularly unique for the area, or vegetation that would be considered scenic. Due to the distance between SR-247 and the project site and the presence of terrain that gradually falls in elevation east of SR-247, the proposed project components would not be visually prominent and would not substantially obstruct motorists' views of the characteristic desert landscape and surrounding mountainous terrain. Vertical elements at the Calcite Substation (e.g., switchracks, A-frames, and the prefabricated concrete perimeter wall) would be visible to passing motorists but because the substation is setback approximately 650 feet from SR-247, these elements would not substantially obstruct motorist's views of the mountainous terrain-punctuated desert landscape. Furthermore and as stated above, development of the proposed project would not damage trees, rock outcroppings, historic buildings, or other scenic resources of the North Lucerne Valley. Refer to the KOP 4, 8, 9, 10, and 11 discussions under Threshold C, below, for additional detail regarding potential visual effects to existing views from SR-247 associated with the proposed solar facility and the proposed Calcite Substation. Also, please refer to Threshold A, above, for a discussion pertaining to potential visual effects to existing views from SR-247 associated with the proposed Ord Mountain gen-tie line transmission line and the proposed SCE Calcite Substation loop-in transmission line.

Draft Visual Resources Study Ord Mountain Solar Project

There are no officially designated state scenic highways near the project site. SR-247 is located in the project area and would be spanned by the proposed gen-tie transmission line northwest of the Fern Road/Hayne Road intersection. As previously discussed under Threshold A above, the proposed Ord Mountain gen-tie transmission line and Calcite Substation loop-in transmission line along an existing transmission corridor and in close proximity to existing high voltage transmission lines supported by tall steel lattice towers. Introducing new support monopoles where large vertical features already occur would minimize potential visual effects on existing views available to SR-247 motorists as they pass through the project area. At its closest point, the solar and energy storage site is located approximately 1,320 feet from SR-247 and the Calcite Substation site is located approximately 650 feet from the state route. The Ord Mountain solar and energy storage site has been previously disturbed and development of the solar and energy storage facility and the Calcite Substation would not damage scenic resources including trees, rock outcroppings, and historic buildings. Furthermore, the majority of proposed project components would display a relatively low vertical profile and when viewed from SR-247, these elements would not result in substantial obstruction or interruption of existing available views to mountainous terrain in the area. Therefore, impacts to existing views from a state scenic highway would be less than significant.

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

The 484-acre Ord Mountain solar and energy storage project site was previously farmed but is now fallow and has been for over a decade. The 13-acre SCE Calcite Substation site is traversed by a north-south unimproved access road and is visually indistinct from other vacant and undeveloped parcels in the project area. Existing development in the area surrounding these proposed facilities includes modest rural residential structures, abandoned/inactive homes, and utility lines. Both the Ord Mountain solar and energy site and the SCE Calcite Substation site are generally flat and contain no significant geological features or vegetation that would be considered of high visual quality. As stated in Section 4.2 of this report, the existing visual quality of the facility sites and surroundings was considered to be moderate to moderately low due to the visual effects associated with fallow agricultural land, scattered rural residential properties cluttered with inoperable vehicles and trailers, abandoned residential structures, and distribution and transmission infrastructure. In views from the proposed facility sites and the surrounding area, steel lattice towers supporting high voltage transmission lines tend to be visually dominant built features in the desert landscape.

For the purposes of this Visual Resources Technical Study, key observation points were selected from which to analyze the potential effects to existing visual character and quality resulting from implementation of the proposed project. The key observation points encompass representative

Draft Visual Resources Study Ord Mountain Solar Project

viewpoints in the existing landscape that were identified as critical to evaluating the overall visual effect of the proposed project. To accurately reflect the various viewer groups that would be potentially afforded views of the proposed project, KOPs consider multiple viewer groups in the proposed project area, with an emphasis on residential areas near the proposed solar and energy storage facility and SR-247. The KOPs consider multiple viewing angles and distances. As described in Section 6.1, Methodology, photographs were taken of existing conditions and visual simulations depicting post-construction conditions were prepared for each of the selected KOPs. The project site boundary and the location of KOPs are depicted on Figure 4. The location, orientation, and existing visual character of the landscape as experienced from each KOP is discussed below.

Key Observation Point 1 – Meridian Road and Waalew Road

Existing View

KOP 1 is located at the corner of Meridian Road and Waalew Road and provides westerly views toward the project site (Figure 7a, Key Observation Point 1). KOP 1 is representative of views to the project site available to motorists and a limited number of residents on properties located immediately adjacent to the project site. The eastern boundary of the project site is approximately 40 feet away and KOP 1 is at an elevation of approximately 2,948 feet amsl.

As depicted on Figure 7a, the unmaintained and rough surface of Meridian Road is visible at ground level at KOP 1. West of the road the exposed sandy soil and low, mounded, pale-green saltbush scrub shrub-dotted terrain rises slightly and creates a berm that quickly falls to display the characteristic flat horizontal form of the valley floor. Low, pale-green shrubs and occasional clusters of larger-scale dark-green spreading shrubs near scattered single-story residences and structures are visible across the valley floor. Several low profile and lightly-colored structures beyond the project site are visible from this KOP, as are faint, dark-brown, and low-profile vertical lines that represent wood poles supporting an electrical distribution line. Tall and geometric LSTs are located to the west but are nearly unnoticeable due to being backscreened by mountainous terrain. The rugged ridgeline and east-facing slopes of White Horse Mountain central to the view and dominate the KOP 1 landscape.

Analysis

A simulated view of the proposed project as viewed from KOP 1 is provided in Figure 7b. As illustrated in the KOP 1 visual simulation, lower profile project components including solar panels, inverters, and access roads would be concealed from view. A system of beige plastic slats would be woven through and attached to the project's perimeter chain link fence with

Draft Visual Resources Study Ord Mountain Solar Project

clinch-lock staples. The slats will be added to the fence where the fence encroaches within 0.25 mile of a primary residence and elsewhere as determined prudent for dust control, from a worst-case visual perspective they are included in the simulations on all portions of the fence. The thin slats would run from the bottom fence rail to the top rail and at KOP 1, the project would be primarily experienced as a beige, rectangular feature that would display a slightly darker tone than the sandy, exposed soils in the landscape. Despite similarities in color, the introduction of a continuous, rectangular feature approximately 40 feet west of KOP 1 would fracture the existing visual pattern of the low, shrub-dotted valley floor extending to rugged mountainous terrain. While implementation of the proposed project would result in reduced landscape intactness as viewed from KOP 1, the slat fence would substantially mask inverters and repeating rows of thousands of solar panels from view. Narrow, indistinct views to project components would be available through gaps in slats (see Figure 7b) and this effect of regular and repeating line in the landscape would be most pronounced when motorists drive alongside the fence and views are continuously revealed. Lastly, while the slat fence would obscure foothills in views from KOP 1, implementation of the proposed project would not substantially block views of White Horse Mountain to the west or other mountainous terrain to the southwest. Still, development of the proposed project would interrupt the visual continuity and transition of the valley floor to the mountainous terrain and therefore, the proposed project would create moderate visual contrast at KOP 1.

Key Observation Point 2 – Meridian Road between Desert Lane and Tampadero Road

Existing View

KOP 2 is on Meridian Road between Desert Lane and Tampadero Road and provides a northwesterly view toward the northern portion of the project site (Figure 8a, Key Observation Point 2). KOP 2 is representative of views to the project site available to motorists on local area roads within a foreground-middleground viewing distance of the project site. The northeastern boundary of the project site is approximately 765 feet away and KOP 2 is at an elevation of approximately 2,925 feet amsl.

Similar to existing views at KOP 1, existing views from KOP 2 consist primarily of a flat valley floor covered with tan, sandy exposed soils and low pale-green saltbush scrub shrubs. In addition, short, light-yellow seasonal grasses are visible across the valley floor and contribute golden hues to the ground plane. From KOP 2, rust-colored metallic posts and thin wire fencing are visible in the immediate foreground-middleground and tall wood poles with thin horizontal cross-arms run alongside Meridian Road to the north. More distant wood poles are visible but are not distinct due to a reduced apparent scale. From KOP 2, the project site displays a primarily low, horizontal form and line featuring scattered mounds of desert shrubs and low golden grasses. The valley floor

Draft Visual Resources Study Ord Mountain Solar Project

extends mountainous terrain, which decreases in visual detail and clarity with distance. With the exception of the distribution line and simple post-and-wire fencing in the foreground, existing development on the valley floor is difficult to detect from KOP 2.

Analysis

A simulated view of the proposed project as viewed from KOP 2 is provided in Figure 8b. As illustrated in Figure 8b, indistinct views of the solar arrays would be available from KOP 2. More specifically, the project would be experienced as a grayish, relatively thin horizontal line across the valley floor. Because the majority of the project site is located at an elevation greater than that at KOP 2, the project's perimeter fence would achieve limited success in screening solar panels from view. While the introduction of the proposed project would create noticeable color contrast, views from KOP 2 would continue to be dominated by the sandy soil and shrub-dotted valley floor and mountainous terrain in the foreground-middleground. Further, under existing conditions, vegetation and terrain to the north near the base of mountainous terrain display a darker color and smoother texture than vegetation and terrain in the immediate foreground-middleground distance of KOP 2. As viewed from KOP 2, the introduction of thousands of seemingly low profile and dark solar panels would produce similar line and color as the distant vegetation and terrain. Due to a seemingly low vertical profile, project components in the KOP 2 visual simulation are unobtrusive and the horizontal form and line of the perimeter fence and panels would be consistent with the flat valley floor. At KOP 2, project components would not be visually prominent and the characteristic visual pattern displayed by the flat valley floor and rugged mountainous terrain would remain visible. As such, the proposed project would create moderate visual contrast at KOP 2.

Key Observation Point 3 – Fern Road and Desert Lane

Existing View

KOP 3 is located at the corner of Fern Road and Desert Lane and provides a southeasterly view toward the southern portion of the project site (Figure 9a, Key Observation Point 3). Similar to KOP 1, KOP 3 is representative of views to the project site available to a limited number of residents on properties located immediately adjacent to the project site. The closest project boundary point is approximately 20 feet away and KOP 3 is at an elevation of approximately 2,931 feet amsl.

As depicted on Figure 9a, the dirt surface of Desert Lane is aligned along the western boundary of the project site and is visible in the immediate foreground-middleground. The roadway appears to extend toward the southern horizon and thin and tall wood poles supporting an

Draft Visual Resources Study Ord Mountain Solar Project

electrical distribution line are visible alongside the roadway. A dilapidated split rail wood fence runs parallel to Desert Lane and marks the project site boundary. In the foreground-middleground, clusters of low, pale-green shrubs and golden-hued grasses cover the project site and the density of shrubs seemingly increases with distance. Bunches of dark- to pale green trees sit low in the foreground-middleground landscape beyond the project site and mark areas of residential development along Meridian Road. A low dark hill on the project site rises above the otherwise flat valley floor and a locally prominent hill approximately 2 miles to the east KOP 3 rises above the low eastern horizon line. In addition to wooden poles supporting distribution lines, tall and geometric LSTs traverse the desert landscape. Several of large steel towers are skylined. The backdrop of the KOP 3 landscape is composed of the low and hazy hills and mountains and an expansive desert sky.

Analysis

A simulated view of the proposed project as viewed from KOP 3 is provided in Figure 9b. As depicted in the KOP 3 visual simulation, the flat and horizontal valley floor would be entirely obstructed from view following implementation of the proposed project. The low, shrub dotted berm adjacent to Desert Lane would remain in place but the long views across the valley floor to the foothills of distant mountains currently available to viewers would no longer be available. Instead, views would be substantially shortened and interrupted by the beige and rectangular slatted perimeter fence lining the project boundary. The fence would screen the majority of project components from view at KOP 3 however; solar panels would periodically create a visible and skylined serrated line that would rise above the fence line. Gaps between slats would also create available composite views of project components along the facility perimeter. The character of line displayed by solar panel edges as depicted in Figure 9b would fluctuate throughout the day, alternating between serrated and horizontal, as panels track the path of the sun. At KOP 3, development of the proposed project would substantially alter the existing open, undeveloped nature of the project site and surrounding area by constructing a facility that would substantially block southeasterly views of the landscape and existing man-made features including distribution and transmission line infrastructure. As a result, the existing vividness and intactness of the landscape would be further reduced and visual contrast would be moderately strong.

Similar to KOP 1, KOP 3 is situated adjacent to the project site at the corner of Fern Road and Desert Lane. KOP 3 also approximates existing and proposed views afforded to an existing active residence located at the northwestern corner of the intersection. Immediate views for the adjacent residents and for motorists on Fern Road and Desert Lane would change from a vast, primarily undeveloped desert landscape to a continuous beige colored “wall” above which the serrated line of panel edges would regularly rise. While views of project components would be

Draft Visual Resources Study Ord Mountain Solar Project

partially screened by the slatted perimeter fence, gaps between slats would create seemingly narrow viewing opportunities into the facility that would evolve to become composite views as motorists drive alongside perimeter roadways. The “wall” and associated views would also be introduced along the northern extent of Desert Lane as the roadway would remain open for public use during project operations. As a result, motorists on the roadway would be afforded views of a generally enclosed landscape that would substantially contrast with the existing open nature of the desert. Development of the proposed project would also interrupt the prevalent visual pattern in the area of the low valley floor extending to the rugged foothills and ridgelines of mountainous terrain.

Key Observation Point 4 – SR-247 and Waalew Road

Existing View

KOP 4 is approximately 70 feet east of the northbound travel lane of SR-247 at Waalew Road. KOP 4 provides an easterly view along dirt-surfaced Waalew Road toward the project site (Figure 10a, Key Observation Point 4). KOP 4 is representative of views to the project site available to motorists on SR-247 within a foreground-middleground viewing distance of the project site. Located approximately 0.5 mile west of the project site, KOP 4 is at an elevation of approximately 2,954 feet amsl.

From KOP 4, the unpaved Waalew Road is the focal point of the view and it extends toward the eastern horizon. The long horizontal line of Waalew Road creates contrast in the desert terrain, which is seemingly devoid of straight lines and instead consists of scattered low dark-green and brown saltbush scrub shrubs and low groundcover of coarse sands and dry, gold-hued grasses. Traveling on SR-247 past this KOP, limited visibility of the site is available as it is obscured by intervening topography and vegetation. Due to the slight gain in elevation, views of the valley floor past the project site are available in the distance as the terrain rises toward a series of mounded and staggered dark-colored hills. The rectangular forms of low, scattered structures are faintly visible in the foreground-middleground viewing distance but are not visually prominent in the scene. Tall LSTs are also visible in the foreground-middleground viewing distance but are not visually prominent. Due to distance, these elements generally create faint geometric lines that are partially skylined.

Analysis

A simulated view of the proposed project as viewed from KOP 3 is provided in Figure 10b. As depicted in the KOP 4 visual simulation, indistinct views of proposed project components would be available. Due to both the distance and the elevation of KOP 4 relative to the project

Draft Visual Resources Study Ord Mountain Solar Project

site, project components would sit low in the foreground-middleground landscape and would not be visually prominent. Viewers would continue to follow Waalew Road towards the eastern horizon line. The slatted perimeter fence would mask the visual effects of vegetation removal across the majority of the project site from view and the visual resources of the region would remain visually prominent. The landscape would continue to be co-dominated by Waalew Road that seemingly divides the scene into two components and more distant dark hills and hazy mountainous terrain. Although solar arrays would be slightly noticeable due to the color and line contrast between repeating rows of dark-colored solar panels and the surrounding desert terrain, these elements would not be overpowering and would not substantially affect the existing visual character and quality of the landscape as viewed from KOP 4. Weak visual contrast is anticipated to be experienced at KOP 4.

Key Observation Point 5 – Haynes Road

Existing View

KOP 5 is located on Haynes Road, approximately 0.26 mile south from the southern boundary of the solar facility and 0.65 mile east of SR-247. Situated at an approximate elevation of 2,895 feet amsl, KOP 5 provides a northerly view from Hanes Road across the flat, sandy soil and sage scrub covered valley floor toward the project site (Figure 11a, Key Observation Point 5). KOP 5 is representative of views to the project site and the existing high voltage transmission corridor available to local motorists on Haynes Road. Three large and geometric steel lattice towers rise above the distant horizon and are skylined in the view (see Figure 10a). Conductor line strung between LSTs create bright, concave lines that become increasingly glaring when viewed against the rugged darker colored mountainous terrain to the northeast. Lastly, scattered, lightly colored rural residential development is visible to the north and northwest but is generally difficult to detect due to the low vertical profile of structures.

Analysis

A simulated view of the proposed project as viewed from KOP 5 is provided in Figure 11b. As depicted in the KOP 5 visual simulation, details of project components would be difficult to detect. Instead, project component would primarily be experienced as a greyish and thin horizontal line that would stand out against the sandy soils and low, pale-green shrubs on the valley floor. Despite the noticeable color contrast depicted in Figure 11b, views from KOP 5 would continue to be dominated by the sandy soil and shrub-dotted valley floor, large LSTs, and mountainous terrain in the foreground-middleground. As viewed from KOP 5, the seemingly low vertical profile of solar panels would be unobtrusive and the form and line of the perimeter fence and solar would be consistent with the form and line of the flat valley floor. Further, the project

Draft Visual Resources Study Ord Mountain Solar Project

would be located in close proximity to existing large and geometric LSTs and dark to glaring transmission lines that have degraded the visual quality of the existing landscape. Because project components would not be visually prominent and the characteristic visual pattern displayed by the flat valley floor and rugged mountainous terrain would be retained, weak visual contrast is anticipated at KOP 5.

Key Observation Point 6 – Waalew Road near Rodeo Road

Existing View

Located approximately 0.3 mile east of the solar facility's eastern boundary and Meridian Road, KOP 6 is representative of views available to residents located beyond an immediate foreground-middleground viewing distance of the project site. Situated at an approximate elevation of 2,980 feet amsl, KOP 6 provides a westerly view along Waalew Road across gradually descending and mounded shrub covered terrain toward the project site and White Horse Mountain (Figure 12a, Key Observation Point 6). Thin and tall wood poles supporting a local electrical distribution line are aligned along Waalew Road. Residential development is visible but is sparse and appears to be marked by dark green trees along the street-facing elevation of structures. These lines of trees act as landscape screens and help to shield views of the road from residences. The local terrain appears to fall toward the project site (a denuded and tan portion of the site stands out in the view) and then slowly rises toward SR-247 and the foothills of rugged and prominent White Horse Mountain.

Analysis

A simulated view of the proposed project as viewed from KOP 6 is provided in Figure 12b. As depicted in the KOP 6 visual simulation, thousands of solar panels would be introduced to the valley floor and due to the character of the local terrain, a large portion of the facility would be visible from KOP 6. The gradually descending and mounded shrub covered local terrain would be transformed by project development and the majority the facility would experience as a low and long, rectangular swath of grey color occasionally interrupted by white, boxy inverters straight, sandy lines of interior access roads. The dark color of solar panels would create strong color contrast when viewed within the surrounding context of the tans and pale greens of existing terrain and vegetation and line created by panel edges at the western project boundary would be strong and bold when viewed against the foothills of mountainous terrain. In addition, the large battery storage building would rise above solar arrays and be viewed against the foothills of White Horse Mountain. The large form and white exterior of the building would be noticeable in views and would stand out when viewed against both the dark solar panels and the reddish hues of White Horse Mountain. Lastly, gen-tie monopoles and

Draft Visual Resources Study Ord Mountain Solar Project

structures at the facility's substation would create faint, vertical lines near the battery storage building however, these lines would difficult to distinguish as they would be perceived as thin when viewed from KOP 6. While the majority of project components would display a seemingly low vertical profile and views to White Horse Mountain and surrounding mountainous terrain would be maintained, the color contrast and scale of the proposed project would produce moderately strong contrast at KOP 6.

Key Observation Point 7 – SR-247 near Cummings Road

Existing View

KOP 7 is located just off SR-247, near Cummings Road and approximately 1 mile east of the western boundary of the project site. Situated at an approximate elevation of 3,000 feet, KOP 7 provides a southeasterly view from the state route and across the low grasses and mounded shrub covered valley floor toward the project site and surrounding hilly and mountainous terrain (Figure 13a, Key Observation Point 7). KOP 4 is representative of views to the project site available to motorists on SR-247 at distances greater than one mile. The available view at KOP 7 is similar to the available view at KOP 4. The predominant colors on the valley floor are the golden hues of grasses and green-brown foliage of shrubs. Unvegetated and low land to the east creates a lightly colored and thin form in the landscape. Hills and mountainous terrain are mounded or pyramidal and display a dark or greyish color.

Analysis

A simulated view of the proposed project as viewed from KOP 7 is provided in Figure 13b. As shown in Figure 12b, from SR-247 at a distance of approximately one-mile project components would not be visually prominent. Instead, the proposed facility would occupy a relatively low area in the foreground-middleground landscape and would appear as a series of flat, greyish horizontal forms separated by thin and sandy colored straight lines (i.e., access roads). At KOP 7, the facility would occupy a small portion of the visible landscape and due to the seemingly low vertical profile of project components, the proposed facility may be overlooked. Further, the landscape would retain the characteristic visual pattern of a broad, shrub-dotted valley that gradually rises and is regularly interrupted by prominent hills and mountainous terrain. Therefore, as viewed from KOP 7, implementation of the proposed project would create weak visual contrast in the landscape.

Draft Visual Resources Study Ord Mountain Solar Project

Key Observation Point 8 – SR-247 near Waalew Road

Existing View

KOP 8 is located at a similar location as KOP 4 but instead looking to the east toward to Ord Mountain solar and energy storage project site, looks to the southwest towards the Calcite Substation site and the distant San Bernardino Mountains (see Figure 14a, Key Observation Point 8). KOP 8 is representative of views to the Calcite Substation site available to SR-247 motorists within a foreground-middleground viewing distance of the substation site. KOP 8 is located at an elevation of approximately 2,954 feet amsl and is situated approximately 0.6 mile north of the substation site.

From KOP 8, the asphalt surface of SR-247 travel lanes occupies the immediate foreground – middleground of the view. Beyond the state route, the characteristic and relatively flat, golden hued grass, mounded drab shrub, and exposed tan soil covered valley terrain marks the existing views. To the west and southwest, the flat, shrub-covered terrain gradually rises and transitions to the rugged, rocky, and steep slopes of White Horse Mountain and the southeastern extent of the Granite Mountain. A similar transition is visible in the distant middleground as Lucerne Valley terrain gradually rises and ultimately forms the foothills and north-facing slopes of the San Bernardino Mountains. Approximately nine tall steel lattice structures supporting regional transmission lines are visible in the foreground-middleground viewing distance as the local transmission corridor proceeds through the project area landscape in a general east-west direction prior to turning southwest towards an unseen dry depression (i.e., Rabbit Lake).

Analysis

A simulated view of the proposed project as viewed from KOP 8 is provided in Figure 14b. As shown in Figure 13b, at a distance of approximately 0.60 mile the Calcite Substation would be experienced as a collection of thin and relatively faint, vertical and horizontal lines. Distance from KOP 8 to the substation site would reduce the apparent scale of substation racks and A-frame structures and these features would not be visually prominent in the available long views. Loop-in transmission structures up to 180 feet high would display a straight vertical line but due to a thin form and backscreening by mountainous terrain, these features would not be visually prominent and would not be skylined. In addition, vertical substation and loop-in transmission line features would be introduced where existing tall and complex vertical features (i.e., LSTs) occur, and as such, would result in an incremental increase in existing line contrasts in the landscape. Despite the addition of new vertical and horizontal lines to the view, the landscape would retain the characteristic visual pattern of a broad, shrub-dotted valley abutted by local and more distant mountainous terrain. Further, vertical and horizontal

Draft Visual Resources Study Ord Mountain Solar Project

substation components would generally replicate the line and form of existing transmission infrastructure in the landscape. Therefore, as viewed from KOP 8, implementation of the proposed project would create weak visual contrast in the landscape.

Key Observation Point 9 – Fern Road at SR-247

Existing View

KOP 9 is located on Fern Road, just east of SR-247, and approximately 0.4 mile southeast of the eastern boundary of the 13-acre SCE Calcite Substation site. Located at an approximate elevation of 2,890 feet amsl, KOP 9 looks to the northwest from Fern Road across the SR-247 travel lanes and towards relatively flat undeveloped desert terrain populated by low, grey, yellow and brown shrubs (see Figure 15a, Key Observation Point 9). As viewed from KOP 9, the terrain beyond visible LSTs gradually rises to the west and then abruptly transitions to form the rugged and rocky east-facing slopes of White Horse Mountain. While visible, the three existing steel lattice display an almost transparent form that, when combined with backscreening of the mountainous terrain, reduces the overall visual prominence of these features in the view. Several lightly colored, thin and horizontal transmission lines extend to the east from these structures (and eventually span SR-247) however, these lines are also backscreened by mountainous terrain. The mounded ridgelines and seemingly smooth textured slopes of Sidewinder Mountain are visible beyond the low transmission lines in the distance to the northwest.

Analysis

A simulated view of the proposed project as viewed from KOP 9 is provided in Figure 15b. As shown in Figure 15b, the majority of substation components included tall loop-in transmission line structures would be backscreened by local mountainous terrain and would be experienced as a series of thin, vertical and horizontal lines. In addition, at certain times of the day, vertical and horizontal substation components including the prefabricated concrete perimeter wall would be partially cast in shadow and as a result, would display a slightly darker grayish value than when compared to components facing the sun. Therefore, at certain times of the day, the overall visibility of Calcite Substation elements would be enhanced and would create visible color contrast with the tan and drab tones of valley element and darker tan tones of more distant mountainous terrain (i.e., Sidewinder Mountain). Alterations to the existing line and texture of the 13-acre substation site resulting from proposed grading and site preparation activities would generally be masked by the shrub-covered terrain. The majority of vertical and horizontal substation elements would display an apparently low vertical profile and A-frame racks would be viewed as a collection of thin lines rising from the 13-acre site. New loop-in

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transmission line LSTs or monopoles would display a similar tall form as existing LSTs. However, the solid form of the monopoles and the prefabricated concrete perimeter wall features would enhance the visibility of the Calcite Substation. The proposed project would produce moderately weak visual contrast when viewed from KOP 9.

Key Observation Point 10 – Northbound SR-247

Existing View

KOP 10 is located on northbound SR-247, approximately 0.15-mile north of Haynes Road, and approximately 650 feet east of the 13-acre SCE Calcite Substation site (see Figure 4 for location of KOP 10). The KOP is located an approximate elevation of 2,900 feet amsl and looks to the west across state route travel lanes and to flat undeveloped desert terrain covered by dense to scattered and low, grayish yellow shrubs (see Figure 16a, Key Observation Point 10). The landscape displays sandy tan to red-brown to grayish tones and the horizontal valley floor is punctuated by wide mountainous terrain. From KOP 10, the flat desert terrain gradually rises to the west and eventually meets the base of rugged and rocky east-facing slopes of White Horse Mountain. The ridgelines form an elevated, serrated line that defines the western horizon. Two low and rectangular structures are located near the base of White Horse Mountain to the northwest of KOP 10 and no other visible development occurs to the west of the state route.

Analysis

A simulated view of the proposed project as viewed from KOP 10 is provided in Figure 16b. As shown in the figure, the valley floor would be punctuated by several tall tubular steel poles and the slopes and solid perimeter wall of the substation would create a noticeable break in the density and continuity of desert vegetation. Further, rectangular racks and angular A-frame structures would rise from the substation yard and contribute additional tall and thin lines and metallic features to the visible landscape. The thin, vertical lines of circuit breakers and transformers would be noticeable above the unbroken horizontal line created by the solid perimeter wall as would the roofline of the darker toned MEER. The introduction of project components would interrupt the continuous pattern of undeveloped desert vegetation and terrain that occurs to the west of SR-247. The project would introduce thin and tall vertical forms and solid horizontal forms to the SR-247 viewshed. While these features appear to somewhat recede into the background terrain due to the grayish and sandy tones of project components (see Figure 16b) and are visible to the south and east of KOP 10, they are relatively uncommon to the west of the state route. In addition, the introduction of solid monopoles and the strong solid form and horizontal line of the prefabricated concrete perimeter wall features would enhance the

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visibility of the Calcite Substation. Therefore, the proposed project would produce moderate visual contrast when viewed from KOP 10.

Key Observation Point 11 – Southbound SR-247

Existing View

KOP 11 is located on southbound SR-247, approximately 0.40-mile north of Haynes Road, and approximately 1,600 feet west of the proposed substation site within the Ord Mountain Solar Project boundary (see Figure 4 for location of KOP 11). Located at an approximate elevation of 2,910 feet amsl, KOP 11 looks southeast across SR-247 towards the flat desert terrain supporting scattered rural residences and tall and bold steel lattice towers associated with electrical transmission infrastructure (see Figure 17a). As shown in the figure, the steel lattice towers are sited next to one another and support parallel electrical transmission lines across the desert terrain. Several towers punctuated the silhouette of dark mountains forming the distant horizon line and other to the east are more difficult to detect as they retreat towards mounded and rocky hills. The flat desert is covered with low spreading shrubs and short golden grasses. Lightly colored and rectangular residential structure are faintly visible to the west and dark colored sphere-like elements (i.e., clustered trees) tend to be planted near residences. Vegetation across the desert floor displays a consistent form, color, and texture and creates a continuous visual pattern. Residential development is low, unimposing, and does not command attention in the view.

Analysis

A simulated view of the proposed project as viewed from KOP 10 is provided in Figure 17b. As shown in the figure, tall and solid steel monopoles would be introduced and would create visible form and line contrast with existing steel lattice towers. From KOP 11, new steel monopoles would appear larger than steel lattice structures and their solid and metallic appearance would help the features stand out in the scene. The gen-tie line would be visible against the backdrop of the desert sky and the pattern of gen-tie line and monopoles would lead the eye of the viewer from SR-247 and towards the on-site substation. The rectangular racks and angular A-frame structures would punctuated the desert floor and rise above the mountain ridgelines in the distance. The metallic/sandy color of substation features would stand out against the purples and blue-browns of the more distant hills and mountains. The energy storage system building would also be visible and would display a simple geometric form. The slatted perimeter fence and edge of panel rows would create visible brown and grayish lines. The perimeter fence and panel edges would break the continuity of drab and low vegetation that currently covers the flat desert terrain. The proposed project would introduced multiple elements that would be visible from and command attention at KOP 11. Steel monopoles would create bold lines in the landscape and the on-site substation

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would introduce a concentration of angular forms and lines to the desert floor. The perimeter fence would also create a visible brown strip in views to the southeast that would create a break in the characteristic low shrub covered desert floor. Therefore, the proposed project would produce moderate visual contrast when viewed from KOP 11.

Conclusion

The Ord Mountain solar and energy storage site terrain is generally flat and consists of fallow agricultural lands dotted with low, mounded shrubs, expanses of short, golden grasses, and large areas of exposed tan colored soils. The SCE Calcite Substation is also flat and is similarly covered by an assemblage of mounded shrubs, low grasses, and exposed soils. Both the southern edge of the solar and energy storage site and the eastern portion of the 75-acre substation parcel are punctuated by three regional transmission lines that are supported by large and geometric LSTs. The surrounding area displays a similar assortment of low vegetation and is sparsely developed with rural residential structures, abandoned residences, and electrical distribution and transmission infrastructure. While SR-247 traverses the proposed project area landscape and provides motorists generally indistinct views to the proposed project, approximately 20 active residences are located within 0.5 mile of the solar and energy storage site.

The visual change associated with development of the Ord Mountain solar and energy storage project would be most noticeable to residents located on properties situated immediately adjacent to the proposed project site and those situated at an elevation greater than the proposed project. While project components would be set back from a perimeter slat and chain-link fence, repeating rows of solar arrays would be visible through gaps in the slatted fence and dark colors and regular, repeating lines atypical of the desert landscape would be experienced. For example, when viewed from KOP 3 (see Figure 9b), the details of solar panels and metal piers would be distinct and the grayish color of panels would contrast with the tan and greens displayed by existing terrain and vegetation. Also, from this particular vantage point, the prevalent visual pattern of the low valley floor juxtaposed with the high vertical relief of mountainous terrain would be broken and otherwise interrupted by the introduction of thousands of solar panels to the landscape. When viewed from locations greater in elevation than the project (such as at Key View 6 – see Figure 12b) elements of the valley and mountains visual pattern would remain visible but the color contrast produced by thousands of darkly colored panels would be strong and scale of the proposed solar facility would be expansive. Moderate visual contrast is also anticipated where SR-247 motorists would be afforded views to Calcite Substation components partially cast in shadow and within a foreground-middleground distance (such as at Key View 9 – see Figure 15b). Shadows would temporarily heighten the color contrast associated with vertical and horizontal elements (e.g., loop-in transmission line structures and the prefabricated concrete perimeter wall) such that these features would be difficult to overlook.

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When viewed from elsewhere in the surrounding area including perimeter roadways such as Meridian Road, the visual change associated with the proposed project would be less severe and existing visual patterns in the landscape would generally be maintained. As viewed from KOP 1 (see Figure 7b), the introduction of inverters, thousands of solar panels, and access roads would be partially concealed from view by a beige slatted fence that would run along the perimeter of the proposed solar facility. Receptors would be afforded narrow views to the project through the gaps in fence slats however; project components would not be overly distinct. Further, the relatively low vertical profile of solar panels and the low horizontal line displayed fence would reference the form and line of the valley floor and elements of the characteristic low valley/high mountain visual pattern of the North Lucerne Valley landscape would remain visible.

From locations outside of the immediate foreground-middleground viewing distance of the project site, project components would largely be indistinct and would be experienced as thin dark lines in the desert landscape. As illustrated in visual simulations prepared for KOPs 2, 4, 5, 7, and 8 (see Figures 8b, 10b, 11b, 13b, and 14b), the color and line of project components (primarily solar panels but also vertical and horizontal features associated with the Calcite Substation) would be visible yet, due to distance and backscreening of mountainous terrain, the relatively low vertical profile of solar and energy storage project components, and the wide nature of available views, noticeable color and line contrast would not be visually prominent. Further, as viewed from the distances and angles depicted at KOPs 2, 4, 5, 7, and 8, project components would not dominate the landscape or substantially degrade the existing visual character or quality of the project area setting. Lastly, outside of the immediate foreground-middleground viewing distance, views to mountainous terrain would not be substantially interrupted by proposed project development. A visual connection to the mountains of the local area and region would remain available to the limited sensitive receptors in the surrounding area.

When viewed from SR-247 at a relatively close proximity, the Calcite Substation and the gen-tie, on-site substation, energy storage system, and site perimeter fencing would be clearly visible. As depicted in visual simulations prepared for KOPs 10 and 11 (see Figure 16b and 17b), rectangular racks and angular A-frame structures would rise from the substation yards and contribute additional tall and thin lines and metallic features to the visible landscape. The introduction of project components would interrupt the continuous pattern of undeveloped desert vegetation and terrain that occurs to the west of SR-247 (see Figure 16b) and across the sparsely developed desert floor to the east of the state route (see Figure 17b). In addition, the introduction of solid monopoles and the strong solid form and horizontal line of the prefabricated concrete perimeter wall at the Calcite Substation and the slatted fence at the on-site substation (see Figures 16b and 17b) would enhance the visibility of the new development and create strong form and line contrast.

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The area surrounding the proposed project site is sparsely developed and contains active and abandoned rural residential structures, private yards littered with inoperable vehicles and equipment, electrical distribution lines supported by wood poles, three high-voltage regional transmission lines supported by large LSTs, undeveloped flat desert lands, and mountainous terrain. The presence of mountainous terrain in the surrounding area landscape creates a moderately striking visual pattern however; overall, visual quality of the landscape was determined to be moderate to moderately low. In addition, the relatively low vertical profile of proposed solar arrays (and thin form and line of substation components) would largely maintain the availability of existing views to mountainous terrain and the visual pattern of low valley/high mountains would remain present from most viewing location. Despite the low volume of residential receptors in the immediate surrounding area, implementation of the proposed project would result in moderate to moderately high visual contrast when viewed from an immediate foreground-middleground view. Further, project elements including the Ord Mountain solar and energy storage project perimeter fence and Calcite Substation project perimeter wall would interrupt the existing visual continuity and pattern of the low valley floor and the rising terrain of local area mountains. Lastly, the proposed exterior color of solar facility inverters and the battery storage structure would create noticeable color contrast with both the dark surface of solar panels and the tan-reddish hues of White Horse Mountain and mountainous terrain in the area. This color contrast would make these features stand out when viewed from elevated vantage points located east of the solar facility, local roads, and SR-247. Therefore, for the reasons discussed above, development of the proposed project would result in potentially significant impacts to the existing visual quality and character of the site and surrounding area. Mitigation Measures VIS-1 and VIS-2 are proposed and would reduce potential visual quality and character impacts to a less than significant level.

As shown in Figures 14b, 15b, and 16b, the Calcite Substation, would be backscreened by local mountainous terrain and would generally be experienced as a series of vertical and horizontal lines. The majority of vertical and horizontal substation elements would display a seemingly low vertical profile and A-frame racks would be viewed as a collection of thin lines rising from the site. In addition, new loop-in transmission line LSTs or monopoles would generally display a similar tall form as existing LSTs. Further, vertical and horizontal substation components would generally replicate the line and form of existing transmission infrastructure in the landscape. However, the solid form of the monopoles and the prefabricated concrete perimeter wall features would enhance the visibility of the Calcite Substation and would contribute to an overall moderate visual contrast for the facility. Therefore, development of the Calcite Substation would result in potentially significant impacts to the existing visual quality and character of the site and surrounding area. Mitigation

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Measure VIS-3 is proposed and would reduce potential visual quality and character impacts to a less than significant level.

Mitigation Measure VIS-1: Targeted Landscape Buffers. To enhance existing screening of the Ord Mountain solar and energy storage project site and soften the appearance of the slatted perimeter fence as viewed from local residences, the applicant shall install landscape buffers at specific locations along the solar and energy storage project boundary. More specifically, landscape buffers shall be installed along the eastern Ord Mountain solar and energy storage project boundary where residences are located within 100 feet of the solar and energy storage project boundary. In addition, a landscape buffer shall be installed along the northern Ord Mountain solar and energy storage project boundary where an existing stand of trees parallels the solar and energy storage project boundary and at the southeastern corner of the intersection of Fern Road and Waalew Road. The intent of the landscape screens is to enhance existing screening present in the landscape and soften the transition of valley floor to the Ord Mountain solar and energy storage project perimeter fence as viewed from residences in close proximity (i.e., within 100 feet) to the solar and energy storage project boundary. Buffer features shall include informal groupings of small boulders and shrubs (such as saltbrush scrub shrub) compatible with the climate zone of the project area (i.e., does not require irrigation beyond establishment) as presented by the Western Garden Book (Brenzel 2007).

Mitigation Measure VIS-2: Surface Treatment of Inverters and Battery Storage Structure. Although proposed Ord Mountain solar and energy storage project inverters would be partially screened when viewed from an immediate foreground-middleground viewing distance by the slatted perimeter fence, these lightly colored components would be visible from more distant and higher elevation vantage points in the surrounding area. Therefore, to reduce anticipated color contrast, inverters shall be painted a greyish exterior color (Shadow Grey or similar, see BLM Standard Environmental Color Chart CC-001; BLM 2008) such that these components better blend in with the dark tones of solar panels. Similarly, to reduce anticipated color contrast between the battery storage structure and mountainous terrain, the battery storage structure shall be painted a darker beige exterior color (Carlsbad Canyon or similar, see BLM Color Chart CC-001; BLM 2008), to better recede into the backing landscape.

Mitigation Measure VIS-3: Installation Wall Treatment at Calcite Substation. To reduce the potential visual and aesthetic impact of the perimeter security wall required at the Calcite Substation, SCE shall either a) install desert shrubs on the visible slopes of the substation site and at the base of prefabricated concrete wall to break up the mass of the security wall; or b) submit an earthen color wall plan to the County for approval prior to the construction of the wall.

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The implementation of mitigation measures and resulting visual conditions at KOPs 1, 2, 4, 6, 8, 9, 10, and 11 is reflected in Figures 18 through 25. Mitigation measures would not be overly visible from KOPs 3, 5, and 7 and therefore, revised simulations have not been prepared from these KOPs. As indicated in the visual simulations and further detailed in Appendix A, Visual Contrast Rating Forms, the implementation of mitigation would generally reduce anticipated visual contrast at the identified KOPs.

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

Due to the remote desert setting, the proposed project sites and the surrounding area are generally devoid of significant nighttime lighting sources or daytime glare. Existing light sources in the area consist primarily of lighting associated with the scattered rural residences. There are no existing structures in the proposed project area that create a substantial source of daytime glare.

Construction

Construction of the proposed project is anticipated to occur during hours permitted by the County of San Bernardino; therefore, nighttime lighting to accommodate construction activities would not normally be required. Five residences are located within 100 feet of the Ord Mountain solar and energy storage project boundaries, and proposed operational nighttime lighting would potentially affect existing views in the surrounding area, which is generally devoid of significant nighttime lighting sources. As proposed for the Ord Mountain solar and energy storage project, lighting would be installed at primary access gates to the site and around the on-site substation. Lighting would also be installed within the Calcite Substation site only in areas where it is required for safety, security, or operations. All proposed project lighting would be shielded and directed downwards to minimize skyglow and occurrences of light trespass onto surrounding properties. Furthermore, installed lighting would be mounted on support poles less than 14 feet in height and would be motion activated (lighting at the Calcite Substation would be motion activated or switch activated; switch activated lighting would only be operational when personnel enter the area). As such, all proposed project lighting would normally be off unless activated by project personnel.

Operation

All nighttime lighting associated with the proposed Ord Mountain solar and energy storage project would be subject to County approval and compliance with County requirements (County Ordinance No. 3900 and County Development Code Chapter 83.07, Glare and Outdoor Lighting). As outlined in Section 5.3, Local Regulations, County Ordinance No. 3900 regulates glare, outdoor

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lighting, and night sky protection and County Development Code Chapter 83.07 regulates outdoor lighting practices geared toward minimizing light pollution, glare, and light trespass; conserving energy and resources while maintaining nighttime safety, visibility, utility, and productivity; and curtailing the degradation of the nighttime visual environment. Because all proposed lighting would be shielded and directed downwards and motion-activated lighting would normally be turned off unless needed for nighttime emergency work, project lighting would be consistent with County requirements.

SCE's Calcite Substation is not subject to County approval and requirements. However, installed lighting would also be shielded, directed downwards, and normally turned off unless needed for nighttime emergency work or motion activated. Compliance with County lighting regulations, submittal of an approval of exterior lighting plans as required by General Plan Conservation Element policy D/CO 3.1(b), and compliance with General Plan Conservation Element policy D/CO 3.2 would ensure that impacts associated with new sources of nighttime lighting and glare at the Ord Mountain solar and energy storage project would be less than significant. Installation of shielded and downward directed lighting avoidance of nighttime lighting use unless needed for nighttime emergency work would ensure that impacts associated with new sources of nighttime lighting and glare at the SCE Calcite Substation project would be less than significant.

As proposed, the Ord Mountain solar and energy storage facility would utilize dark PV solar panels featuring an anti-reflective coating. PV solar panels are designed to be highly absorptive of all light that strikes the panel surfaces, generating electricity rather than reflecting light. In regards to glare and reflectance levels, PV panels have a lower index of refraction/reflectivity than common sources of glare in residential and commercial environments. For example, the glare and reflectance levels from a given PV system are lower than the glare and reflectance levels of steel, snow, standard glass, plexiglass, and smooth water (Shields 2010). The glare and reflectance levels of modules are further reduced with the application of anti-reflective coatings. Further, PV suppliers typically use stippled glass for panels as the "texturing" of the glass allows more light energy to be channeled/transmitted through the glass while weakening the reflected light. With application of anti-reflective coatings and use of modern glass technology, PV panels installed at the Project would display overall low reflectivity.

In regards to orientation and tracking, the PV solar panels would be angled perpendicular to the general east-west direction of the sun and are designed to track throughout the day to maximize panel exposure to the sun. This would generally result in any reflected light being reflected upwards approximately correlating to the angle of inbound light from the sun. As such, exposure to glare from this reflected light would be limited to elevated positions in relation to the panels. In addition, the panels are single-axis (i.e., panels track the sun in an east-west direction and tilt along a fixed horizontal axis), as opposed to dual axis (i.e., panels tilt along a horizontal and

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vertical axis). Therefore, the reflected light, limited as it is, would also reflect to the side as well as up, again in approximate correlation to the angle at which the sunlight is received. This would mean that when the sun is at its lowest position in the sky (sunset and sunrise), reflected light off the panels would be at its lowest angle. Therefore, sunrise and sunset represent the time of greatest potential for receptors to be exposed to generated glare.

As stated above, some brief glare may be generated by the panels throughout the day and potentially received by residential properties in the surrounding area. This is most likely to be experienced at the break of day or approaching sunset as the sun breaks the eastern horizon and approaches the western horizon. During these brief periods, the modules would be backtracked to approximately 10 degrees. Unabsorbed incoming light at 10 degrees would reflect off at approximately 20 degrees above the opposite horizon and therefore, sunrise and sunset represent the times during which reflected light would be lowest above the opposite horizon. However, there is low potential for direct glare to be received by sensitive viewers (i.e., residents) in the surrounding area as glare generated by the panels would be redirected approximately 20 degrees above the opposite horizon and above and away from residents. In addition, the 6-foot slatted perimeter fence would help to intercept any low angle direct glare from being received at residential properties within 0.25-mile of the Project site in the surrounding area. At other times of the day, panels would be perpendicular to the general east-west direction of the sun and incoming light would be reflected towards the sun at a similar angle. Due to the relatively flat terrain of the Project site and immediate surrounding area, any generated direct glare would be located above and away from local area residents.

While residents in the immediate surrounding would not be exposed to direct glare under normal operating conditions, the color of solar panel surfaces would fluctuate throughout the day. This fluctuation of color may be perceived by sensitive viewers as glare; however, this effect may be more appropriately described as a contrast in color. In the *Utility-Scale Solar Energy Facility Visual Impact Characterization and Mitigation Project Report*, Argonne National Laboratory's Environmental Science Division documented the visual characteristics of various utility-scale solar energy facilities on the basis of field observations of parabolic trough, thin-film PV, power tower, and concentrating PV facilities in the southwestern U.S. (Argonne National Laboratory 2013). The Copper Mountain Solar Facilities One and Two Projects were two of three thin-film PV projects observed in the report. Field observations of the projects determined that at certain angles and times of the day, darkly colored PV panels may appear to be lightly colored or white (Argonne National Laboratory 2013). During these periods that generally correspond to following sunrise and prior to sunset, the color displayed by panel surfaces may be perceived as indirect glare. Photographs depicting the range of color displayed by PV panels at the Copper Mountain Solar Facilities One and Two Projects are included as

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Figure 26, Color Shifting on Photovoltaic Solar Panels Throughout the Day: Copper Mountain Solar Facility, Boulder City, NV. As indicated in the photographs of the Copper Mountain Solar Facilities One and Two Projects, the surface of PV panels may be perceived as bright at certain angles and certain times of the day however, the panels would primarily appear as a near continuous, darkly colored, flat installation when viewed from off-site vantage points.

As detailed above, operation of the Project would not result in a substantial new source of glare that would adversely affect daytime views. The Project would utilize dark PV solar panels designed to be highly absorptive of all light that strikes the panel surfaces. An anti-reflective coating would also be applied to all PV panels and the glare and reflectance levels from panels with anti-reflective coatings are lower than that of steel, snow, standard glass, plexiglass, and smooth water (Shields 2010). In addition, due to the relatively flat terrain of the Project site and immediate surrounding area and the angle behavior of reflected light at sunrise and sunset, resulting glare during normal operations would be redirected above and away from nearby residents throughout the day and year. During early morning and late afternoon hours, darkly colored PV panels may appear to be lightly colored or white however, this color contrast effect is not considered direct or indirect glare. Rather, the color shifting of the panels would be an operational attribute of the Project associated with general visual contrast. Because operation of the Project would not result in a substantial new source of glare that would adversely affect daytime views, impacts would be less than significant.

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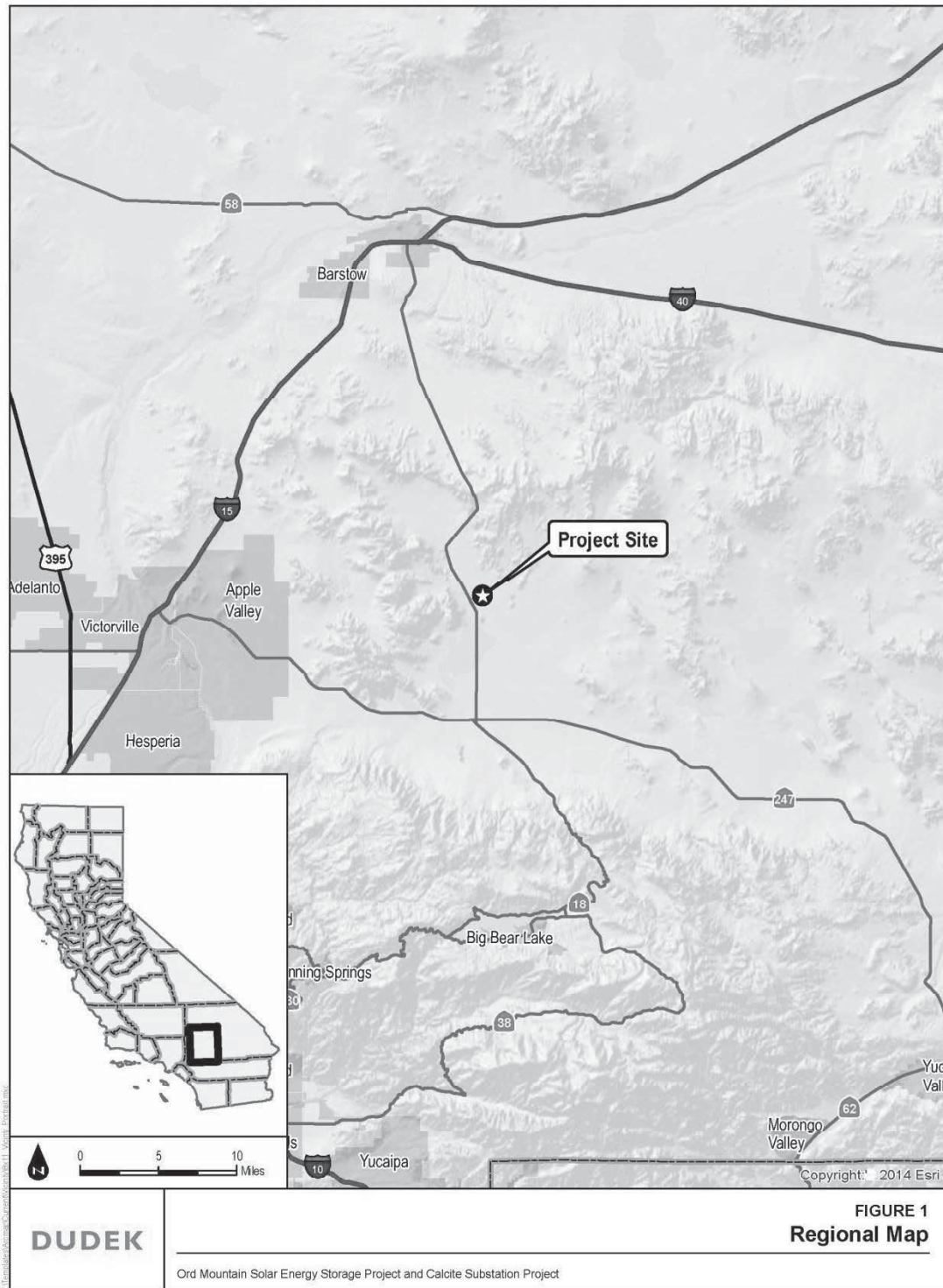
7 REFERENCES

- Argonne National Laboratory. 2013. Utility-Scale Solar Energy Facility Visual Impact Characterization and Mitigation. December 20, 2013.
- Bureau of Land Management (BLM). 1986. Manual H-8410-1 – Visual Resource Inventory.
- BLM. 2008. Standard Environmental Color Chart CC-001. June.
- 14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.
- Caltrans (California Department of Transportation). 2008. Landscape Architecture Program Scenic Highway Guidelines. October 2008.
- Caltrans. 2016a. Transportation Concept Report, State Route 247 District 8.
http://www.dot.ca.gov/hq/tpp/corridor-mobility/D8_docs/TCRs/sr-247.pdf.
- Caltrans. 2016b. California Scenic Highway Mapping System, San Bernardino County. Accessed July 7, 2016. http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm.
- Caltrans. n.d. “2014 Traffic Volumes of California State Highways.” Division of Traffic Operations.
- County of San Bernardino. 2007a. County of San Bernardino 2007 General Plan.
- County of San Bernardino. 2007b. 2007 Development Code.
- County of San Bernardino. 2007c. County of San Bernardino General Plan Open Space Element: Major Open Space Areas Map.
- Shields, Mark. 2010. PV Systems: Low Levels of Glare and Reflectance vs. Surrounding Prepared for Sunpower. 2010.

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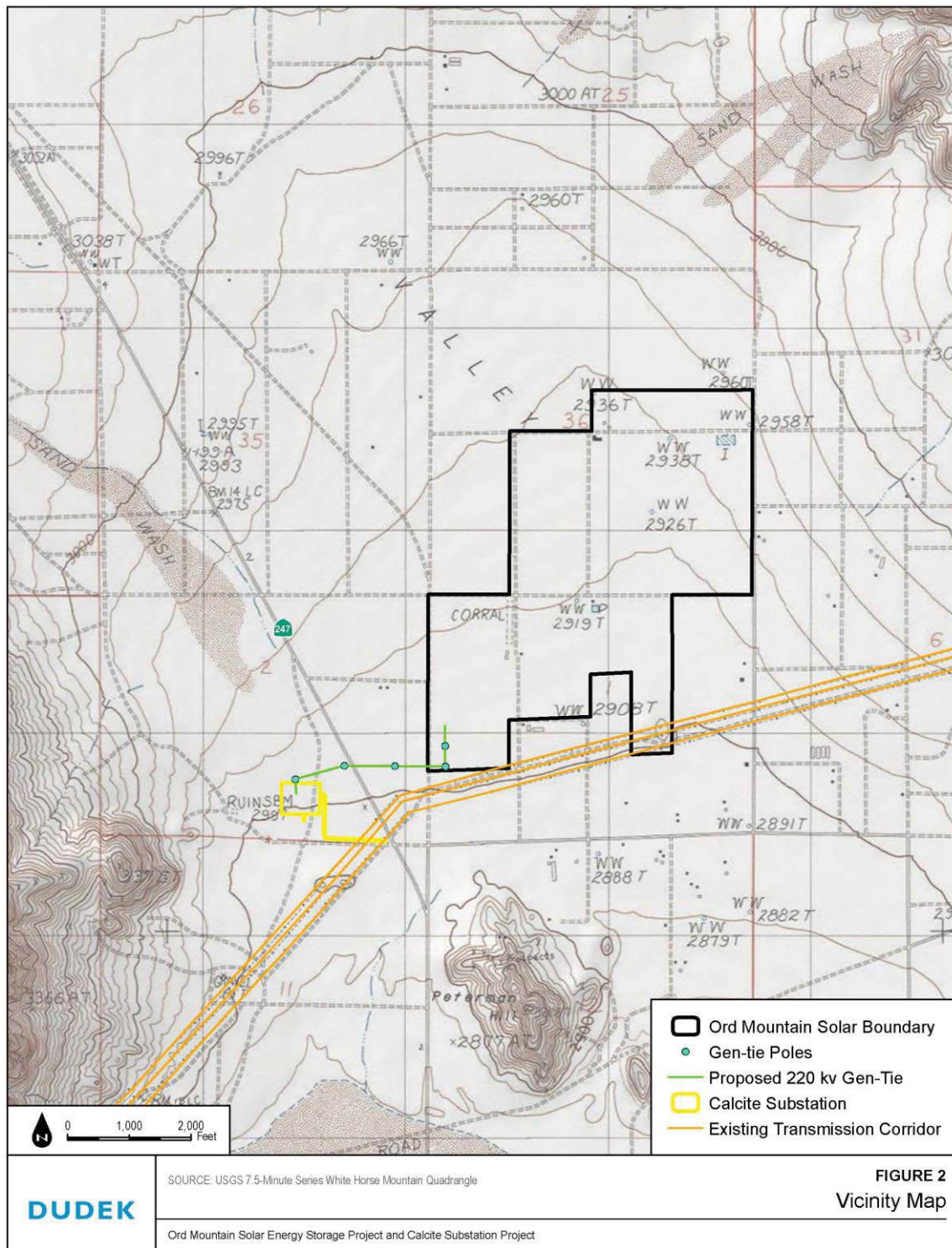
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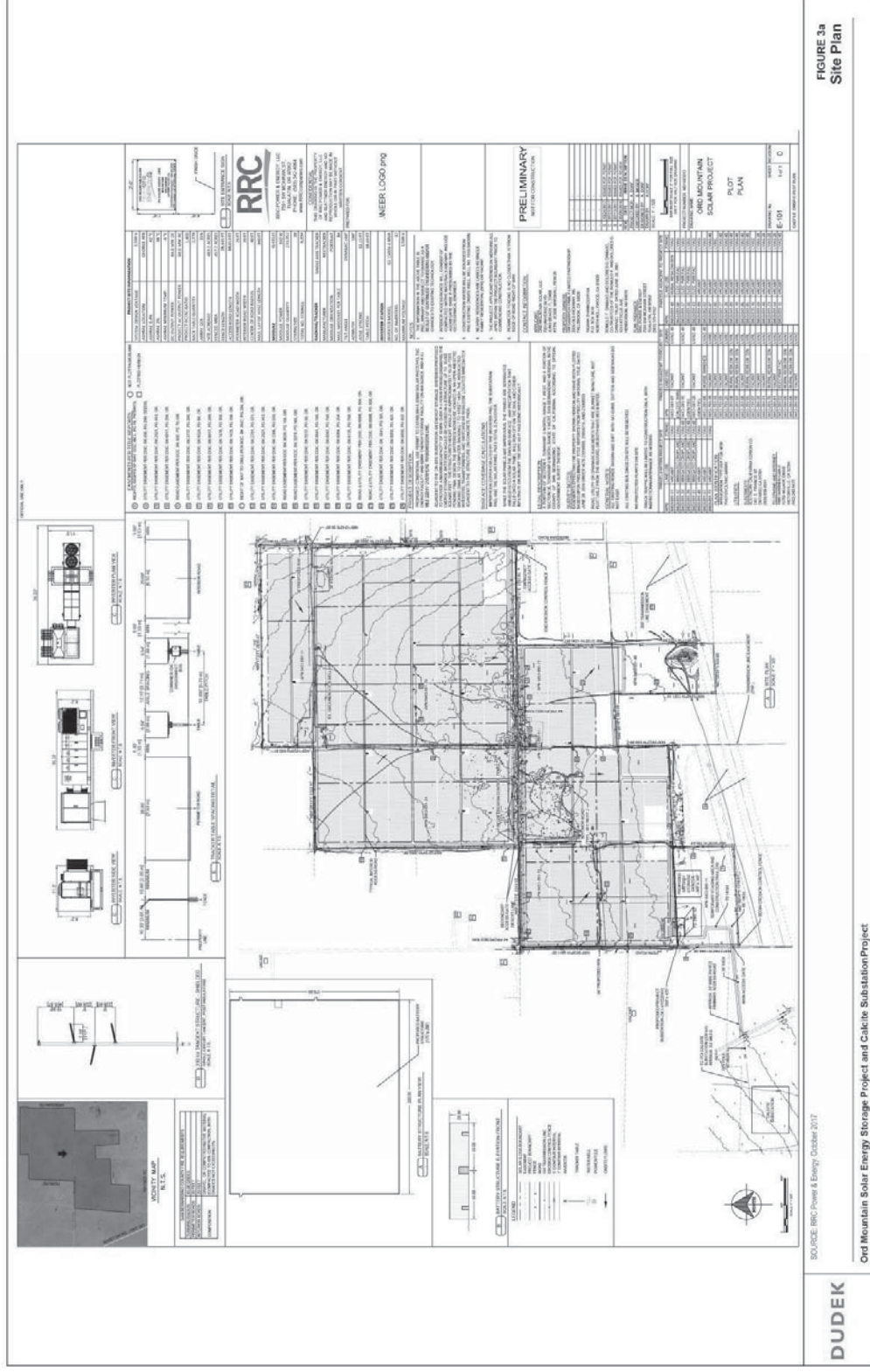
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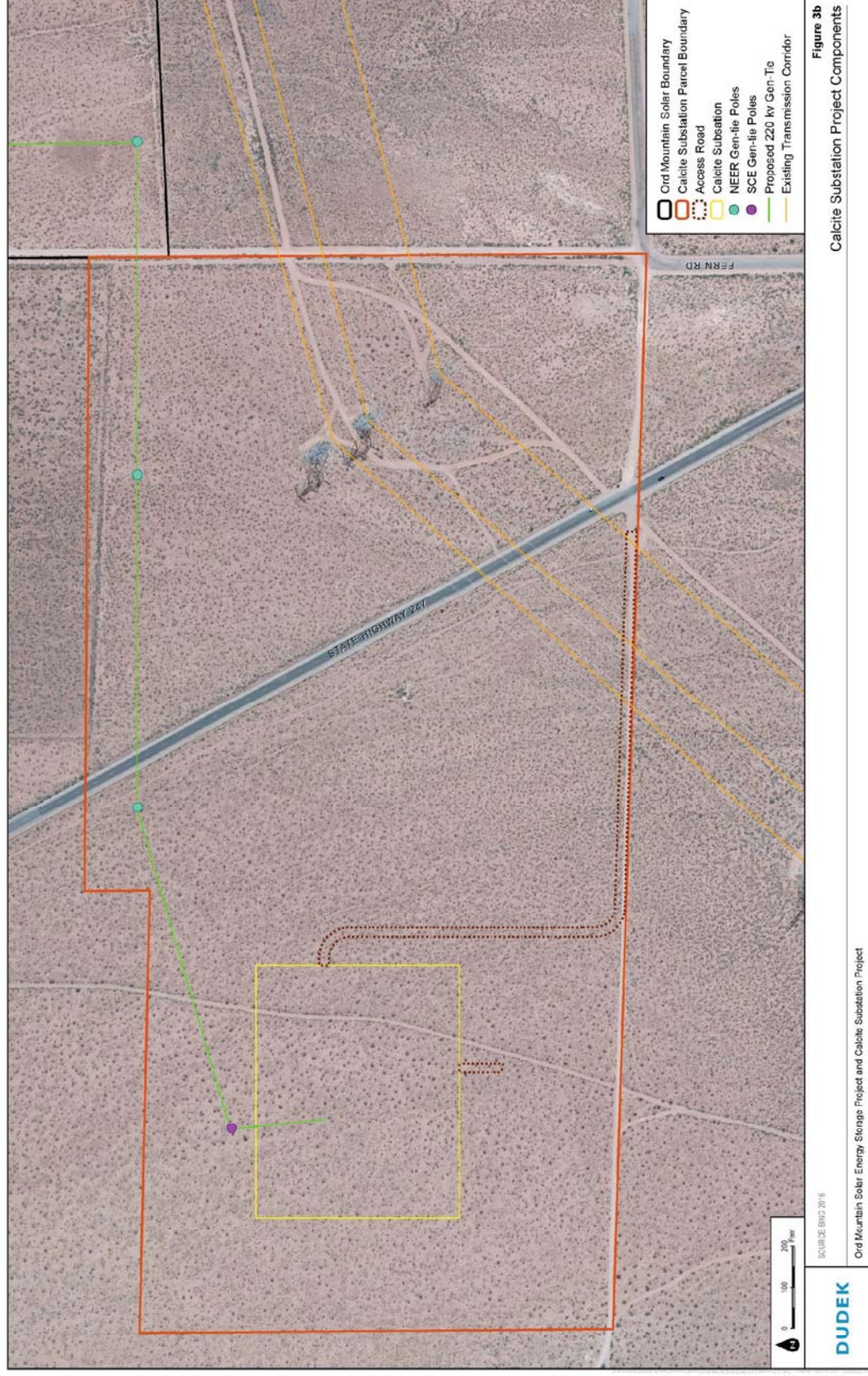


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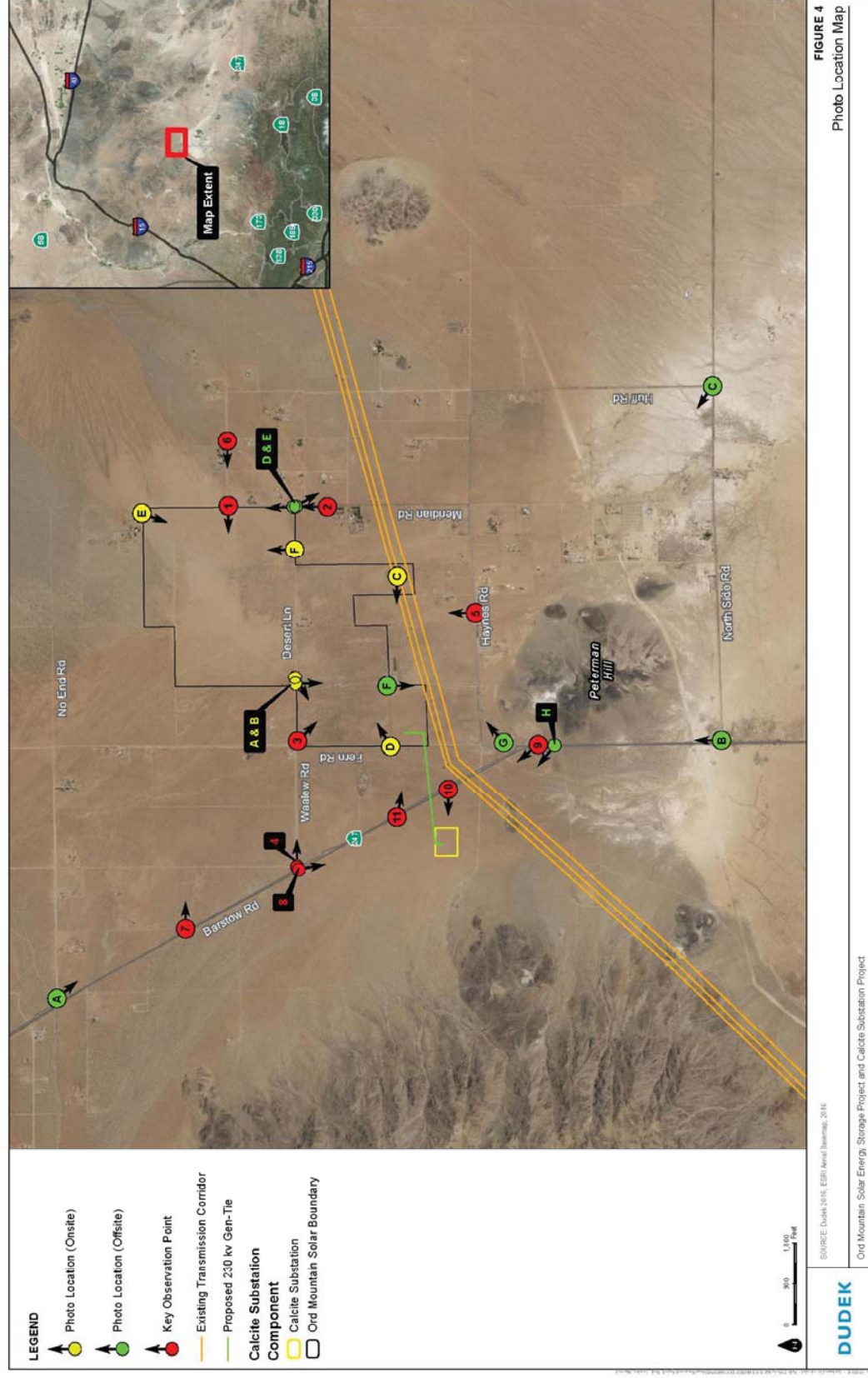


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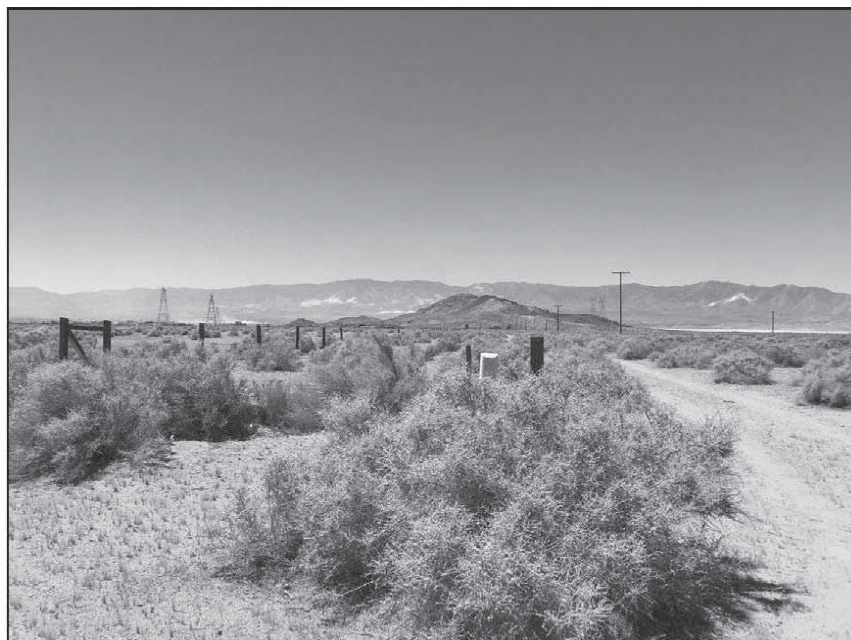
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Photograph A: View looking south from Desert Lane



Photograph B: View looking southwest from Desert Lane

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Ord Mountain Solar Energy Storage Project and Calcite Substation Project

Figure 4a
On-site Visual Elements

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Photograph C: View looking west from onsite hill



Photograph D: View looking east from Fern Street

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Figure 4b
On-site Visual Elements

Ord Mountain Solar Energy Storage Project and Calcite Substation Project

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Photograph E: View looking southwest from northeastern corner of site



Photograph F: View looking north from Desert Lane

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Ord Mountain Solar Energy Storage Project and Calcite Substation Project

Figure 4c
On-site Visual Elements

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Photograph A: View looking southeast from No End Road/SR-247



Photograph B: View looking north from North Side Road

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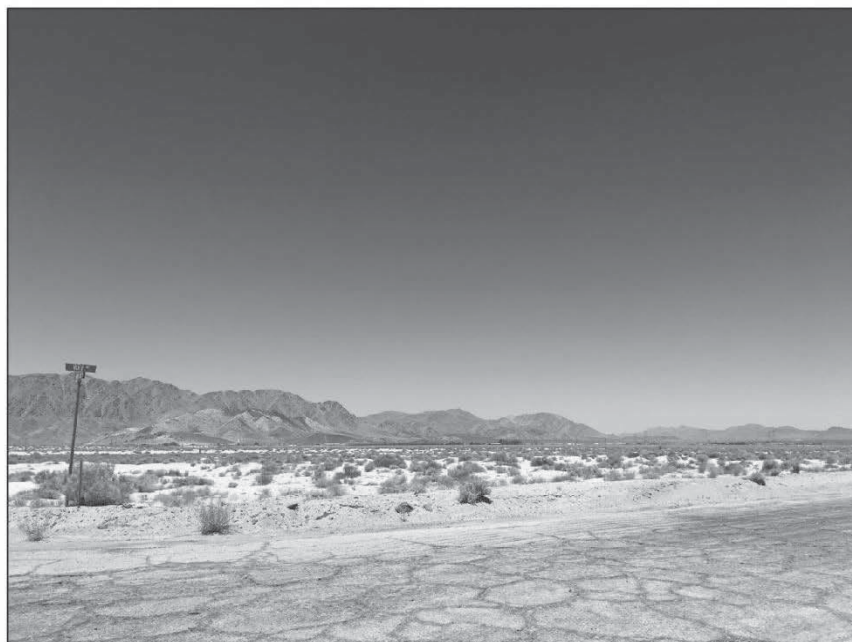
Figure 4d
Offsite Vantage Points and Visual Elements

Ord Mountain Solar Energy Storage Project and Calcite Substation Project

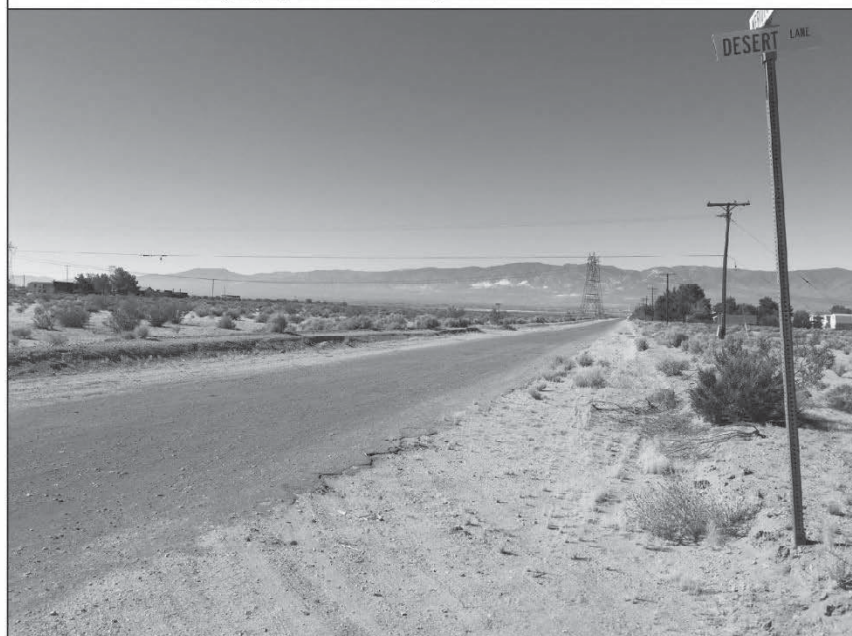
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Photography C: View looking northwest from Huff Road



Photograph D: View looking south from Desert Lane/Meridian Road

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Figure 4e
Offsite Vantage Points and Visual Elements
Ord Mountain Solar Energy Storage Project and Calcite Substation Project

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Photography E: View looking north from Desert Lane/Meridian Road



Photograph F: View looking south from project boundary to residential structure

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Figure 4f
Offsite Vantage Points and Visual Elements

Ord Mountain Solar Energy Storage Project and Calcite Substation Project

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Photograph G: View looking northeast from Fern Road toward existing transmission corridor



Photograph H: View looking northwest from Fern Road and SR-247 towards Calcite Substation site

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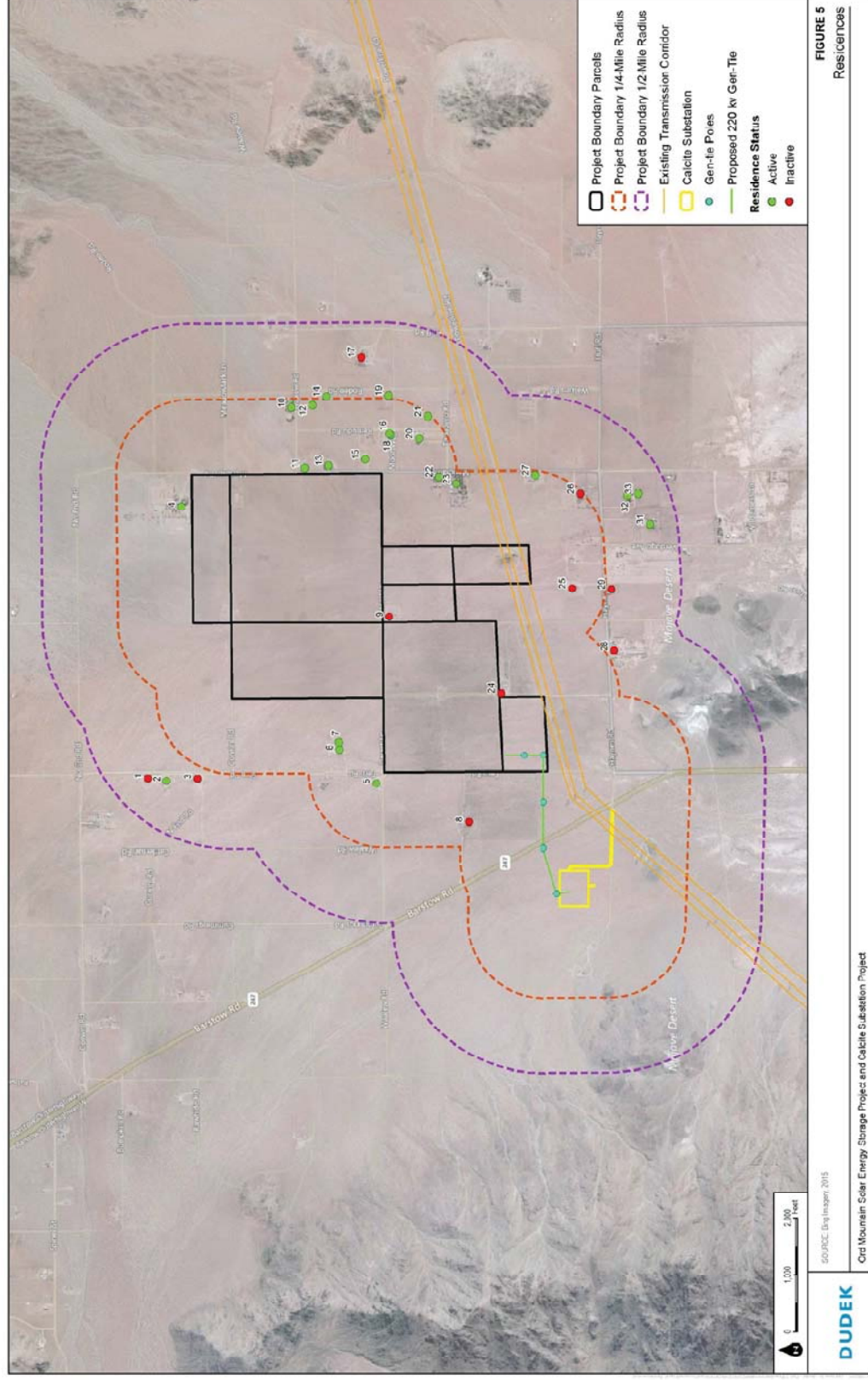
Figure 4g
Offsite Vantage Points and Visual Elements

Ord Mountain Solar Energy Storage Project and Calcite Substation Project

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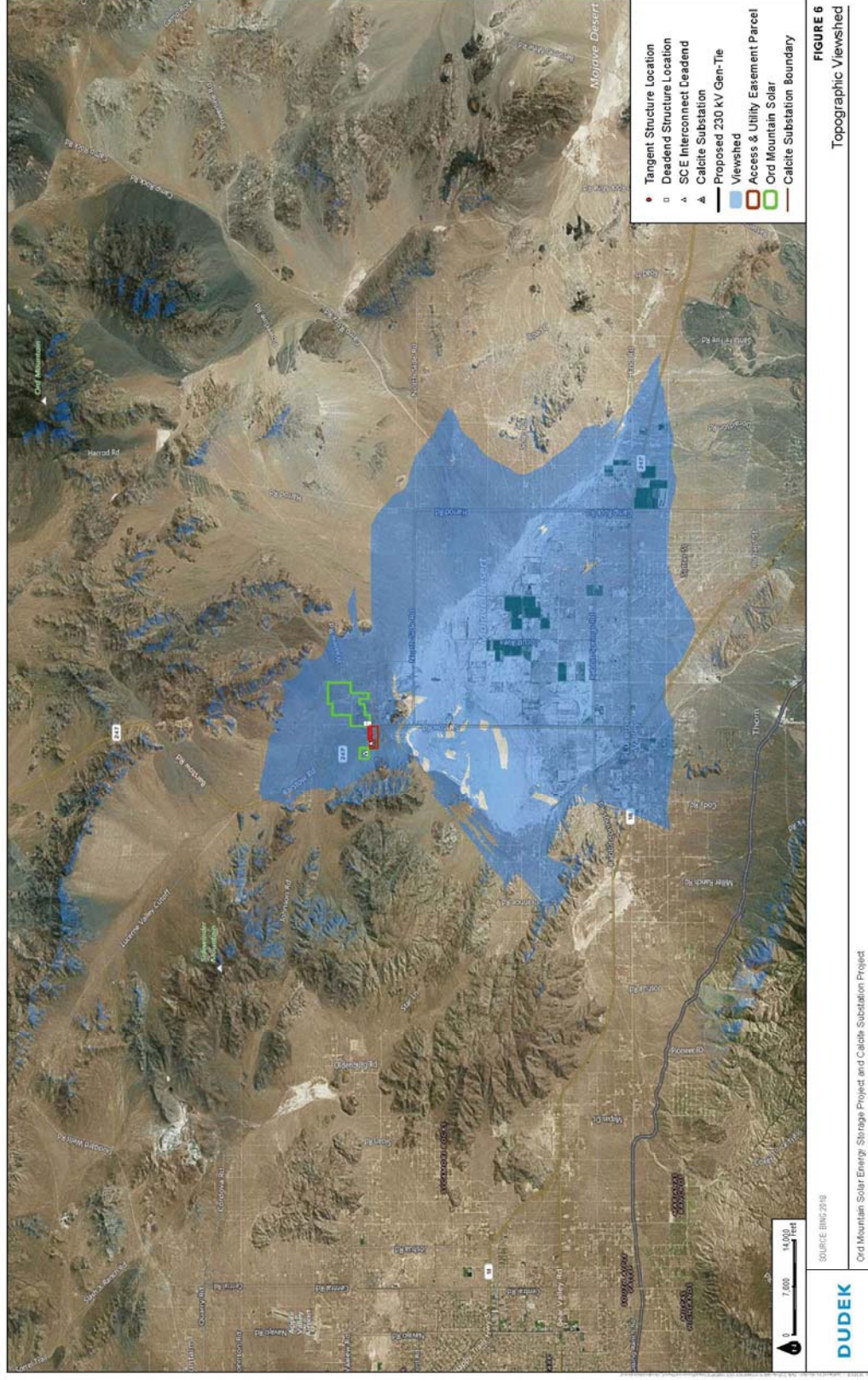
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Figure 7a

Key Observation Point 1 - Looking west from Meridian Road across the Project site

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Figure 7b
Key Observation Point 1 - Visual Simulation

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Figure 8a

Key Observation Point 2 - Looking northwest from Meridian Road toward Project site

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Figure 8b

Key Observation Point 2 - Visual Simulation

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Figure 9a

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Key Observation Point 3 - Looking southeast from intersection of Fern Road and Desert Lane toward Project site

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Ord Mountain Solar Energy Storage Project and Caloite Substation Project

Figure 9b
Key Observation Point 3 - Visual Simulation

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Figure 10a

Key Observation Point 4 - Looking east from SR-247 at Waalew Road toward Project site

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Figure 10b

Key Observation Point 4 - Visual Simulation

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Figure 11a

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Key Observation Point 5 - Looking Northwest From Haynes Road Toward Project Site

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Ord Mountain Solar Energy Storage Project and Calcite Substation Project

Figure 11b
Key Observation Point 5 - Visual Simulation

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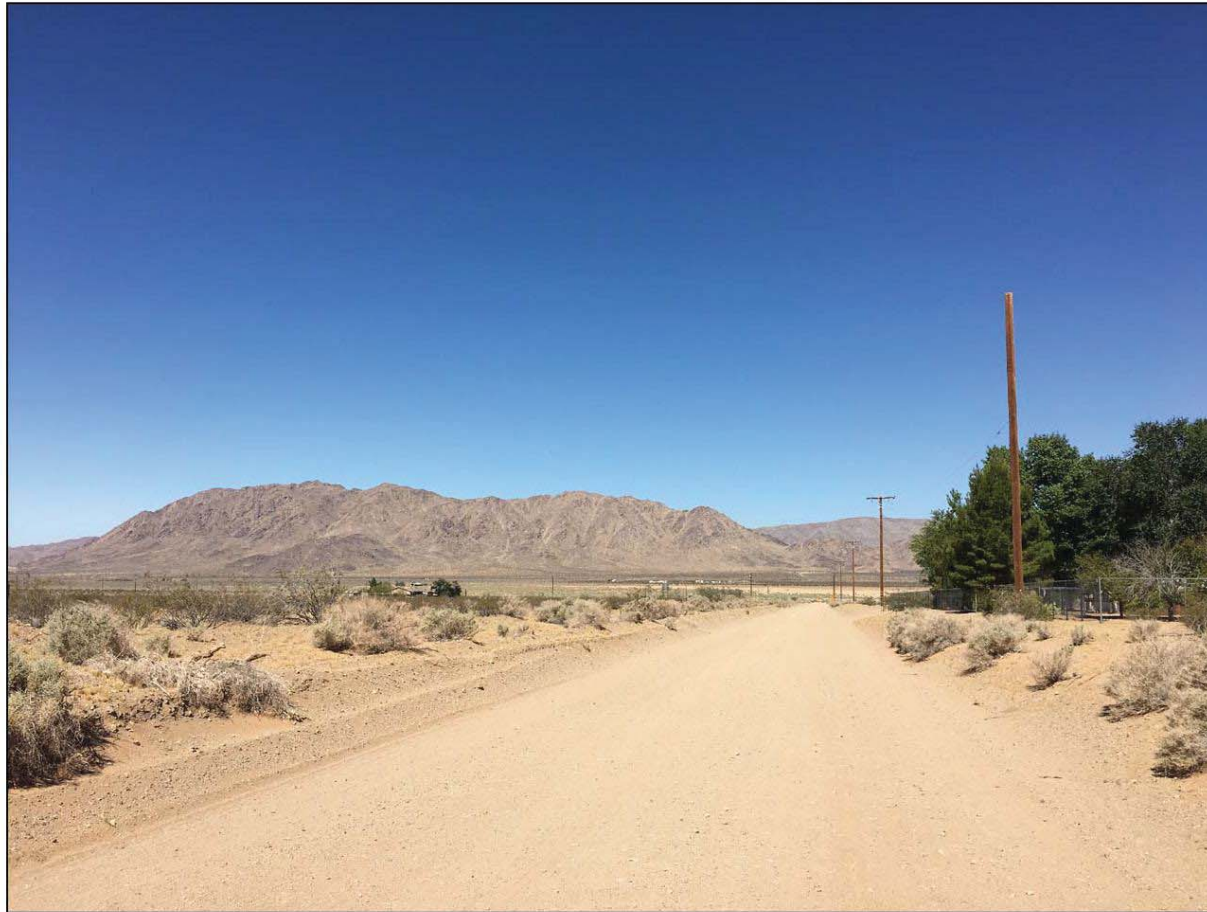


Figure 12a

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Key Observation Point 6 - Looking West From Waalew Road Near Rodeo Road Toward Project Site

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Ord Mountain Solar Energy Storage Project and Calcite Substation Project

Figure 12b
Key Observation Point 6 - Visual Simulation

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Figure 13a

Key Observation Point 7 - Looking southeast from SR-247 near Cummings Road toward Project site

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