

VISUAL RESOURCES TECHNICAL REPORT
Rugged Solar Project
Major Use Permit-3300-12-007
Environmental Review Project Number 3910-120005

Prepared for:

Rugged Solar LLC
c/o Soitec Solar Development LLC
4250 Executive Square, Suite 770
San Diego, California 92037
Contact: Patrick Brown

Prepared By:

DUDEK
605 Third Street
Encinitas, California 92024
Contact: Michael Sweesy, RLA

and

AECOM
1420 Kettner Boulevard, Suite 500
San Diego, California 92101
619.233.1454

DECEMBER 2013

Rugged Solar LLC Project Visual Resources Technical Report

TABLE OF CONTENTS

<u>Section</u>	<u>Page No.</u>
GLOSSARY OF TERMS AND ACRONYMS.....	III
EXECUTIVE SUMMARY	V
1.0 INTRODUCTION.....	1
1.1 Purpose of the Visual Resources Report.....	1
1.2 Key Issues	1
1.3 Principal Viewpoints to Be Covered.....	1
2.0 PROJECT DESCRIPTION	3
2.1 Land Use Designations and Zoning.....	12
2.1.1 Surrounding Land Uses.....	13
2.2 Regulatory Framework	14
2.2.1 Federal.....	14
2.2.2 State.....	14
2.2.3 Local	15
2.3 Design Policies and Guidance	16
3.0 VISUAL ENVIRONMENT OF THE PROJECT.....	17
3.1 Project Setting.....	18
3.2 Project Viewshed	19
3.3 Landscape Units.....	20
4.0 EXISTING VISUAL RESOURCES AND VIEWER RESPONSE	25
4.1 Existing Visual Resources	25
4.1.1 Visual Character.....	25
4.1.2 Visual Quality	26
4.2 Viewer Response	29
4.3 Key Views.....	29
4.3.1 Viewer Groups	59
4.3.2 Viewer Sensitivity.....	61
4.3.3 Viewer Exposure.....	61
4.3.4 Viewer Awareness	63
5.0 VISUAL IMPACT ASSESSMENT.....	65
5.1 Guidelines for Determining Significance	65
5.2 Assessment of Visual Character and Visual Quality	66
5.2.1 Assessment of Visual Character	66

Rugged Solar LLC Project Visual Resources Technical Report

TABLE OF CONTENTS

<u>Section</u>	<u>Page No.</u>
5.2.2 Assessment of Visual Quality	67
5.3 Assessment of Viewer Response	67
5.4 Determination of Significance	68
5.5 Cumulative Impacts	86
5.6 Summary of Project Impacts, Significance, and Conclusions	94
6.0 VISUAL MITIGATION AND DESIGN ALTERNATIVES	97
7.0 REFERENCES.....	99
8.0 PREPARERS.....	101

APPENDIX

A Photos of Land Uses in Project Vicinity

FIGURES

1	Regional Map.....	5
2	Vicinity Map	7
3	Site Plan	9
4	Project Area Viewshed Analysis and Landscape Character Units	21
5	Key View Locations Map	31
6	Key View 1 – Existing and Proposed Conditions.....	35
7	Key View 2 – Existing and Proposed Conditions.....	41
8	Key View 3 – Existing and Proposed Conditions.....	47
9	Key View 4 – Existing and Proposed Conditions.....	53
10	Cumulative Impacts Map.....	89

TABLES

1	Existing General Plan Land Use Designation and Zoning	13
2	Summary of Key View Locations.....	30
3	Summary of Viewer Exposure.....	63
4	Identified Residences within One-Mile of Solar Equipment – Rugged	82
5	Maximum Anticipated Glare by Season – Rugged.....	83
6	Maximum Anticipated Glare by Season – Rugged (Motorists).....	85
7	Summary of Visual Quality Ratings	96
8	Viewer Response Ratings	96
9	Summary of Visual Impact Ratings	96

Rugged Solar LLC Project

Visual Resources Technical Report

GLOSSARY OF TERMS AND ACRONYMS

AC	alternating current
ACEC	Area of Critical Environmental Concern
ADT	average daily trips
BLM	Bureau of Land Management
CEQA	California Environmental Quality Act
CPUC	California Public Utilities Commission
CPV	concentrated photovoltaic
DPLU	Department of Planning and Land Use
EIR	environmental impact report
EIS	environmental impact statement
FHWA	Federal Highway Administration
GIS	geographic information system
Key View	Key Viewpoint
kV	kilovolt
LCU	landscape character unit
MUP	Major Use Permit
MVA	megavolt ampere
MW	megawatt
NEPA	National Environmental Policy Act
O&M	Operations and Management
OHV	off-highway vehicle
PDF	project design feature
Project	Rugged Solar LLC Project
SCADA	supervisory control and data acquisition
SDG&E	San Diego Gas and Electric
sf	square foot

Rugged Solar LLC Project Visual Resources Technical Report

INTENTIONALLY LEFT BLANK

Rugged Solar LLC Project

Visual Resources Technical Report

EXECUTIVE SUMMARY

The Rugged Solar LLC Project (Project) is a concentrated photovoltaic (CPV) solar farm with an alternating current (AC) generating capacity up to approximately 80 megawatt (MW) AC. The 765-acre project site is located on County of San Diego jurisdictional lands north of Interstate 8 in Boulevard, California. The project site consists of multiple parcels that extend roughly 2 miles between Ribbonwood Road and McCain Valley Road in the McCain Valley. The Project would introduce approximately 3,588 CPV trackers that automatically adjust to follow sun exposure. CPV trackers would be grouped in building blocks of approximately 58 trackers, one pair of 680-kilovolt (kV) inverters, and a step-up transformer. The trackers and associated equipment would be located on a total of approximately 516 acres of the Project site, reserving approximately 248 acres of open space.

This report analyzes the potential effects of the Rugged Solar LLC Project on visual resources in accordance with the California Environmental Quality Act (CEQA). The methodology for assessment of visual effects from the Project was primarily based on the Federal Highway Administration's (FHWA's) Visual Impact Assessment, as well as on the Bureau of Land Management's (BLM's) Visual Resource Management and the U.S. Forest Service's Scenery Management System approaches to visual resources. The assessment was completed through an analysis of field-based photography, a review of a geographic information system (GIS)-based viewshed analysis conducted for Project features and Key Views, and visual simulations of the Project. This study also includes proposed measures to avoid, minimize, or mitigate adverse visual impacts associated with construction and operation of the Project.

Key Views have been selected by the County to evaluate the existing visual character and visual quality of a project area. The purposes of the Key Views are to understand the existing conditions, and assess the potential change in visual environment and potential viewer response to those changes. For visual assessment purposes, four Key Views were selected in the Project area: Key View 1 - Interstate 8 East, Key View 2 - McCain Valley Road, facing north, Key View 3 - McCain Valley Road, facing south and Key View 4 – Interstate 8 West. These Key Views were selected through a process of evaluation that prioritized the ability to simultaneously represent existing conditions and depict the proposed effects accurately by illustrating the typical visual experience of the primary viewer groups.

The level of visual impact at each Key View was determined by considering change in visual quality and viewer response. The resulting visual impact scores indicate a resulting level of impact and potential significance of impact on the overall visual setting. The evaluation

Rugged Solar LLC Project Visual Resources Technical Report

indicated that the Project would result in low to high visual resource impacts at the identified Key View locations.

In summary, due to the anticipated level of contrast between existing and proposed visual character and quality, the Project would result in low to high levels of visual impact and has been found to present potentially significant impacts under three of the four Guidelines for Determining Significance for Visual Resources. Additionally, the Project would contribute to the anticipated cumulative visual impacts within the McCain Valley viewshed specifically, thereby contributing to the larger-scale shift from a rural/semi-rural to developed lands comprised of renewable energy projects, which is anticipated within the viewshed along the Interstate 8 corridor. However, with the incorporation of Mitigation Measures outlined in Section 6.0 (see Mitigation Measure M-VIS-1, which include the installation of landscape screening/buffering to break up the mass and scale of the CPV trackers and block views of project components from critical viewpoints) it is anticipated that project-level impacts to visual resources would be reduced but not to a less than significant level.

Rugged Solar LLC Project Visual Resources Technical Report

1.0 INTRODUCTION

1.1 Purpose of the Visual Resources Report

This visual resources report assesses the potential effects of the Rugged Solar LLC Project (Project) on visual resources in accordance with the California Environmental Quality Act (CEQA) and the County of San Diego. This study also includes proposed measures to avoid, minimize, or mitigate adverse visual impacts associated with construction and operation of the Project.

1.2 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 urban features into natural areas. The loss or 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 considered significant adverse visual effects. The following elements of the Project have the potential to result in significant visual quality impacts:

- Vegetation clearing necessary for construction of the concentrated photovoltaic (CPV) solar farm and the potential visual contrast in line, color, and texture between the project site and surrounding areas,
- A 6,000 square-foot 34.5-/69-kilovolt (kV) on-site collector substation (the tallest structure within the facility (a dead end transmission line structure) would be approximately 35 feet tall) and the potential contrast in form and color with surrounding areas as well as compatibility of the proposed facility with existing land uses within the visual landscape,
- Grading and trenching activities that would entail of 455 acres of the 765-acre site being cleared to accommodate the underground collector cable system,
- Installation and operation of 3,588 CPV trackers (dimensions of each individual tracker would be approximately 30 feet tall and 48 feet wide) on 455 acres.

1.3 Principal Viewpoints to Be Covered

As outlined in the updated San Diego County General Plan (Conservation and Open Space Element), the segment of Interstate 8 from El Cajon city limits to the Imperial County line is a county-designated scenic highway. Although the Project site would be as close as 0.5 mile

Rugged Solar LLC Project Visual Resources Technical Report

from Interstate 8, views to the project site from the interstate are intermittent, brief, and partially obstructed by existing topography and cultural modifications. The Project would also be visible from several public roadways, including McCain Valley Road, which bisects the Project site and provides public access to the McCain Valley Conservation Area. Therefore, Key View locations from Interstate 8 and McCain Valley Road were selected to analyze the potential visual impacts of the Rugged Solar Farm project.

Rugged Solar LLC Project

Visual Resources Technical Report

2.0 PROJECT DESCRIPTION

The Project includes a Major Use Permit (MUP) to authorize a Major Impact Services and Utility Pursuant to Sections 1350, 2705, and 2926 of the Zoning Ordinance. The Rugged Solar Energy Project would produce up to 80 megawatts of alternating current (AC) solar generating capacity. The Project would consist of approximately 3,588 CPV electric generation systems utilizing dual-axis tracking CPV trackers on 765 acres in southeastern San Diego County in the unincorporated community of Boulevard, California (see Figure 1, Regional Map, and Figure 2, Vicinity Map). In addition to the CPV trackers and inverter transformer units, the Project includes the following primary components:

- A collection system linking the CPV trackers to the on-site Project substation composed of (i) 1,000-volt (V) direct current underground conductors leading to (ii) 34.5-kV underground and overhead AC conductors.
- A 7,500-square-foot (sf) (60 feet by 125 feet) operations and maintenance (O&M) building. The O&M building would be used for storage, employee operations, and maintenance of equipment
- A 2-acre on-site private collector substation site with a fenced pad area of 6,000 sf (60 feet by 100 feet) with maximum height of 35 feet and includes a 450-sf (15 feet by 30 feet) control house.
- 59 Inverter/Transformer enclosures. The dimensions of each inverter unit are 10 feet by 40 feet (400 sf each) with a total structure height of up to 12 feet.
- The Rugged solar farm would tie into the Tule Wind Energy project (Major Use Permit (MUP) 3300-09-019) gen-tie alignment as adopted by the Board of Supervisors on August 8, 2012. The 138 kV gen-tie for the Tule Wind Energy project would include a 69 kV undersling line to service the Rugged solar farm. Rugged Solar LLC and Tule Wind LLC have a joint-use agreement in place for use of the gen-tie line, associated transmission towers, and access road. There will be approximately 5,130 feet of 69-kV gen-tie line between the on-site substation and the Tule gen-tie at McCain Valley Road. Approximately 3,180 feet will be on site and 1,940 feet will be off site. The 50 to 125 feet tall steel poles, spaced up to 300 feet apart, will also support 34.5-kV overhead conductors.
- 20.5 miles of newly constructed load-bearing on-site access roads.
- 46.5 miles of graded, non-load-bearing dirt service roads.
- Three permanent on-site water wells for project construction, the O&M building and to facilitate washing of the CPV trackers.

Rugged Solar LLC Project Visual Resources Technical Report

- Two 20,000 gallon water storage tanks to be located at the O&M building and to be dedicated exclusively for fire suppression.
- Three additional on-site 20,000 gallon water storage tanks to support tracker washing. Each of these three 20,000 gallon water storage tanks would include 10,000 gallons of water dedicated solely for fire suppression. The outlet on the tank for tracker washing and any other non-fire uses would be located at the midpoint on the tank making it impossible to draw the water level down below 10,000 gallons in each tank for non-fire suppression use.
- A septic tank system and leach field for the O&M building.
- 6-foot perimeter fencing topped with an additional 1 foot of security barbed wire.
- Primary access to the Rugged site would be from Ribbonwood Road and McCain Valley Road. One roadway would be constructed off site from McCain Valley leading to the central subarea if Rough Acres Ranch Rd is not constructed per Rough Acres Ranch Major Use Permit (MUP) 3300-09-019. Access to the northwest subarea would be provided via Ribbonwood Road. The central subarea would also include an access road leading south crossing Tule Creek to provide access to the southern subarea. The eastern subarea would be accessible via an access road leading from McCain Valley Road crossing beneath the Sunrise Powerlink.

The Proposed Project includes a total installation of 3,588 CPV trackers installed in groups or “building blocks” composed of approximately 59 individual Soitec Concentrix™ CX-S530 systems (includes dual-axis tracker), with any of the following inverter combinations: two 630-kW inverters, two 680-kW inverters, or three 680-kW inverters; and either a 1.5- or 2.0-megavolt ampere (MVA) transformer. The Project site plan is depicted on Figure 3, Site Plan.

Individual tracker dimensions are approximately 48 feet across by 25 feet tall. Each tracker would be mounted on a 28-inch-diameter steel post, likely to be integrated into a concrete foundation designed to suit the on-site soils, and surface and subsurface conditions and materials. In its most vertical position, the top of each tracker would be no more than 30 feet above grade, and the lower edge would be no less than 1 foot above the ground. In its horizontal “stow” mode (for high winds), each tracker would have a minimum ground clearance of 13 feet, 6 inches. Solar panels would be mounted on the surface of each tracker.

A solar resource and meteorological measurement station may be installed on the site to inform the Supervisory Control and Data Acquisition (SCADA) system as part of the overall Project monitoring and equipment operation.



Source: Soitec 2011; AECOM 2011; ESRI 2011

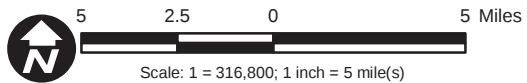


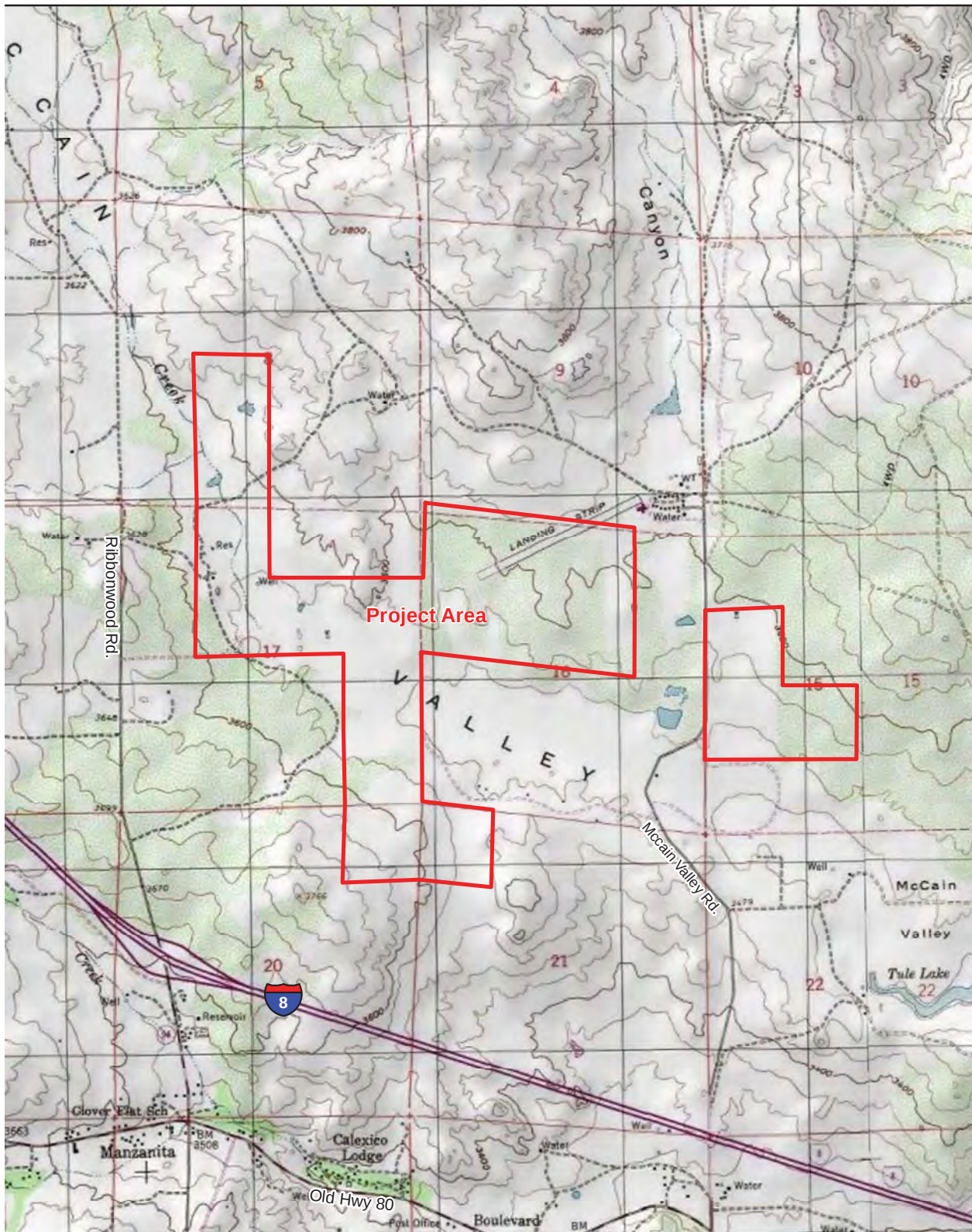
Figure 1
Regional Map

Rugged Solar Farm LLC Project - Visual Resources Technical Study

Path: \\ussdg2fp001\data\Projects\2011\11280175.01_Concentrix_S\06GIS\6.3_Layout\Reports\LandUse\Rugged\RegionalMap.mxd, 2/17/2012, HarrisT

Rugged Solar LLC Project Visual Resources Technical Report

INTENTIONALLY LEFT BLANK



Source: USGS; Soitec 2011; AECOM 2011

Live Oak Springs USGS Quadrangle, San Diego County

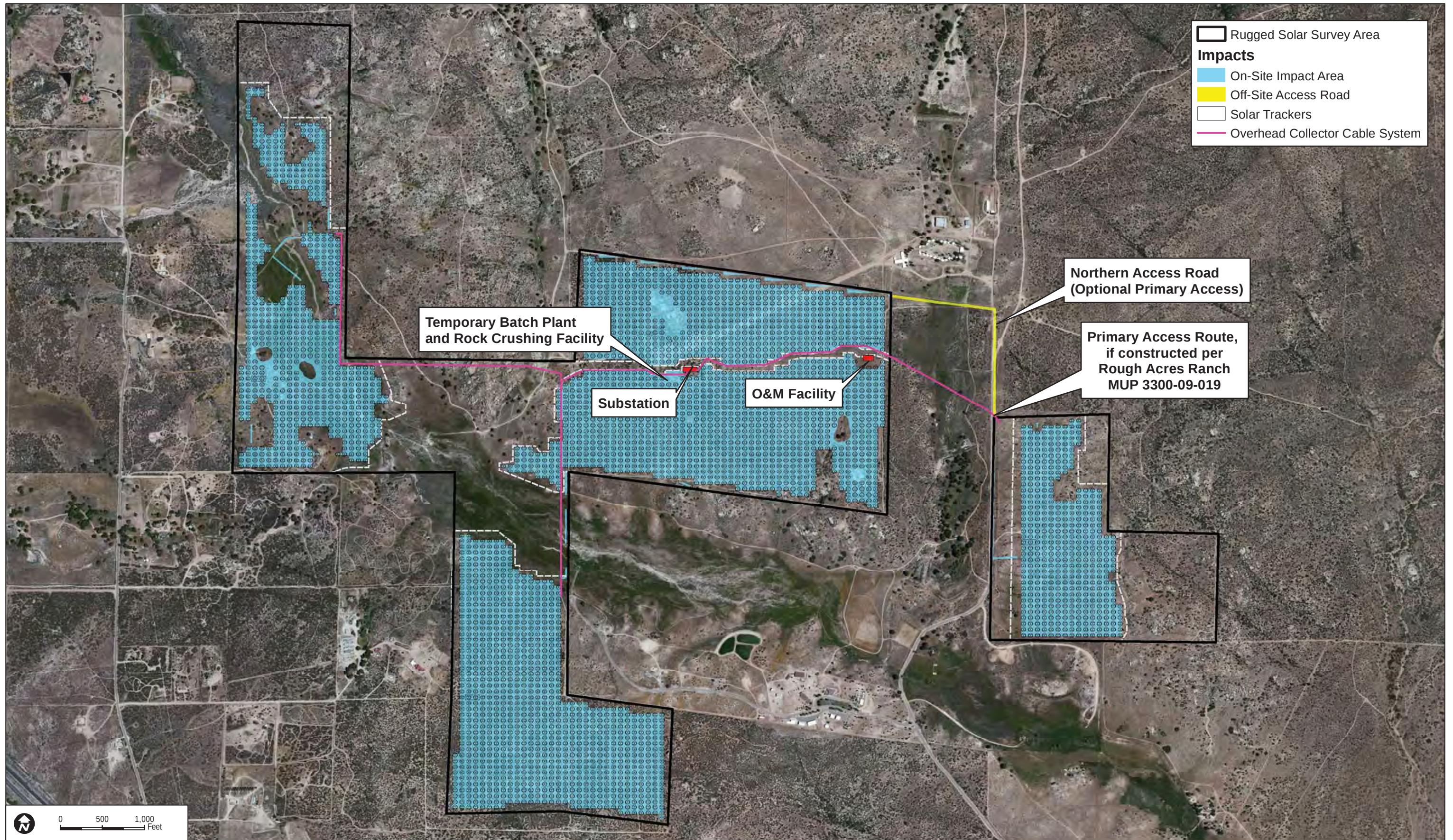
Figure 2
Vicinity Map

Rugged Solar Farm LLC Project - Visual Resources Technical Study

Path: \\ussdg2fp001\data\Projects\2011\11280175.01_Concentrix_S\06GIS\6.3_Layout\Reports\LandUse\RuggedVicinityMap.mxd, 2/17/2012, HarrisT

Rugged Solar LLC Project Visual Resources Technical Report

INTENTIONALLY LEFT BLANK



INTENTIONALLY LEFT BLANK

Rugged Solar LLC Project Visual Resources Technical Report

The Project requires the construction of a 6,000-sf (60 feet by 100 feet) private on-site collector substation that would be located within the central portion of the Project site. The substation site would be located approximately 0.5 mile west of the O&M building on the Project site. The purpose of the substation is to collect the energy received from the overhead and underground collector system and increase the voltage from 34.5 kV to 69 kV. Once the voltage is stepped up to 69 kV, the power would be conveyed through a 35-foot-high dead-end structure that connects the gen-tie within the on-site collector substation. The power is then conveyed through the gen-tie line to the proposed Tule Wind LLC gen-tie line, as a shared facility to minimize impacts, that would deliver power to the new Rebuilt Boulevard Substation.

The major components of the on-site substation are as follows:

- One 52.8/70.4/88-MVA rated step up transformer. The cooling system for the transformer is as follows: Oil Assist, Fan Assist, Fan Assist (OA/FA/FA), respectively.
- One circuit breaker used to protect equipment from an electrical short circuit.
- One disconnect switch.
- Wire, cables, and aluminum bus work used to connect and isolate the major pieces of equipment.
- The substation also includes a 450-sf (15 feet by 30 feet) control house that contains relays used to detect short circuits, equipment controls, communication equipment used to monitor system performance remotely, and the meters used to measure electrical power generated from the Project.
- The tallest structure within the substation boundaries will be the 69-kV dead-end structure that has a maximum height of 35 feet.

In addition to the substation, an O&M building is located at the north-central portion of the Project site approximately 0.5 mile east of the on-site private substation. The O&M building would be used for storage, employee operations, and maintenance of equipment. The O&M facility would consist of a 7,500-sf building. The building would include administrative and operational offices and meeting facilities, material storage and equipment warehouse, and lavatory facilities served by a private on-site septic system and groundwater well. The building would be surrounded by an improved parking area and parking spaces. The building and parking areas would include security lighting designed to minimize light pollution and preserve dark skies, while enhancing safety, security, and functionality.

Rugged Solar LLC Project

Visual Resources Technical Report

Project Construction

Construction of the Proposed Project would involve selective clearing and grubbing of vegetation, some grading, construction of CPV foundations, trenching for the electrical collection system and communication lines within each building block, installation of a small concrete footing at each pair of inverters, construction of the small switch station, and installation of the short 12.5-kV dedicated gen-tie line from the switch station to the Boulevard Substation.

The construction period would be 12 months and add approximately 160 average daily trips (ADT) to the local roadway system. Construction staging and material laydown areas would be distributed across the Project site evenly to allow for efficient distribution of components to different parts of the Project. One staging and material laydown area is typically set up for every 250 acres of a project site.

Trackers would be assembled on-site. Recycling during construction would be in compliance with the County of San Diego Construction Demolition and Debris Management Plan requirements (in accordance with County Ordinance 68.508-68.518).

Project Operations

Operations of the Project would entail real-time monitoring of the Project through the SCADA system using on-site sensors. The SCADA system would enable the tracker control system to maintain orientation toward the sun. At night, the trackers would be positioned vertically to minimize dust collection. At all times, however, when winds are high, the trackers would be positioned in a horizontal “stow” mode.

On-site operations would include in-place panel washing every 6–8 weeks by mobile crews who would also be available for dispatch whenever on-site repairs or other maintenance is required. Panel washing would be undertaken using an IPC Eagle Wash Station which would be towed by a pick-up, ATV or Cushman electric cart. Traffic generation during the operations and maintenance phase of the Project would be 40 ADT.

2.1 Land Use Designations and Zoning

The Project site is located on privately owned land in an unincorporated area of San Diego County north of the United States/Mexico border and the community of Boulevard. General Plan land use designations and zoning for the affected parcels are identified in Table 1, below. While the individual parcels comprising the site are vacant and do not contain structures, the project site is currently used for grazing. The project does not propose to change the existing land

Rugged Solar LLC Project Visual Resources Technical Report

use designation or zoning applicable to the site to accommodate the proposed solar farm development (major impact services and utilities are subject to a major use permit within the A72 and S92 zoning designations).

Table 1
Existing General Plan Land Use Designation and Zoning

Assessor Parcel Number	Approximate Acreage	General Plan Land Use Designation	Zoning
611-110-01-00	123.85	Rural Lands (RL-80)	General Agriculture (A72)
611-100-07-00	228.11	RL-80	General Rural (S92)/A72
611-090-04-00	83.54	RL-80	S92
611-091-03-00	41.78	RL-80	S92
611-090-02-00	82.21	RL-80	S92
611-060-04-00	79.87	RL-80	S92
611-091-07-00	42.00	RL-80	S92
612-030-19-00	43.44	RL-80	S92
612-030-01-00	40.25	RL-80	S92

2.1.1 Surrounding Land Uses

Existing land uses in the surrounding area include Rough Acres Ranch, public agency and tribal lands designated and planned for renewable energy development, and lands designated rural by the County of San Diego General Plan. Rough Acres Ranch consists of open and disturbed grazing lands, boulder outcrops, sparse chaparral vegetation, a large construction yard, a conference center, and several agricultural-supporting structures such as barns and bunkhouses located adjacent to McCain Valley Road supporting ranch operations. Public Agency Lands consist of the McCain Valley Conservation Camp (a rural prison camp managed jointly by CAL FIRE and the California Department of Corrections and Rehabilitation located south of Rough Acres Ranch) and undeveloped lands managed by the BLM that are generally located north of Rough Acres Ranch and east of McCain Valley Road. Development on County rural lands surrounding the project site is relatively sparse and consists of scattered rural residences situated on large, chaparral-strewn lots bisected by narrow dirt roadways. Rural residential development in the immediate area is generally located south and accessed on private roads linking to McCain Valley Road close to Interstate 8, and west of the project site, as accessed off of Ribbonwood Road. Prominent cultural modifications in the area consist of the tall, geometric form of existing transmission structures associated with the 500 kV Sunrise Powerlink. Several of these towers are directly adjacent to Interstate 8, and the line of towers winds its way up McCain Valley Road, a roadway that exudes a linear but at times sinuous form and consists of both paved and unpaved surfaces.. The visibility of the transmission line and McCain Valley Road is often

Rugged Solar LLC Project

Visual Resources Technical Report

broken or intermittent due to distance and intervening topography north of the project area. In addition, the Kumeyaay Wind Farm, a prominent row of 25 wind turbines, is present on the western rim of the McCain Valley. This renewable energy project is visible from many locations within the valley and on Interstate 8 east- and west-bound lanes. The ridge top location of these large, white colored turbines adds additional visual prominence to these features that introduce motion to an otherwise stationary landscape.

2.2 Regulatory Framework

2.2.1 Federal

There are no relevant federal policies concerning the protection of visual resources that would be applicable to a solar farm development located on County of San Diego jurisdictional land.

2.2.2 State

California Environmental Quality Act (CEQA)

Under CEQA, impacts to aesthetic resources resulting from a project must be considered by state and local agencies. Appendix G of the CEQA Guidelines includes a series of questions that agencies may use when assessing the potential aesthetic impacts of a proposed project. The questions, which identify scenic vistas, trees, rock outcroppings, and historic buildings within a state scenic highway system as important scenic resources, often formulate the impact analysis within the relevant environmental document accompanying a project.

Appendix G of the CEQA Guidelines states that the potential for aesthetic resource impacts exists if the project would:

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

Rugged Solar LLC Project

Visual Resources Technical Report

California Scenic Highway Program

The California Scenic Highway Law created the California State Scenic Highways Program to preserve and protect scenic highway corridors from change that would diminish the aesthetic value of adjacent lands. The program was established by the state legislature through Senate Bill 1467 in 1963. This bill established the scenic highway advisory committee as the state's primary policy body for recommending program criteria to be used in reviewing local applications and recommending approval of official scenic highway designations. Its purpose is to protect and enhance the natural scenic beauty of California highways and adjacent corridors through special conservation treatment. The state laws governing the scenic highway program are found in the Streets and Highways Code, Sections 260 through 263.

Portions of the Project facilities are intermittently visible from Interstate 8, which is an eligible state scenic highway, although it is not officially designated (Caltrans 2011). Analysis of project visibility indicates that approximately 7% of the project perimeter and 9% of the project features would be visible from westbound Interstate 8 lanes. Approximately 11% of the project perimeter and 40% of the project features would be intermittently visible at a low view angle from eastbound Interstate 8 lanes. A formal corridor study has not been prepared and corridor protection measures (i.e., land use controls, grading requirements) that would apply to development projects occurring within the Interstate 8 viewshed have not been adopted by the County of San Diego (these efforts are required in order for Caltrans to consider a nomination from a local jurisdiction for a officially designated state scenic highway).

2.2.3 Local

San Diego General Plan

The San Diego County General Plan, adopted in August 2011, directs future growth in the unincorporated areas of the county using an environmentally sustainable approach to planning that balances the need for adequate infrastructure, housing, and economic vitality with maintaining and preserving each unique community, agricultural area, and extensive open space. The General Plan includes specific goals and objectives for visual and energy resources, which can be found in the Conservation and Open Space Element of the General Plan (County of San Diego 2011b). Please refer to the Rugged Solar General Plan Analysis Report that was prepared by County staff. This report details how proposed project complies with the County's General Plan, the Mountain Empire Subregional Plan, and the Boulevard Community Plan.

San Diego County Zoning Ordinance

The provisions of Sections 5000 through 5964 of San Diego County's Zoning Ordinance, also known as the Special Area Regulations, set forth regulations to ensure that consideration is

Rugged Solar LLC Project Visual Resources Technical Report

provided for areas of special interest or unusual value. When Special Area Regulations require the issuance of a Minor Use Permit or a Major Use Permit, such permits are only issued when the proposed use satisfies all conditions and requirements of the Special Area Regulations and is found consistent with the intent and purpose of the applicable Special Area Regulations. The Special Area Regulations and associated Zoning Ordinance Sections that apply to the Project include Scenic Area (S), Sections 5200–5212.

The provisions of Sections 6000 through 6991 of San Diego County’s Zoning Ordinance outline the general zoning regulations and include a few regulations regarding glare and outdoor lighting. Sections of the general regulations applicable to the Project include 6320, 6322, and 6324 (County of San Diego 2011c).

Finally, Section 6952 of the County’s Zoning Ordinance regulates Solar Energy Systems. Section 6952 (b) (2) specifies that a photovoltaic solar energy system for off-site uses with a project area greater than 10 acres is considered a Major Impact Service and Utility within all zones and requires a Major Use Permit. In addition, Section 6952 (3) (c) specifically relates to visual resources and requires that the following measures be implemented to minimize the visual impacts of a project:

- Removal of existing vegetation shall be minimized;
- Internal roads shall be graded for minimal size and disruption;
- Any accessory buildings shall be painted or otherwise visually treated to blend with the surroundings; and
- A structure shall be non-reflective in all areas possible to blend with the surroundings.

San Diego Light Pollution Code

The San Diego Light Pollution Code (Dark Skies Ordinance) restricts outdoor lighting to protect dark skies and astronomical research. San Diego County is divided into two zones: Zones A and B. Zone A is the area within a 15-mile radius of the Palomar and Mount Laguna Observatories. The rest of the county is within Zone B. Zone A has more stringent lighting restrictions to preserve the ability to view the sky from the observatories. The Project site would be located in Zone B, which has fewer stringent lamp type and shielding requirements (County of San Diego 1986).

2.3 Design Policies and Guidance

Please refer to the Rugged Solar General Plan Analysis Report that was prepared by County staff. This report details how proposed project complies with the County's General Plan, the Mountain Empire Subregional Plan, and the Boulevard

Rugged Solar LLC Project Visual Resources Technical Report

3.0 VISUAL ENVIRONMENT OF THE PROJECT

The proposed Rugged Solar Farm site is located in the McCain Valley, which is generally characterized by shallow valleys, low rounded ridgelines, and chaparral-covered hills dotted with exposed granitic boulders. The project site consists of relatively flat to gently sloping land and a variety of vegetation communities are present including (but not limited to) chaparral, sagebrush and willow scrub, wildflower fields, oak woodlands, nonnative vegetation, and alkali and freshwater seeps (refer to the Biological Resources Technical Report for a detailed assessment of the on-site vegetation communities). The varied vegetation on site exhibits tall and spreading and short and upright forms and colors range from dark to light green that eventually transition to dull hues of yellow and brown during the dry season. The on-site vegetation displays a typical coarse and patchy texture and vegetative coverage varies across the site (the project site is currently used for grazing). Views from the Project site are panoramic with the Laguna, In-Ko-Pah, and Jacumba Mountains visible in the distance to the west, north, and east, respectively.

The Project site does not exhibit vegetation continuity due to the large number of cover types within the area. In addition, there are several cultural modifications located throughout the area that interrupt the continuous natural landscape. These modifications include roads within the site, existing fencing and rural residences, ranching and grazing, and large steel lattice towers and a staging area associated with the 500 kV Sunrise Powerlink Project. Rural residences are generally located west and southwest of the project site with access from Ribbonwood Road and private roads connecting to McCain Valley Road north of Interstate 8. The staging area for construction of the Sunrise Powerlink Project is situated in middle of the visual corridor and occupies parts of the project site.

There are three prominent cultural modifications present in the McCain Valley: transportation infrastructure represented by Interstate 8, the recently completed Sunrise Powerlink 500kV transmission line, and wind turbines associated with the Kumeyaay Wind Farm (Campo Native American reservation).

Completed in 1967, Interstate 8 is highly visible as it traverses the southern extent of the McCain Valley in a general east-west direction. The freeway provides interstate connection to Arizona and points east as well as local access. A San Diego County-designated scenic highway between the El Cajon city limit and the Imperial County line, Interstate 8 is located south of the proposed project site and motorists would be afforded brief and partially obstructed views of the Rugged Solar Farm (refer to Section 4.2.3, Viewer Exposure).

Sunrise Powerlink transmission line traverses the Project area and McCain Valley from north to south on the eastern edge of the McCain Valley. This transmission features consist of tall 500 kV lattice towers with three sets of transmission line and insulators attached. Each tower

Rugged Solar LLC Project Visual Resources Technical Report

has a separate graded access road and cleared area around the tower base. The transmission line is situated within a 100-foot wide right-of-way that remains vegetated except at towers as described. The towers present a commanding presence to Interstate 8 motorists. Approaching from the south, two steel lattice towers flank the freeway and multiple transmission lines span the freeway in the foreground. Some lines with orange and white balls that are designed for airplane safety and appear to float in the sky. Eastbound travelers along Interstate 8 are also afforded views of the Sunrise Powerlink in the middleground viewing distance that are generally located below the horizon line. In these views, the lattice towers tend to blend into the background landscape, an effect that reduces the contrast of these towers with the surrounding landscape.

The 50-megawatt Kumeyaay wind farm on the Campo reservation consists of 25 wind turbines that are situated on the western rim of the McCain Valley. Each turbine is approximately 400 feet tall measured from the ground surface to the tip of the blade. The white towers contrast with the blue sky and are generally viewed on the horizon line, juxtaposed with the sky. Foreground, middle- and background views of these structures are gained from Interstate 8 east- and westbound lanes, and viewed in the background from locations in the McCain Valley. Westbound motorists experience unobstructed views of the turbine structures for 1.7 minutes at distances from 1.9 miles to 0.1 mile. Similarly, eastbound traffic can view the turbines for 2.2 minutes at distances from 2.4 miles to 0.12 mile. The circular motion of the blades contrasts with the otherwise stationary landscape in which travelers move.

South of the Project area is the community of Boulevard, which maintains a rugged rural character. Boulevard is primarily comprised of modest single-family residences on large lots, expansive natural and undeveloped areas, and a small commercial corridor along Old Highway 80. Existing electric transmission and generation structures/facilities (i.e., the 500 kV Southwest Powerlink and the existing SDG&E Boulevard Substation) are located in the Boulevard area and contribute energy infrastructure features to the existing visual environment. The existing U.S. Customs and Border Patrol Boulevard Station is located south of and adjacent to Interstate 8. A new, expanded station was recently constructed on Ribbonwood Road just north of Interstate 8. A California Highway Patrol station is located at Ribbonwood Road and Old Highway 80 in Boulevard. These law enforcement facilities contrast with the rural character of the Boulevard area. The visual and community character of the project and surrounding areas is illustrated in Attachment A of the Rugged Solar Project Community Character and Land Use Consistency Analysis.

3.1 Project Setting

The Proposed Project is located in the southeastern portion of San Diego County near the convergence of the Peninsular Ranges and western Colorado Desert region in the unincorporated

Rugged Solar LLC Project Visual Resources Technical Report

community of Boulevard. The Project site is within the eastern portion of the California Peninsular Ranges, which are located to the south and east (elevations in the project vicinity range from 3,000–5,000 feet above mean sea level). The Peninsular Ranges are characterized by steep mountain slopes that are typically covered with granite boulders and chaparral vegetation on the western slopes, evergreen and temperate forests at and near the peaks, and desert chaparral on the eastern slopes. Mountain areas in the vicinity are primarily undeveloped however; lower elevation valley areas contain scattered rural development. Scenic resources are plentiful and include large open spaces such as the Cleveland National Forest located west of the Project site and BLM-managed lands located north of the Project site. BLM lands are designated as an Area of Critical Environmental Concern (ACEC). Elevations within the desert region range from sea level to more than 3,500 feet above mean sea level, and the terrain includes mountains, alluvial fans, and desert floor. The desert region provides expansive views characterized by dramatic landforms, native desert habitat, and low desert valleys.

3.2 Project Viewshed

The Project site is located on relatively flat to gently sloping land within McCain Valley and the Project viewshed is enclosed by higher ridgeline elevations to the west, north, east, and south (see Figure 4, Project Area Viewshed Analysis/Landscape Character Units). The Project area viewshed encompasses a relatively wide swath of land comprising the shallow bottom of McCain Valley and up to the surrounding ridgelines. While the western extent of the viewshed is defined by higher elevations lands rising to the Tecate Divide, the eastern extent is defined by the In-Ko-Pah Mountains. Similarly, the northern extent of the viewshed is defined by the In-Ko-Pah Mountains and the southern extent is limited by sloping terrain located south of Boulevard.

In addition to existing renewable energy/transmission projects, the Project area includes scattered rural residential development and undeveloped chaparral-strewn open space lands. According to the U.S. Census, the densest population center in the area, the community of Boulevard (which encompasses the areas of Manzanita, Live Oak Springs and Tierra del Sol), had a population of 315 in 2010. Old Highway 80 is Boulevard's and the surrounding area's primary thoroughfare and commercial corridor.

The overall landscape is typical of San Diego backcountry areas with relatively undisturbed mountain slopes and historic and contemporary development in valleys. The subject landscape exhibits a diverse vegetative cover that includes several chaparral communities that create a uniform cover over mountain slopes and undisturbed open space areas. Valley bottoms support other vegetation communities including flat-topped buckwheat and big sagebrush scrub. Non-native grasslands and open wetland meadows characterize valley bottoms north of Interstate 8 along with stands of coast live oak and occasional pine trees. In addition to grazing activity, the

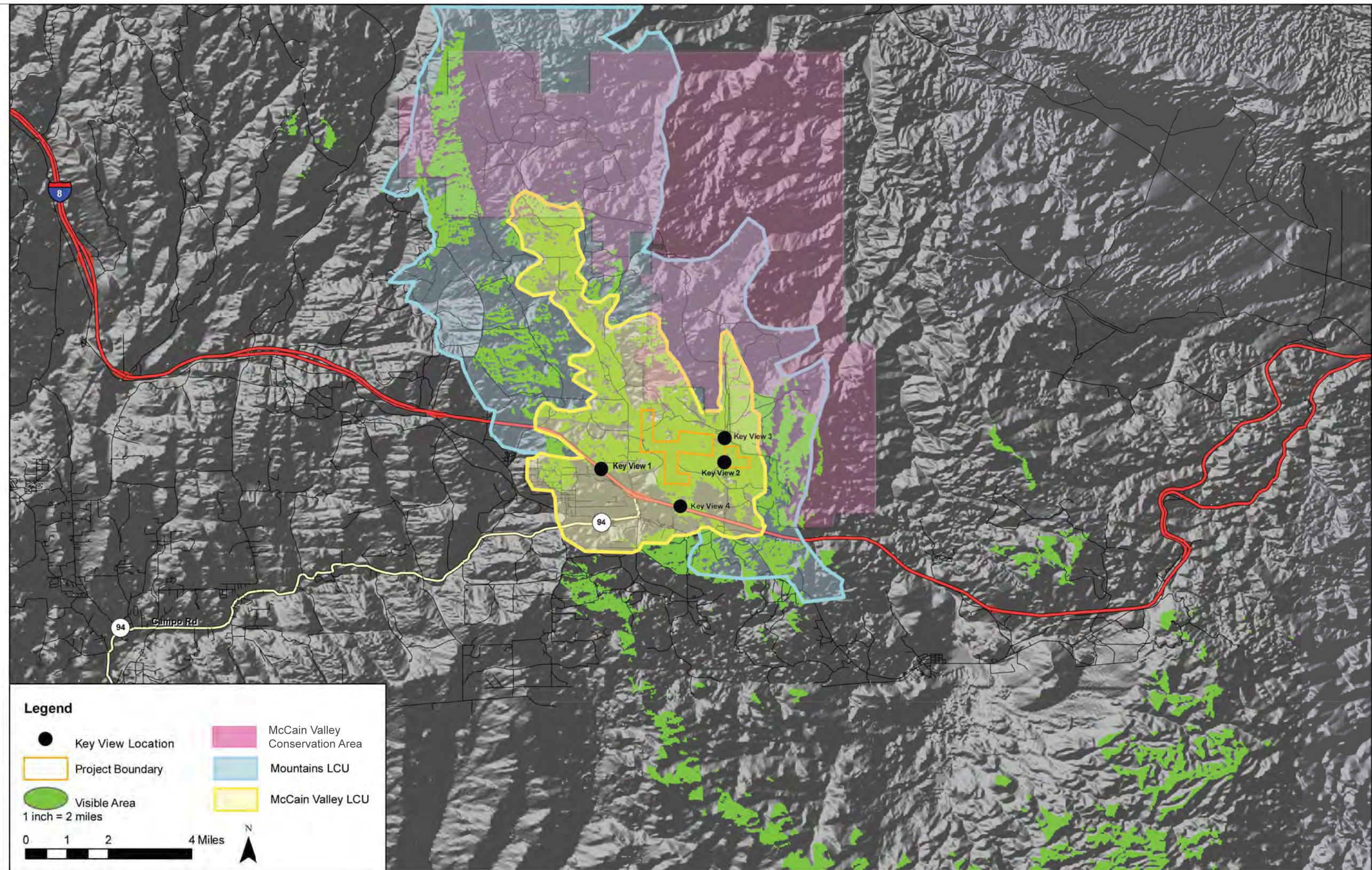
Rugged Solar LLC Project Visual Resources Technical Report

availability of friable soil and water (surface and subsurface) in the area typically determines the density of vegetation cover. The vegetation cover in combination with granite boulder outcrops produces a landscape of grey-green color, coarse textures, and rugged contrasting forms. The western portion of the viewshed has a coarse texture and is primarily dominated by patchy, scattered chaparral vegetation and the exposed granite-colored soils of numerous access roads. In contrast, the eastern portion of viewshed (which also exhibits a relatively coarse texture) features relatively dense strands of chaparral vegetation on distant, sloping terrain.

For purposes of this study, the project viewshed extends approximately 6 miles from east to west at its widest point. Local topography restricts the viewshed to the north, east, and west. More distant vistas to the south are available to Interstate 8 travelers. Within the general viewshed area are pockets where project views are obscured by vegetation and topography. For example, little project visibility exists on Ribbonwood Road (south of Interstate 8 and north of Old Highway 80). In addition, meteorological conditions reduce visual acuity such that at distances greater than 2 miles, the visual detail of transmission structures associated with the existing 500 kV Southwest Powerlink transmission line is greatly reduced; these elements would be definite (but not prominent) and do not register as a significant portion of the total landscape. Existing low voltage transmission structures also tend to blend into the landscape as distance from the viewer increases due to vegetation and topography. The longest views of the project site tend to be available from elevated positions along roadway corridors (i.e., Interstate 8 and McCain Valley Road), however views of the project site from the Interstate 8 corridor tend to be intermittent, brief, and partially obscured by existing topography and development. In addition, panoramic views and visual interest in the project area including long, expansive valleys located west of Boulevard, the distant Sierra de Juarez (to the south and east) and the Laguna Mountains to the north of Boulevard, as well as the prominent, vertical form of wind turbines associated with the existing Kumeyaay Wind Farm and steel lattice structures associated with the 500 kV Sunrise Powerlink Project also demand attention from motorists along Interstate 8 through the Project area.

3.3 Landscape Units

A landscape character unit (LCU) is a portion of the regional landscape that can be defined as a cohesive visual unit that exhibits consistent elements and features that create a unified view. The underlying topographic form, vegetation type and coverage, and existing land uses (or absences thereof) combine to create an outdoor room (landscape unit) with a distinct visual character. Slope types, watershed ridges, and other physical elements serve to divide one LCU from another. The lines that divide LCUs may be abrupt and obvious or less distinct and transitional. Two individual LCUs have been identified in the Project viewshed and the extent of each LCU is depicted on Figure 4.



Source: Soitec 2012; AECOM 2012; USGS 2011

Figure 4
Project Viewshed Analysis / Landscape Character Units

INTENTIONALLY LEFT BLANK

Rugged Solar LLC Project

Visual Resources Technical Report

Mountains LCU

Several mountain ranges bound the Project area, including the Laguna Mountains to the west and the In-Ko-Pah and Jacumba Mountains to the north and east. These broad mountain ranges are characterized by domed to pyramidal ridges and intervening valleys. The mountains in this unit range in elevation from approximately 3,000 to 4,500 feet and enclose the McCain Valley, including the Project area. Cultural modifications or other human disturbances are minimal in the Mountain LCU, likely because of topographical constraints, though the Interstate 8 highway corridor and other roads do bisect the unit.

In addition to Interstate 8 and other roads, the existing Kumeyaay Wind Farm along the Tecate Divide, approximately 2.25 miles from the Project site, is also visible from certain vantage points in the McCain Valley and for westbound travelers on Interstate 8.

The silhouette of the domed to pyramidal ridgelines in this LCU is distinct (against the sky), while the transition between the mountains and adjacent McCain Valley LCU (see below) is less distinct. The boundary between the Mountains LCU and McCain Valley LCU is primarily characterized by transitional slopes, periodic rock outcrops, and slight variations in vegetation density (the mountains tend to be more sparsely vegetated). The texture of the Mountain LCU is moderately coarse, with some smooth patches formed by breaks in the vegetation and rock outcrops. Colors in this LCU tend to be muted, with tans, grays, and greens of vegetation and exposed soils dominating the unit.

The Interstate 8 highway corridor is the dominant human modification on the landscape in the Project area. This transportation infrastructure is a split four-lane highway corridor; two travel lanes in each direction that are grade separated with a variable width median, appears as a smooth, flat, linear feature that creates a highly prominent break in the natural vegetation of the LCU, while the drab gray color of the highway generally fits within the more muted color palette of the surrounding area, its extremely smooth texture contrasts with the more highly textured (stippled) vegetation and boulders that are characteristic of the Mountain LCU. In addition, road cuts support limited vegetation and the exposed light colored granitic soil tend to contrast with adjacent vegetated areas.

McCain Valley LCU

The McCain Valley LCU is characterized by low, rolling chaparral hills, with some boulders and other rock outcrops dotting the landscape. The vegetation generally consists of low shrubs, grasses, and other typical desert species. Large oak trees add a vertical dimension to a landscape that is otherwise dominated by low vegetation. The area to the north of Interstate 8

Rugged Solar LLC Project Visual Resources Technical Report

tends to be characterized by open, rocky range land that is occasionally broken by cultural modifications (e.g., roads, transmission lines, etc.), while the area to the south of Interstate 8 is more pastoral, less rugged, and includes the community of Boulevard. Colors in the unit tend to be muted and dominated by shades of tan and green, although some vibrancy is introduced from reds, oranges, and other warm colors resulting from seasonal changes in vegetation.

The visual texture of the McCain Valley LCU ranges from smooth to moderate, depending on vegetation type and density, as well as the presence of (or lack of) rock formations and outcrops. Tule Wash cuts diagonally across the McCain Valley LCU north of Interstate 8 generally from the northwest to the southeast toward Tule Lake. (Tule Lake is not highly visible in the McCain Valley, including the Project site, because of topography.) The dry streambed is visually distinct from the surrounding low, rolling hills because of its lack of contiguous vegetation and extent of exposed soil, both of which result in a smoother texture and more uniform color palette. The width of the wash varies from less than 0.1 mile to about 0.5 mile at its widest point.

Development in the McCain Valley LCU is moderate, with multiple areas of human disturbance interspersed with areas of more natural rugged terrain and vegetation. Human disturbances include highway and other road corridors, transmission and communication lines, fences, and ranches (buildings and range areas), among others. These generally linear (both horizontal and vertical) features contrast with the more rounded, gently sloping lines and forms of the landscape. A cluster of buildings at the McCain Valley Conservation Camp where the wash intersects McCain Valley Road, as well as fencing, transmission and communication lines, and roads (again, primarily along or adjacent to McCain Valley Road). The wash also appears to be used by off-highway vehicles (OHVs).

As in the Mountain LCU, the Interstate 8 highway corridor is the dominant human modification in the McCain Valley LCU. This transportation infrastructure appears as two dominant lines through the LCU that is visually reinforced by road cuts with exposed light colored granitic soils that contrast with adjacent vegetated areas. The roadways are a smooth, flat, linear feature that creates a highly prominent break in the natural vegetation of the LCU. While the drab gray color of the highway generally fits within the more muted color palette of the surrounding area, its smooth texture contrasts with the more highly textured (stippled) vegetation of the McCain Valley LCU.

Rugged Solar LLC Project Visual Resources Technical Report

4.0 EXISTING VISUAL RESOURCES AND VIEWER RESPONSE

Areas whose views are composed of highly visible or memorable landscape elements, or those areas possessing high scenic integrity often garner the greatest public concern. Views from scenic highways, other tourist routes such as McCain Valley Road and Old Highway 80, and surrounding recreational and cultural areas, including the McCain Valley National cooperative Land and Wildlife Management Area, are generally considered to attract viewers with higher expectations for scenic integrity than viewers of or from more urbanized or developed locations. Local residents traveling local public roads also are considered to have high viewer sensitivity to landscape alteration because of aesthetic and economic considerations that are self-supporting. However, other recreational activities in the area such as OHV recreation in Lark Valley attract users with reduced sensitivity and greater focus on landscape as a “playground.” Finally, interstate highway travelers are considered to have low to moderate sensitivity due mainly to travel speed, visual experience compression, reduced view durations, and the demands placed on individuals operating motor vehicles at high speed. Views of the project occur sequentially (back-to-back) with views of the Sunrise Powerlink transmission infrastructure. Approximately 1.2 minutes of travel time elapses between eastbound motorist views of the Kumeyaay Wind Farm turbines and views of the Project.

Due to the proximity of existing major visual intrusions into the landscape by the existing Kumeyaay Wind Farm, the 500 kV Southwest Powerlink transmission line and the 500 kV Sunrise Powerlink transmission line (steel lattice towers are between 110 and 170 feet in height), viewer sensitivity is considered to be less than what would be expected in a pristine, natural environment void of energy generation/transmission infrastructure.

4.1 Existing Visual Resources

4.1.1 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, 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.

Rugged Solar LLC Project Visual Resources Technical Report

The Proposed Project site is located in the McCain Valley, which is characterized by chaparral hills dotted with granitic boulders. The McCain Valley, including the project site, is bounded by the Laguna Mountains to the west, the In-Ko-Pah and Jacumba Mountains to the north and east, and low hills to the south. The topography of these mountain ranges and nearby hills generally encloses the landscape and provides definition to the overall viewshed of the project site.

The southern portion of the McCain Valley is characterized by gentle slopes, open pasture lands, clustered oaks and shrubs, and granite boulders and rock outcrops. The patchwork of native and non-native vegetative cover and rocky, granite boulders and outcrops gives the majority of the landscape a vibrant green (pastures) to dull grey-green and tan/light grey color palette. Where visible, the more densely vegetated mountains are characterized by a more muted grey-green color compared to the valley. The landscape texture ranges from smooth pastures areas, to coarse clumped vegetation, boulders/rock outcrops. The east/southeast horizon of the viewshed tends to be characterized by more jagged and pyramidal forms compared to the north and west, which are dominated by domed hills that are occasionally dotted with interesting rock outcrops. The overall visual environment should be thought of as a mosaic, or composite of several smaller portions of the viewshed (known as landscape units) that exhibit distinct visual character. Landscape units identified in the project area were previously discussed in Section 3.3.

4.1.2 Visual Quality

The Federal Highway Administration (FHWA) visual resource guidance is particularly useful for projects along and including highways and other travel corridors. The guidance is centered on three key concepts or elements of visual quality (described per Key View in Section 5.2):

1. Vividness – the memorable impression of the combination of contrasting, striking, and/or distinctive visual elements of a landscape.
2. Intactness – the integrity of the overall landscape (including both natural and human-developed elements) and the extent to which the landscape is free from cultural modifications that encroach on the landscape.
3. Unity – the overall harmony or compatibility of landscape elements (i.e., the degree to which visual resources form a coherent, harmonious landscape).

In addition to residential structures and developed lands, the natural landforms, soils, and chaparral vegetation in the Boulevard community typify the visual quality of the viewshed. As stated previously, two distinct LCUs were identified in the viewshed and a discussion of the visual quality for each of LCUs is provided below.

Rugged Solar LLC Project Visual Resources Technical Report

Human perception of visual landscape resources is formed in a larger context that can be limited to an LCU or expand to include larger landscape areas. For motorists, perceptions are formed while traveling through the landscape at high speed and visual resources are viewed relative to other previously viewed landscape images. These prior experiences can increase or decrease the perceived visual resources of an area and visual contrast of individual landscape modifications. For example, prior to entering the project viewshed that is essentially McCain Valley and the surrounding mountains, east bound motorists experience the boulder-dominated mountains west of Jacumba. These mountains are viewed in foreground and middleground distances. The jumbled rocks are memorable and provide vivid images for passing motorists. Upon entering the Mountain LCU for this project, where rock outcroppings are not dominant, the perceived vividness of the landscape decreases. Similarly, landscape intactness decreases as motorists leave relative pristine areas east and west of the McCain Valley and enter the project viewshed where cultural modifications are more readily apparent. Visual unity is, to a lesser degree, affected by movement through the landscape because of the general progression of viewsheds experienced along the highway route. Although these considerations apply to interstate motorists and periodic visitors (e.g., recreationists), the effect is not so apparent to local residents whose movements are more confined to the project viewshed.

Mountains LCU

Vividness

Views are primarily open and unobstructed over McCain Valley. Views transition from the rolling hills and gently sloped valley to mountains with visually distinct ridgelines adds particular visual interest to the landscape. The Interstate 8 corridor, existing Sunrise Powerlink and Kumeyaay Wind Farm contribute to a strong convergence of textures, patterns, colors, and in movement associated with the wind farm, that attract viewer attention and contrast with natural landscape features. While occasionally panoramic in nature, views from the most accessible and frequently viewed locations are generally common to the region. The longest views tend to be to the south and are therefore viewed in a backlit condition, so landscape detail is muted and vividness is reduced. Given the largely monochromatic palette and few memorable features, the vividness or distinctiveness of the landscape is moderate.

Intactness

The Interstate 8 corridor, Sunrise Powerlink, Kumeyaay Wind Farm and other cultural modifications (e.g., rural residences, surface roads, fence lines, etc.) generally dominate views from publically accessible locations when viewed in the foreground and middleground due to the scale and mass of these features. Likewise, background views are dominated by dramatic

Rugged Solar LLC Project

Visual Resources Technical Report

topography that directs the viewer's attention toward the ridge tops. Viewer attention is drawn to the Kumeyaay Wind Farm, even when viewed in the background, because of the elevated location, visual contrast and circular motion of the turbine blades. While the Project site may be partially obscured from this location because of topography, the areas adjacent to the highway corridor appear natural and are defined by low-lying shrubs and other desert vegetation and some interesting boulders and rock outcrops. Moderate to steeply sloped mountains provide scale and interest in the background; however, Interstate 8 and the other cultural modifications generally encroach on the otherwise natural-appearing landscape. Therefore, visual intactness in these LCUs is considered moderate to moderately low.

Unity

The convergent view and transition from valley to mountains creates a moderately coherent visual pattern. The undulating hills of the valley and occasional denuded washes add texture and some contrast with the otherwise green-dominated color palette. The surrounding hills and mountains provide scale and some diversity to the viewshed from this Key View and help to unify the overall panoramic landscape as viewed this site. While the Interstate 8 corridor, Sunrise Powerlink, and other cultural modifications substantially encroach on the landscape, they tend to not detract substantially from the overall unity of the landscape. Therefore, visual unity within these LCUs is considered moderately high.

McCain Valley LCU

Vividness

Expansive, panoramic views of the McCain Valley and surroundings are regularly available from within the Project area. While panoramic, the low, rolling nature of the valley and specifically the Project site, is not highly memorable. The valley's vegetation and the distant mountains provide some interesting focal features and the generally tan colors of Tule Wash are visually distinct and compliment the green palettes common in the surrounding higher elevation areas. Overall, the vividness or distinctiveness of the landscape is moderately low and similar to other areas in the region.

Intactness

McCain Valley Road and the Sunrise Powerlink dominate the foreground, though the middleground and into the background, including the Project site, are generally more natural-appearing. Several unpaved roads, barren areas, and buildings are clearly visible and tend to act as focal points on the landscape due to their high degree of contrast. Some of the more distant buildings disappear on the landscape or are partially obscured by the valley's topography and

Rugged Solar LLC Project Visual Resources Technical Report

vegetation. The Project site is characterized by areas of exposed soil (Tule Wash), low grasses and shrubs, occasional taller trees, and other typical high desert vegetation. McCain Valley Road, transmission lines, fences, and other buildings encroach on the otherwise natural-appearing landscape. Accordingly, visual intactness within these LCUs is considered moderate.

Unity

Vegetation and areas of exposed soil within the Tule Wash and Sunrise Powerlink staging area, paired with the surrounding rolling hills and more distant mountains, unite to create a moderately coherent visual pattern. Tule Wash and other areas of bare ground stand in contrast with colors and textures of surrounding vegetative cover. The nearby hills and more distant mountains provide a variety of scale and diversity to the viewshed, while vegetation unifies the overall landscape. Several cultural modifications encroach on the landscape (most notably McCain Valley Road, Sunrise Powerlink, and several buildings) and interrupt the overall unity of the landscape. As such, visual unity is assessed as moderate to moderately high.

4.2 Viewer Response

Viewer response to changes in the visual landscape is based on a combination of factors:

- individual viewers or groups affected by exposure to a project (viewer groups);
- viewer concern about noticeable changes to the view (viewer sensitivity);
- frequency and duration of views (viewer exposure); and
- type of activity in which individuals are engaged when viewing the landscape (viewer awareness)

4.3 Key Views

Because it is not feasible to analyze all views from which a project site could be seen, it is necessary to select a number of key viewpoints or Key Views that are representative of the existing visual landscape. Human perception of visual resources is formed from dynamic interaction with the landscape in daily life. Key views and simulations depict a static viewpoint that limits the context of the view in the larger experience of the viewer. While key views are used to represent a particular view “window” of the project, the analysis presented here considers the entire viewer experience before and after the view window (key view location). This larger context is more representative of the resulting changes to visual resources that would occur and the degree of the change different viewer groups will experience.

Rugged Solar LLC Project Visual Resources Technical Report

Initial Key Views were identified and evaluated for analysis based on their effectiveness in clearly represent the potential visual effects of the project balanced with representing the typical visual experience of viewer groups potentially affected by the Project. These Key View locations were identified following establishment of a project viewshed, or the geographic extents from which the Project would be visible. This viewshed was determined in the field, and through desktop analysis using three-dimensional modeling and topographical analysis software, and aerial photographs. Viewer groups were determined through field observations and review of land use maps and other planning documents.

Based on this evaluation methodology, four Key Views were selected in collaboration with the County of San Diego for analysis and encompass characteristic and sensitive viewpoints encountered in the existing landscape, and special project and landscape features that are critical to evaluating the overall visual effect of the Project. Key Views chosen for analysis are identified in Figure 5, and summarized below in Table 2.

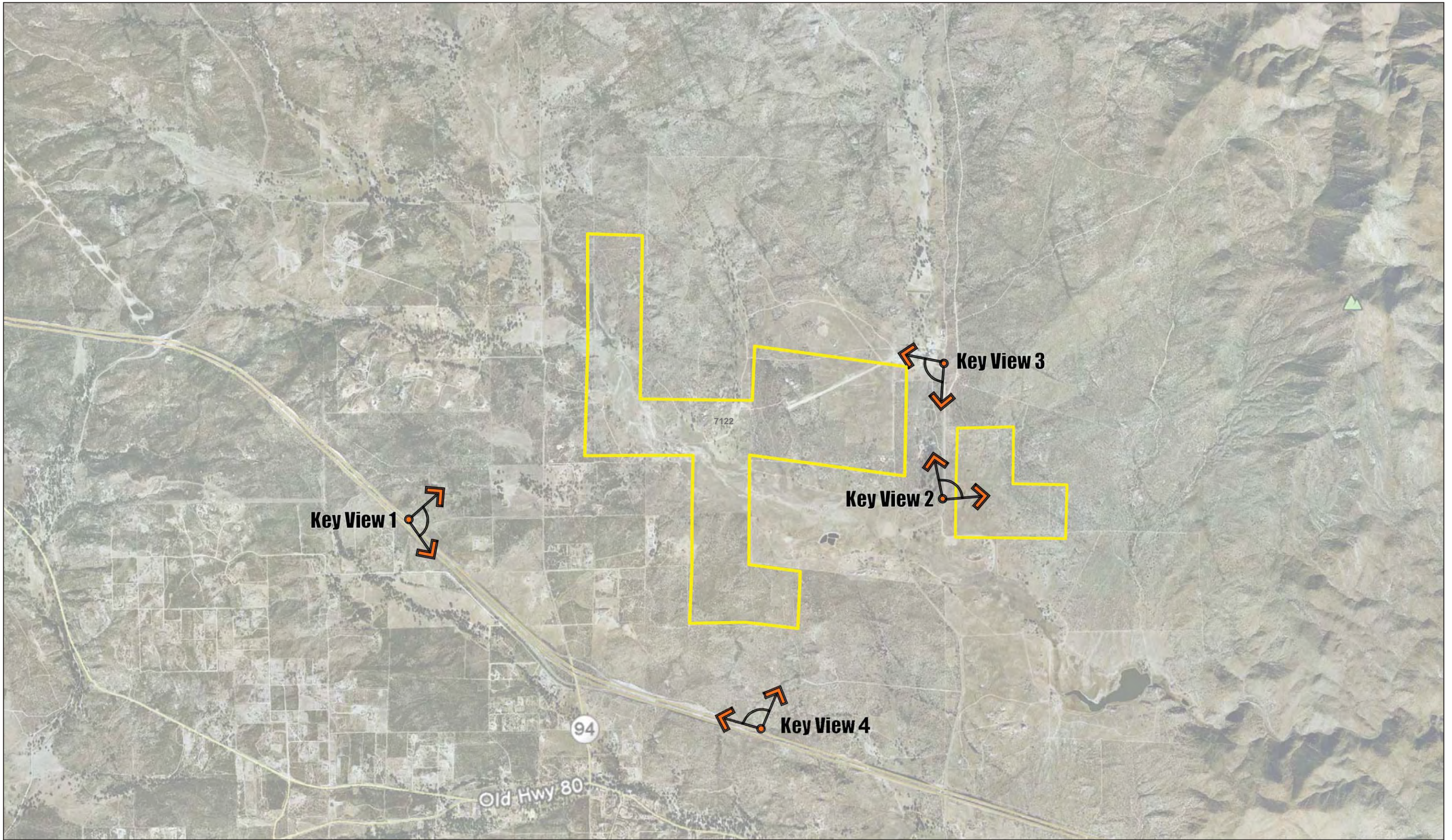
Table 2
Summary of Key View Locations

Key View	Representative Viewer Group	View Description/Orientation
1	Motorists	View from eastbound Interstate 8, approximately 0.9 mile west of Ribbonwood Road
2	Motorist/Recreationists	View from northbound McCain Valley Road, approximately 1.5 miles north of Interstate 8
3	Motorist/Recreationists	View from southbound McCain Valley Road, approximately 2 miles north of Interstate 8
4	Motorists	View from westbound Interstate 8, approximately 1 mile west of McCain Valley Road

For purposes of this assessment, elements within the visual environment are discussed in the context of a foreground, middleground, and background distances and these distance categories are defined as follows:

- Foreground – less than 0.5 mile from the Key View
- Middleground – between 0.5 and 1 mile from the Key View
- Background – more than 1 mile from the Key View

Middleground and background distances are variable based on the orientation of the viewer relative to the sun. When facing the sun, background distance may begin closer to the viewer due to the effect of backlighting that reduces landscape detail and perception of visual resources.



INTENTIONALLY LEFT BLANK

Rugged Solar LLC Project Visual Resources Technical Report

The existing and proposed visual quality at each Key View is assessed according to vividness, intactness, and unity of the landscape visible from the specific location. Vividness relates to the memorability of visual impression received from contrasting landscape components that combine to form a striking and distinctive visual pattern and impression. Intactness is the integrity of visual pattern, evaluated by the extent to which the landscape is free from encroachment by competing visual elements. Finally, unity is the compositional harmony and compatibility of contrasting landscape components and the degree to which the landscape components join together to form a coherent visual pattern. Vividness, intactness, and unity are measured on a 5-point scale with a rating of 1 equating to very low (very low vividness, intactness, and/or unity) and a rating of 5 equating to very high. If all three criteria are assessed as high, then visual quality is also considered high.

Key View 1: Interstate 8 East

Orientation

Key View 1 provides expansive views of the McCain Valley, the Project site, and more distant landscapes to the south stretching into Mexico for motorists traveling east along Interstate 8. Key View 1 is located at an elevation of approximately 3,823 feet. The Project site is located approximately 0.9 mile from the Key View location (at its closest point) and the visible Project facilities would be located at a maximum height elevation of approximately 3,600 feet, more than 200 feet below Key View 1. The elevated position generally provides direct, partial, albeit intermittent and extremely brief, views of the Project site. The low, undulating hills and ridgelines of the McCain Valley, elevated westbound Interstate 8 travel lanes and freeway road cuts continuously obscure portions of the Project site from view as eastbound traffic moves through the landscape. The project site would be visible from two view windows for less than four seconds each including the Key View 1 location). The, Mountains LCU and portions of the McCain Valley LCU are within the viewer's primary focal range from this location. More panoramic views to the south and southeast tend to draw attention away from the area north of Interstate 8 and the project site.

Existing Visual Character and Quality

As depicted in Figure 6, an expansive view of the McCain Valley is afforded to viewers at Key View 1. The Interstate 8 corridor and other cultural modifications (e.g., buildings, transmission lines, surface roads, and existing expanses of exposed soil, etc.) create stark breaks in the natural vegetation of the valley and are highly evident within the landscape view. Eastbound motorists would view the Project across the westbound traffic lanes. As viewed from Key View 1, the McCain Valley's vegetation is characterized by varied patterns of low, matted vegetation

Rugged Solar LLC Project Visual Resources Technical Report

intermittently interrupted by larger, darker green oak trees. The northern portion (i.e., north of Interstate 8) of the valley, including the Project site, has low to moderately undulating hills with periodic washes (Tule Creek) and occasional large boulders and rock outcrops that add texture and contrast to the landscape. Domed hills and well-defined mountain ridgelines serve as a backdrop to the lower, more gently sloped valley bottom that is generally visible along Interstate 8.

Vividness (Rating 3.0)

The transition from rolling hills and gently sloped valley to mountains with a visually distinct ridgeline adds visual interest at this site. Given the location of this Key View, the Interstate 8 corridor creates a convergence of textures, patterns, and colors that dominate the view. While highly panoramic and with multiple interesting features, the view is generally common to the region and the vividness or distinctiveness of the landscape is moderate at Key View 1.

Intactness (Rating 2.5)

The Interstate 8 corridor and other cultural modifications (e.g., rural buildings, etc.) generally dominate the foreground view from Key View 1. Likewise, background views are dominated by dramatic topography that directs the viewer's attention toward the ridge tops. While the Project site may be partially obscured from this location because of topography and increasing westbound traffic lane elevations, the areas adjacent to the highway corridor appear natural and are defined by low-lying shrubs and other desert vegetation and some interesting boulders and rock outcrops. Moderate to steeply sloped mountains provide scale and interest in the background. Interstate 8 is a major intrusive cultural element in the landscape, and other cultural features are minor intrusions on the otherwise natural-appearing landscape at Key View 1.

Unity (Rating 3.0)

The convergent view and transition from valley to mountains creates a moderately coherent visual pattern at Key View 1. The undulating hills of the valley and occasional denuded washes and staging areas contrast highly with the otherwise green-dominated color palette. The surrounding hills and mountains provide scale and some diversity to the viewshed. While the Interstate 8 corridor and other cultural modifications substantially encroach on the landscape, they tend to not overly detract from the overall unity of the landscape.



Key View 1–Existing Conditions, facing east along Interstate 8



Key View 1–Proposed Conditions, Visual Simulation

Z:\Projects\71221\MAPDOC\MAPS\IEIR\Section 2\Aesthetics

INTENTIONALLY LEFT BLANK

Rugged Solar LLC Project Visual Resources Technical Report

Proposed Project Features

The vast majority of the proposed CPV trackers and associated Project facilities including the O&M building, inverters, and water tanks would be visible in the middleground to background at this location. The CPV trackers in the southwesternmost corner of the Project area may be slightly obscured from view at this location because of topography. These CPV trackers would be about 0.9 mile from the Key View, and the tallest Project feature would be approximately 200 feet below the line of sight at this location. Due to motorist movement and speed, the edges of the CPV tracker fields will be obscured and vague, with limited hard lines or edges in view. Approximately 40% of the overall trackers will be visible from eastbound view windows. The remaining 60% of the project will be obscured by vegetation, intervening topography, Interstate 8 westbound travel lands, and road cut slopes. Views of the proposed project features would be evident during construction and operation of the Project.

As further detailed below in the Key View 4 analysis, a project view will be afforded to westbound Interstate 8 motorists through a natural saddle in the topography associated with the southernmost parcel. Project grading and CPV trackers will be installed toward the highway side of this saddle. A small portion of the Project will be viewed through this gap, accounting for less than 2% of the total number of CPV trackers and approximately 7% of the total developed Project perimeter.

Change to Visual Character and Quality

By definition, any built features in a natural setting would change the character of the view. In the case of Key View 1, the Interstate 8 corridor is the primary cultural change on the landscape, though several buildings, a major regional transmission corridor, local power and telephone lines, and other modifications attract viewer attention in the landscape. Areas of existing high-color and textural contrast are visible from this Key View location, and result from the ongoing construction operations of Sunrise Powerlink, where noticeable losses of vegetative cover have exposed highly-contrasting native soils across portions of the ground-plane at the project site. The introduction of the Project, however, would replace and potentially increase the area in contrast with the largely natural appearance of the surrounding McCain Valley floor as viewed from eastbound Interstate 8. However, the contrast would be muted by the limited view duration, view distance in the middle-background area, and intervening topography, vegetation, and westbound traffic. Construction operations, though dynamic in nature, would be evident to passing motorists, and the Project would constitute a noticeable change to existing conditions during the operations phase. Eastbound motorists will view the project in close temporal proximity (1.2 minutes) to foreground views of the Kumeyaay Wind Farm. Based on this analysis and the overall experience for eastbound motorists, the introduction of the Project

Rugged Solar LLC Project Visual Resources Technical Report

represents a moderate alteration of the visual character of this Key View location and the other view window on eastbound Interstate 8.

Westbound motorists will experience one view of the project starting at the McCain Valley Road overpass and extending in two view windows for 43 seconds followed by an additional 18-second view duration. CPV trackers will appear in a low saddle in the natural topography at a distance from 1.5 miles (background view) to 0.6 mile (foreground view), respectively, as motorists move through the area. Vegetation removal, grading, and CPV trackers will be apparent. Trackers will break the horizon line at this location. At times, the horizon line will appear as a serrated edge that contrasts with the “soft” horizon line created by the merging of vegetated land and sky. As noted above, a small portion of the total project features will be viewed from this location. At the end of this view, the Kumeyaay Wind Farm wind turbines begin to become visible in the background directly in line with westbound Interstate 8 on the horizon line created by the Tecate Divide. As motorists approach these turbines, the Project passes by to the north and out of the motorists view angle.

Vividness (Rating 2.5)

The Project would have a moderate effect on the essential components of existing vividness from Key View 1. The CPV trackers and associated Project features would generally alter the color, textures, and patterns of the north and northeast middleground to background view; however, based on the orientation of the highway at Key View 1, it is anticipated that this area would not be the focal point of motorists traveling east on Interstate 8. As such, the Project would have only moderate influence and intrusion upon the overall vividness of the surrounding landscape.

Intactness (Rating 2.0)

As noted under the existing conditions at Key View 1, the Interstate 8 corridor, existing areas of exposed native soil on the ground-plane, and elevated ridgelines forming the horizon in the distance dominate viewer attention at this location. As shown in Figure 6, the Project would be briefly visible in the middleground to background of the viewshed from this location, though partially obscured by the rolling terrain and vegetation of the McCain Valley as viewers move through the landscape. The visible Project features would introduce another incongruent, human-made element to a landscape that is already dotted with large (Interstate 8 and Kumeyaay Wind Farm) and small (rural buildings) modifications. The introduction of the Project on the landscape when viewed partially and briefly by passing motorists would moderately decrease the visual integrity and intactness of the panoramic viewshed.

Rugged Solar LLC Project Visual Resources Technical Report

Unity (2.5)

At Key View 1, the panoramic view looking north to south from the Key View on the Interstate 8 corridor and seamless transition from valley to mountains creates a moderately coherent visual pattern. The Project would create a moderate visual intrusion and add additional industrial features to the landscape (in addition to those described previously). While the CPV trackers and associated Project features would be briefly visible in the middleground to background of the viewshed from this location (modifications in the foreground often have a more pronounced impact), they would moderately detract from the overall unity of this panoramic landscape as viewed from Key View 1.

Viewer Response (Rating 2.5)

Motorists including residents, commuters, and tourists are the most likely viewers of the Project from Key View 1. Typically, motorists have a low sensitivity to visual changes in the environment based on their angle of observation, duration of exposure, and focus on the roadway itself. Though this viewer conditioning is generally true, Interstate 8 is a county-designated scenic highway and state-eligible scenic highway, and thus, by definition, possesses more highly sensitive scenic integrity than other transportation corridors. However, the County designation was created prior to the introduction of other major energy infrastructure projects in the area. Given motorist speed, viewing duration and distance, previous exposure to major visual intrusion by the Kumeyaay Wind Farm, other competing focal views to the south, and viewer orientation to the Project, viewer awareness of the Project from Key View 1 is likely to be low to moderate.

Resulting Visual Impact

The installation of CPV trackers and associated Project facilities across an expanse of valley floor would introduce additional industrial features in relatively high contrast with its surroundings. Considering the presence of existing cultural modifications and visually incongruous infrastructure in the immediate vicinity of the Project area, it is anticipated that implementation of the Project would result in a low to moderate visual impact at Key View 1.

Key View 2: McCain Valley Road, Facing North

Key View 2 is located on McCain Valley Road, facing north to east. The noncontiguous eastern portion of the Project would be located in the immediate foreground from this Key View. Note, while the primary viewshed from this Key View is to the north and east, the larger, western portion of the Project would also be briefly visible in the middleground, 30 seconds prior to reaching this viewpoint on McCain Valley Road.

Rugged Solar LLC Project Visual Resources Technical Report

Orientation

Key View 2 provides direct views of the Project for motorists on McCain Valley Road. While not a focal point given the orientation of McCain Valley Road and the Project site, motorists would have clear and generally unobstructed foreground views of the Project site as they travel in either direction (north–south). Large steel lattice towers and transmission lines associated with the Sunrise Powerlink corridor parallels McCain Valley Road between the viewer and the Project site. The Key View is at approximately the same elevation of the Project site and about 0.1 mile away (at its closest location). Project facilities would rise to an elevation of about 30 feet above the Key View and would be clearly visible in most cases, except when obscured or interrupted by the lattice towers of the Sunrise Powerlink. The McCain Valley LCU is within the viewer’s primary focal range and the Mountain LCU forms the backdrop to the east from this location. The orientation of this Key View directs viewer attention to the north and east. The western component of the Project site would be screened from Key View 2 by intervening topography and a large stand of oaks.

Existing Visual Character and Quality

As depicted in Figure 7, the view from Key View 2 includes the eastern extent of the McCain Valley LCU. The area is characterized as high desert/open range land with occasional areas of exposed soil and rock, low grasses and shrubs, and some larger trees at the Project site. Slopes descending from the Mountain LCU are evident to the east. The viewpoint has a low horizon over the McCain Valley LCU and generally lacks any focal point that would draw the attention of the viewer. Cultural modifications include the major visual intrusion of the vertical lattice towers, concrete pedestals, access roads and cleared areas, and downward-sweeping transmission lines of the Sunrise Powerlink energy infrastructure. These elevated features rise above the low horizon line and command viewer attention. Local power/telephone poles/lines parallel the road right-of-way on the west side of McCain Valley Road.

The larger viewshed is dominated by low, rolling hills trending to the west into the McCain Valley LCU; generally low desert vegetation is interspersed with occasional boulders and rock outcrops; and Tule Wash, which cuts across the northern portion of the McCain Valley from the northwest to the southeast, is not visible from this location. Domed hills and mountains serve as a backdrop to the lower, more gently sloped valley bottom that is visible from this Key View.



Key View 2–Existing Conditions, facing north along McCain Valley Road



Key View 2–Proposed Conditions, Visual Simulation

INTENTIONALLY LEFT BLANK

Rugged Solar LLC Project Visual Resources Technical Report

Vividness (Rating 2.25)

Key View 2 provides local views from within the McCain Valley. The low, rolling nature of the valley, low horizon line, and specifically the Project site, as viewed from Key View 2, lacks any focal point of interest and is generally not highly memorable. The uniformity of the desert vegetation and the distant mountains provide some interesting focal features, but overall, the vividness or distinctiveness of the landscape is moderately low and diminished by the energy infrastructure that dominates the foreground view.

Intactness (Rating 2.25)

The existing transmission line that parallels McCain Valley Road dominates the immediate view from Key View 2. Beyond the transmission line corridor, the Project site is natural-appearing and generally devoid of other cultural modifications. As noted previously, the Project site is characterized by low grasses and shrubs, occasional taller trees, and other typical high desert vegetation. McCain Valley Road, fencing, and the transmission lines are a major intrusion on the visual resources of the natural-appearing landscape at Key View 2. Therefore, visual intactness from Viewpoint 2 is considered to be moderately low.

Unity (Rating 2.75)

The typical high desert vegetation that is characteristic of the Project site paired with the surrounding rolling terrain and low horizon line that gradually defines the transition from the McCain Valley LCU to the Mountain LCU, and more distant mountains, creates a moderately coherent visual pattern. Nearby exposed soil and occasional rock outcrops add texture and some contrast with the otherwise green-dominated color palette. Due to the low, gradually upward-sweeping horizon line, the sky is a major unifying element in the landscape, especially when clouds are present. The nearby foothills and mountains provide scale and some diversity to the viewshed from Key View 2 that helps to unify the overall landscape. The Sunrise Powerlink infrastructure creates a major visual intrusion that contrasts with unifying landscape elements such as the horizon line and sky, and to a lesser extent, vegetation patterns. Due to the semitransparent nature of the infrastructure, the visual impact is an overlay of incongruent lines, and most of the natural unifying visual elements remain visible. Based on this discussion and analysis, landscape unity is considered to be moderate.

Proposed Project Features

The proposed CPV trackers and associated Project facilities would dominate the foreground from this Key View. The closest CPV tracker would be about 0.1 mile from the Key View, and the tallest Project features would rise approximately 30 feet above the Key View. The eastern

Rugged Solar LLC Project

Visual Resources Technical Report

component of the Project (as viewed from Key View 2) would parallel McCain Valley Road for about 0.5 mile near the Key View. All vegetation within the CPV tracker field will be removed for required fire protection. At times, the CPV tracker rows would be evident to passing motorists. The movement of passing cars would create a visual pattern set up by the rows and openings in between. This pattern would create an added contrast to the landscape. In addition, the trackers will visually rise above and break the horizon line. At times, the CPV trackers would create a serrated effect at the horizon line that would be incongruent with the existing “soft” horizon created by the intersection of vegetated land and sky. Inverter/transformer enclosures are scattered throughout the CPV trackers and may be partially, and fleetingly, visible from this viewpoint depending upon the time of day and orientation of the trackers. The 6-foot tall security fence will be visible in front of the CPV trackers.

Change to Visual Character and Quality

As shown in Figure 7, the Project would add 360 CPV trackers (those closest to McCain Valley Road would be most visible and partially obscure views of those farther from the road), as well as eight inverters and several distribution lines to the Project site. The Project would generally be located in the foreground viewing distance of Key View 2, which is currently dominated by an existing transmission line, as well as areas of exposed soil and rock, and typical high desert vegetation. The trackers will interrupt the existing horizon line and create a new horizon line angle in conflict with the landscape horizon descending from the Mountain LCU. CPV tracker rows will create a visual pattern to passing motorists that is not present in the landscape. Construction operations, though dynamic in nature, would be evident to passing motorists and recreational viewers, and the addition of the 360 CPV trackers and associated Project facilities would substantially increase the level of cultural modifications/built elements, further altering the overall character and quality of the view from Key View 2.

Vividness (Rating 1.5)

As noted previously, the Project site, as viewed from Key View 2, lacks a focal point of interest and is dominated by the sky such that the views and visual resources are highly memorable or unique. The addition of the Project features would create added mass and incongruent industrial detail at the base of the existing transmission line towers that parallel McCain Valley Road. The Project features would highly contrast with the natural appearance of the valley landscape. Views of the surrounding hills and mountains would likely remain unchanged except for lower areas where the horizon line is broken and replaced by the upper edge of the CPV trackers. Vegetation removal coupled with the mass, volume, and foreground detail of these industrial elements will further contrast with and replace natural landscape features. Therefore, impacts to the natural visual resources will reduce vividness to a moderately low rating.

Rugged Solar LLC Project Visual Resources Technical Report

Intactness (Rating 1.2)

The Project would add substantial human-made elements in the foreground view and extend the zone of the built environment both horizontally and vertically at Key View 2. The CPV trackers and other Project features would highly encroach on and contribute to the industrialization of the Project site. Consequently, the Project would compromise the overall visual integrity represented at this Key View to a low rating.

Unity (Rating 1.0)

At the close view distance (nearest Project features would be about 0.1 mile from the Key View location), the Project would be highly noticeable and dominate the view from Key View 2. The Project features would add additional disparate elements to the landscape, including strong horizontal and vertical lines, and smooth textures that contrast with the natural high desert landscape. The discontinuity of the horizon line will accentuate the presence of the trackers, drawing further attention of the viewer. More distant views above and to the east of the tracker of the rolling hills and mountains in middleground and background views of this Key view would likely remain intact. The level of human modifications associated with the Project would significantly alter the unity of the landscape to a low rating.

Viewer Response (3.5)

Motorists and recreational viewers are the most likely viewers of the Project from Key View 2. In general, motorists have a low sensitivity to visual changes in the environment because their attention is focused on the road and their destination. However, McCain Valley Road provides access to the McCain Valley Conservation Area, which may attract visitors who are more sensitive to changes on the landscape than other types of motorists (e.g., commuters). As such, and given a lower motorist speed, longer viewing duration, and orientation of the Project, viewer awareness of the Project from Key View 2 is likely to be moderately high.

Resulting Visual Impact

The addition of CPV trackers and associated Project facilities would substantially increase the level of cultural modifications/built elements already present, and would further alter the overall character of the landscape along McCain Valley Road. Given this increase, viewer proximity, and sensitivity to the Project, implementation would result in a moderately high visual impact at Key View 2.

Rugged Solar LLC Project Visual Resources Technical Report

Key View 3: McCain Valley Road, Looking South

Orientation

Key View 3 is located slightly more than 0.5 mile north of Key View 2 and also provides direct views of the Project for motorists traveling south along McCain Valley Road. While not a focal point given the orientation of the road and Project site, motorists would have clear and generally unobstructed views of the Project site for approximately 15 seconds at a viewing distance of 0.25 mile as they travel in either direction on McCain Valley Road (though Key View 3 orients views from the west to south). A grove of oak trees to the south of Key View 3 blocks views to the west and effectively screens the CPV trackers from view.

The Key View 3 is at approximately the same elevation as and about 0.25 mile from the Project site (at its closest location) with little intervening vegetation. Project facilities would rise to an elevation of about 30 feet and be clearly visible at times. The McCain Valley LCU is within the viewer's primary focal range (with a portion of the Mountain LCU visible in the background) from this location. While the orientation of this Key View directs views to the west and south, the eastern component of the Project site would also be visible to the east-south from Key View 3.

Existing Visual Character and Quality

As depicted in Figure 8, the view from Key View 3 is similar to that at Key View 2 and is characterized as high desert/open range land with several areas of exposed soil and occasional rock and primarily low grasses and shrubs that are occasionally dotted with larger trees.

The existing Sunrise Powerlink infrastructure is routed along the east side of McCain Valley Road and between motorists and the Project site. A local pole/telephone line and low barbed-wire fence are present on the west side of McCain Valley Road. The Kumeyaay Wind Farm turbines are visible in the background views atop the Tecate Divide at the western edge of the McCain Valley viewshed. Other cultural modifications are evident and create minor to moderate intrusions on the visual landscape features including a cluster of ranch houses, fences, leveled barren areas, and vegetation removal for pasture land.



Key View 3–Existing Conditions, facing southeast along McCain Valley Road



Key View 3–Proposed Conditions, Visual Simulation

Z:\Projects\7122\1\MAPDOC\MAPS\ER\Section 2\Aesthetics

FIGURE 8
Key View 3–Existing and Proposed Conditions

INTENTIONALLY LEFT BLANK

Rugged Solar LLC Project Visual Resources Technical Report

The larger viewshed is dominated by low, rolling hills; generally low desert vegetation that is interspersed with boulders and rock outcrops; and Tule Wash, which cuts across the northern portion of the McCain Valley from the northwest to the southeast. Domed hills, distant mountains, and low ridgelines form the southern horizon line. The sky is as dominant of a unifying visual feature as the low-lying land because of the low horizon line. Spatially, the viewer's attention is drawn into the expanding landscape that falls away from the viewer's position out to the low distant horizon. Viewer orientation is to the south, facing the sun, resulting in reduced landscape detail due to backlighting. However, views to the east and west from this vantage point can be very crisp and detailed.

Vividness (Rating 3.0)

Key View 3 provides panoramic views of the McCain Valley. However, the low, rolling nature of the valley and specifically the Project site, as viewed from Key View 3, is not highly memorable. The mixed and somewhat layered nature of the valley's vegetation and the distant mountains provide some interesting focal features. The generally tan color of Tule Wash is visually distinct but complements the green palette common in the surrounding high desert vegetation. The edges of Tule wash are indistinct and blended with the overall valley landform and vegetation. Overall, the vividness or distinctiveness of the landscape is moderate and similar to other valley/high desert areas in the region.

Intactness (Rating 2.25)

McCain Valley Road and the transmission towers/lines on either side of the road dominate the existing foreground (in particular, to the south from this Key View). The middleground and into the background, including the Project site, are generally more natural-appearing, though several unpaved roads, barren areas, and buildings are clearly visible and tend to act as focal points on the landscape. Some of the more distant buildings disappear on the landscape or are partially obscured by the valley's topography and vegetation. The Project site is characterized by areas of exposed soil (Tule Wash), low grasses and shrubs, occasional taller trees, and other typical high desert vegetation. McCain Valley Road, transmission lines, fences, and other buildings encroach on the otherwise natural-appearing landscape at Key View 3. Overall, the landscape scene has moderately low intactness due to multiple encroaching cultural modifications in the foreground and middleground view.

Unity (Rating 3.0)

The typical high desert vegetation that is characteristic of the Project site paired with the exposed areas associated with Tule Wash, the surrounding rolling hills, and more distant mountains

Rugged Solar LLC Project Visual Resources Technical Report

creates a moderately coherent visual pattern. Tule Wash and the Sunrise Powerlink staging area's bare soils contrast highly with the surrounding vegetation cover. The nearby hills, distant mountains, low horizon line and overarching sky provide an expansive scale and some diversity to the viewshed from Key View 3 and help to unify the overall landscape. Several cultural modifications encroach on the landscape (most notably McCain Valley Road, transmission lines, and several buildings, landscape alterations, among others) and detract from the overall unity of the landscape. Unity is therefore considered to be moderately high because the encroaching elements do not overwhelm the larger expansive landscape view.

Proposed Project Features

The proposed CPV trackers and other associated Project facilities would be visible in the foreground to middleground from this Key View. The closest CPV tracker would be about 0.25 mile from the Key View and the tallest Project features would rise approximately 10 to 20 feet above the Key View. The O&M building and two water tanks also would be visible from this location. For motorists leaving the Lark Canyon recreation OHV and Cottonwood campground areas, brief, intermittent background views of the western component (i.e., component that is west of McCain Valley Road) of the Project (as viewed from Key View 3) would begin approximately 1 mile north of Key View 3 when motorists top the low ridgelines on McCain Valley Road. The project is viewed with a highly modified valley in the foreground where vegetation clearing has historically occurred to facilitate grazing, and topographic modification associated with stock ponds is visible. At Key View 3, CPV trackers, the O&M building, and two water tanks would be visible from McCain Valley Road for approximately 0.25 mile until intervening oak trees screen the view from motorists. Whereupon the eastern component (i.e., component that is east of McCain Valley Road) of the Project is fully visible in the foreground view of McCain Valley Road, and this view continues for approximately 0.25 mile to the south.

Change in Visual Character and Quality

As shown in Figure 8, the Project would add approximately 3,196 CPV trackers (those closest to McCain Valley Road would be most visible), the O&M building and water tanks, as well as 115 inverters and several distribution lines (intermittently visible) to the Project site. From Key View 3, the Project would be located in the foreground to middleground, which currently has multiple cultural modifications that detract slightly from the landscape. The CPV trackers present to the viewer a horizontal image of massed trackers punctuated by the O&M building. These features remain below the horizon, but would tend to block views of Tule Wash. Natural valley topography that will be modified by grading to eliminate high and low points will help to screen trackers from this Key View. The Project site, as viewed from this Key View, is also characterized by areas of exposed soil and rock and typical high desert vegetation. Tule Wash

Rugged Solar LLC Project Visual Resources Technical Report

crosses a portion of the Project, though most CPV trackers and other associated Project facilities would not be sited within the wash. Construction operations, though dynamic in nature, would be evident to passing motorists and recreational viewers. The addition of 3,196 CPV trackers and other Project facilities would substantially increase the level of industrial infrastructure, visible on both sides of McCain Valley Road, further altering the overall character and quality of the view from Key View 3.

Vividness (Rating 2.0)

The Project site, as viewed from Key View 3, is panoramic, but not highly memorable or unique. Tule Wash adds an interesting element but generally does not dominate as a focal aspect of the landscape. The addition of the Project features would add a lower, horizontal mass and volume to the existing transmission line that parallels McCain Valley Road and other nearby buildings at this location. These features would highly contrast with the natural appearance of the valley landscape. Views of the surrounding hills and mountains would likely remain unchanged, though middleground views may be partially obstructed by the height and proximity of Project features at Key View 3. The effect of the new project features would reduce vividness of the Key View to moderately low.

Intactness (Rating 1.25)

The Project would add substantial human-made elements of contrasting mass and volume that is accentuated by the removal of vegetation in the foreground and middleground views. These features substantially extend the zone of the built environment both horizontally and vertically at Key View 3. The CPV trackers and other Project features would encroach on and contribute to the conversion of the landscape from a modified rural setting to an industrialized character at this Key View. The resulting effect would reduce visual resource intactness to low.

Unity (Rating 1.0)

Given the planned siting and magnitude of change anticipated from the Project, it would be highly noticeable and dominate the view from Key View 3. The Project features (including CPV trackers, inverters, and distribution lines) would add additional disparate elements to the landscape, including strong horizontal and vertical lines, and smooth textures that contrast with the natural high desert landscape. Permanent scars from construction and additional access/maintenance roads would also contrast in color, density, and texture with the surrounding vegetation and landforms. While the rolling hills and mountains in the background views from this Key View would likely remain intact (though partially obscured), the level of human

Rugged Solar LLC Project Visual Resources Technical Report

modifications associated with the Project would significantly alter the unity of the landscape from Key View 3 to a low level.

Viewer Response (Rating 3.5)

Similar to Key View 2, motorists are the most likely viewers of the Project from Key View 3. As noted previously, motorists have a low sensitivity to visual changes in the environment because their attention is focused on the road and their destination. However, McCain Valley Road provides access to the McCain Valley Conservation Area, which may attract visitors who are more sensitive to changes on the landscape than other types of motorists (e.g., commuters). As such and given motorist speed, viewing duration, foreground exposure, and viewer orientation, viewer awareness of the Project from Key View 3 is likely to be moderately high.

Resulting Visual Impact

The installation of CPV trackers and associated Project facilities across an expanse of valley floor would introduce industrial features of substantial mass and volume in relatively high contrast with its surroundings. Given the associated looming and visually dominant effects on foreground views in this location, it is anticipated that implementation of the Project would result in a high visual impact at Key View 3.

Key View 4: Interstate 8 West

Orientation

Key View 4 provides a representative view of adjacent terrain and vegetation visible from the westbound travel lanes of Interstate 8. Key View 4 also provides passing motorists with middleground views of the southernmost project boundary that occurs between a natural saddle visible to the northwest from the interstate. The key view location is situated at an elevation of approximately 3,450 feet and the proposed project boundary is located approximately 0.55 miles to the north. As shown in Figure 9, chaparral-covered terrain to the west (adjacent to the interstate) and northwest creates a low horizon that gradually decreases in elevation and then briefly rises to a small distant rock outcrop. East of this outcrop, a topographical low point occurs and the tall, mounded form of clustered oak trees is visible. Further to the east, the terrain begins to rise and a portion of a small boulder-covered hill is visible.



Key View 4—Existing Conditions, facing northwest along westbound Interstate 8



Key View 4—Proposed Conditions, Visual Simulation

INTENTIONALLY LEFT BLANK

Rugged Solar LLC Project Visual Resources Technical Report

Existing Visual Character and Quality

As depicted in Figure 9, a limited, enclosed view of the McCain Valley and terrain and vegetation adjacent to Interstate 8 is available from Key View 4. To the west, the flat form and asphalt surface of Interstate 8 and distant, boxy informational signage along the interstate creates a visual break in the local terrain and vegetation. As interstate motorists scan the landscape from west to northwest, terrain and to a lesser extent vegetation limits the extent of available views. Further, terrain immediately north of Key View 4 abruptly decreases in elevation and forms a shallow valley populated by green and brown hues displayed by chaparral vegetation, numerous areas of exposed tan soils, and several low and spreading rock outcrops. From Key View 4, westbound motorists would view the project across an approximate 0.5 mile expanse of natural terrain and vegetation characterized by dense and at times irregular patterns of low, matted chaparral vegetation intermittently interrupted by larger, dark green oak trees and the tan color and smooth texture displayed by rock outcrops. As motorists follow the horizon line from west to northwest, a depressed, topographical saddle occurs between a low rock outcrop and a small boulder covered hill.

Vividness (Rating 3.4)

Northerly views from Key View 4 are free from visually encroaching features and eyesores (see intactness discussion below) and the various green and brown hues of desert chaparral vegetation creates an interesting color pattern in the landscape that is further marked by the the light tan color of exposed soils and rock outcrops. In addition, the rolling form of terrain forming the western and northwestern horizon visible from Key View 4 and the flat to slightly rising terrain between the interstate and the topographical saddle to the north are relatively interesting in the context of the surrounding valley terrain and contribute to the overall rugged visual character of the McCain Valley area. Still, the vegetation and terrain in the Key View 4 landscape is relatively commonplace in the visual experience of westbound motorists as they travel through the McCain Valley area and particularly vivid or striking visual features are not overly apparent. Therefore, the vividness of Key View 4 is assessed as moderate.

Intactness (Rating 4.1)

With the exception of Interstate 8 and associated information signage and markers, the Key View 4 landscape lacks features that visual encroach on the natural character of the view. For example, northwesterly views from Key View 4 consist of characteristic vegetation and topography of the McCain Valley area and man-made features are noticeably absent. Further, exposed tan soils and the light tan color displayed by rock outcrops visible from the westbound lanes of Interstate 8 combine with the green to brown hues of chaparral vegetation and contribute to the characteristic

Rugged Solar LLC Project Visual Resources Technical Report

rugged visual character of the larger McCain Valley area landscape. As such, overall intactness is considered moderately high.

Unity (Rating 4.2)

As shown in Figure 9, visible man-made development in Key View 4 landscape is concentrated along the Interstate 8 corridor and offsite areas are natural and appear undisturbed. Moreover, the rugged, rural, and undeveloped character of the chaparral-covered landscape is consistent in northwesterly views from the interstate and the lack of chaotic and/or jumbled features adjacent to and along the interstate contributes to an overall coherent and harmonious visual pattern.

Proposed Project Features

As shown on Figure 9, interstate motorists would be afforded passing views of CPV trackers located in the topographical saddle occurring northwest of the Key View 4 location. As proposed, visible CPV trackers would be located at an approximate elevation of 3,600 feet (Key View 4 is situated at an elevation of 3,450 feet) in the natural saddle resulting in an inferior view angle and partially obstructed views of the Rugged solar farm available to interstate motorists. Due to the inferior view angle at Key View 4 as well as the presence of tall oak trees and the mounded, spreading form of oak tree canopies, it is anticipated that the visual effects of vegetation removal and grading would be screened from view. However, as depicted in Figure 9, the majority of visible CPV trackers would rise above the existing vegetation line and motorists would be afforded primarily unobstructed views of these project features.

Change to Visual Character and Quality

As shown in Figure 9, Interstate 8 and associated signage and markers are the lone visible man-made development in the landscape. As discussed above, proposed CPV trackers would be visible in the topographic saddle occurring at a foreground viewing distance to the northwest between a small rock outcrop and a boulder-strewn hill (see Figure 9). The introduction of the tall and rectangular form, bright color, and smooth texture of CPV trackers to the Key View 4 landscape would create noticeable visual contrast with the short, rough form, green to brown hues, and rugged lines of existing chaparral vegetation. The visibility of proposed CPV trackers would be enhanced by the inferior viewing angle available to interstate motorists at Key View 4 and as a result, several trackers would be silhouetted against the background sky. Further, at times, the new horizon line created by trackers would appear as a lightly colored, rectangular to slightly serrated edge that would contrast with the “soft” horizon line created by the merging of vegetated land and sky. Although a small portion of the total project would be visible from this

Rugged Solar LLC Project Visual Resources Technical Report

location, the resulting visual change to the undisturbed, natural character of the landscape would be visible to passing motorists and would affect the quality of existing views.

While Key View 4 presents a static view of the Rugged solar farm project from the westbound lanes of Interstate 8, additional views of the solar farm would be available to westbound traffic and the motorist's visual experience would be dynamic in nature. Westbound traffic would be exposed to the southernmost extension of the project along two view windows lasting 18 and 43 seconds at a distance of 0.6 mile and 0.8 to 1.1 miles, respectively. The two view windows are separated by a mounded road cut located approximately 0.5 miles west of McCain Valley Road. The visual experience of the solar farm project from the two anticipated view windows would vary due to distance and angle of view. For example, when viewed from the more distant view window, visual contrast associated with vegetation removal and grading is anticipated to be more apparent as the southern project boundary could potentially be viewed in-line from the interstate and would create noticeable line and color contrast when viewed against surrounding terrain and vegetation. On the other hand, when viewed from the closer viewing window, the visual effects of vegetation removal and grading would be somewhat obscured by the available view angle and intervening landscape and terrain however, the apparent scale of CPV trackers would appear larger and would these features would primarily comprise the motorist's visual experience of the solar farm development.

Vividness (Rating 2.4)

As viewed from Key View 4, the introduction CPV panels to the interstate adjacent landscape would have a moderately high effect on the existing vividness of the landscape. The tall and rectangular form, bright color, and horizontal line of CPV trackers would contrast with the form, color, and line of surrounding terrain and vegetation. In addition, CPV trackers would be located within a natural topographical saddle and in effect would be framed by adjacent rising terrain. Further, the visual framing of the CPV trackers would tend to intensify motorist's attention to these project features and the modification of the topographical saddle would be apparent from the westbound lanes of the interstate. As viewed from Key View 4, the line and form of CPV trackers would interrupt the natural and undeveloped rugged character of the landscape and would alter the overall perception of visual quality. Therefore, as viewed from Key View 4 the Rugged solar farm project would have a moderately high effect on the overall vividness of the surrounding McCain Valley area landscape.

Intactness (Rating 2.7)

As shown in Figure 9, proposed CPV trackers would be visible to westbound interstate motorists at a foreground viewing distance and for the most part, passing views to trackers would be unobstructed. As viewed from Key View 4, proposed CPV trackers would occupy the low

Rugged Solar LLC Project

Visual Resources Technical Report

topographical saddle area in the landscape to the northwest and would essentially be framed by the saddle and adjacent rising terrain. As discussed above, locating project features within a low saddle area would tend to draw attention to the area and the contrasting form, line, and color of CPV trackers would be apparent when viewed in the context of the surrounding terrain and vegetation. Further, the existing visual pattern created by the green to brown hues of chaparral vegetation and the slowly rolling lines of terrain would be interrupted by the bright color and boxy lines of CPV trackers which would change through the day as the trackers follow the sun from east to west. As a result, project effects to the existing intactness of the Key View 4 landscape would be moderately high.

Unity (2.3)

As stated previously CPV trackers would be introduced to the topographical saddle area visible from the westbound lanes of Interstate 8 at a foreground viewing distance (approximately 0.55 miles to the northwest). The form, line, color and texture of CPV trackers would contrast with that of surrounding natural terrain and vegetation and the gradually rising walls flanking the topographical saddle would frame the CPV trackers. In addition, the introduction of individual trackers west of the low saddle area on elevated terrain would contribute lightly colored, boxy forms that would contrast with the gradually descending line and green to brown hues of chaparral-covered terrain. Further, the visual effect associated with CPV trackers would be dynamic as the alignment of individual trackers would shift throughout the day to follow the path of the sun. For example, at certain times of the day, visible CPV trackers would create a seemingly continuous and horizontal line that would slightly resemble that of the natural terrain (see Figure 9) while at other times (i.e., at sunrise and sunset) the angled orientation of trackers would be apparent and would create a somewhat serrated edge that would contrast with the line of existing terrain. During these times, it is anticipated that the form of individual trackers would be visible to passing motorists. Therefore, due to the anticipated dynamic form, line and color contrast created by the introduction of CPV trackers to the topographical saddle area, effects to the existing unity displayed in the Key View 4 landscape would be moderately high.

Viewer Response (Rating 3.5)

Motorists including residents, commuters, and tourists are the most likely viewers of proposed project features from Key View 4. Based on interstate speed of travel, duration of exposure, and assumed focus on the roadway before them, motorists typically have a low sensitivity to visual changes in the environment. However, as discussed previously, Interstate 8 is an eligible state scenic highway and is included in the County scenic highway system and therefore, in comparison to roadways lacking scenic designation, the interstate possess sensitive scenic resources of value. Because project features would be located at a foreground viewing distance and framed by

Rugged Solar LLC Project Visual Resources Technical Report

surrounding terrain (and due to a lack of intervening screening vegetation), viewer awareness of the Project from Key View 4 is anticipated to be moderate to moderately high.

Resulting Visual Impact

As viewed from Key View 4, CPV trackers would create visible contrast in form, line, and color with surrounding terrain and vegetation. The lack of man-made development in the interstate adjacent landscape and the scenic designation of the interstate are anticipated to heighten viewer sensitivity and visual response to changes occurring in the Key View 4 landscape. Further, framing CPV trackers in a topographical saddle would tend to attract the attention of passing motorists would increase the visual prominence of project features. In addition, the color contrast produced by the bright surface of trackers would be apparent to passing motorists and the shifting alignment of trackers throughout the day would create a dynamic visual effect associated with line and form. As shown in Figure 9, at certain times during the day tracker alignment would create a seeming continuous and horizontal form but at other times (such as sunrise and sunset) the diagonal angle of trackers turned towards the horizon could create a serrated edge effect. Therefore, due to the dynamic nature of anticipated form, line, and color contrast, modification of the natural topographical saddle, and interruption of the unity and intactness of the existing Key View 4 landscape, the resulting visual impact is assessed as moderately high.

4.3.1 Viewer Groups

As discussed under Section 2.1, Land Use Designations and Zoning, land uses surrounding the Project site support a mixture of public and private lands, agricultural uses, rural uses, and streets and roadways. These land uses yield the following viewer groups: motorists, recreationists, and residents. More specifically, Interstate 8 (which runs south of the Rugged Solar Farm project site) provides motorists with intermittent and partially obstructed views of the site. McCain Valley Road also provides local access for recreationists to BLM-managed lands, including the McCain Valley National Cooperative Land and Wildlife Management Area located north of the project site, draws hikers, sightseers, recreational shooters, OHV users, and other recreational visitors and provides recreationists with foreground views of the project site. Finally, residential viewer groups scattered throughout the Project vicinity have open to partially obstructed foreground to middleground views of the Rugged site. However, these are private residences, not public viewpoints, and are not generally considered or analyzed under CEQA.

Motorists (Mobile Groups)

The presence of local public roadways including McCain Valley Road and regional routes such as Interstate 8 in the project area viewshed suggests that mobile viewers (i.e., motorists)

Rugged Solar LLC Project Visual Resources Technical Report

should be considered in the discussion of viewer groups. Motorists on McCain Valley Road with views of the project are anticipated to be comprised of recreationists because this road is the primary access route into the McCain Valley Cooperative Land and Wildlife Management Area and the Lark Canyon OHV area. Local residences are located off of McCain Valley Road between Interstate 8 and the McCain Valley Conservation Camp. These viewers are not anticipated to drive north of the conservation camp where project visibility begins on McCain Valley Road. Motorists on Interstate 8 are comprised of residents, recreationists, and people passing through the region.

Recreationists

Recreationists (hikers, campers, sightseers, recreational shooters, and OHV users) on BLM-managed lands located north of the project site are also considered a distinct viewer group in the Project area. Although the campsites are not within direct view of the Project, travel southbound on McCain Valley Road north of the County maintained section afford intermittent view of the project starting 1 mile north of the Project. Views are generally not available to OHV riders due to the level of concentration required to navigate the sinuous trails. However, one or two informal viewing areas are present about a mile north of the project where OHV trail users can stop off a trail to observe views to the south. Both Sunrise Powerlink and Kumeyaay Wind Farm are visible from the same viewing locations at a distance of 1 mile and 3 miles, respectively. Recreationists intent on camping at Cottonwood campground are expected to have greater sensitivity to visual change that are recreationists who are visiting the area for OHV recreation.

Residential Groups

Residences in the immediate vicinity are generally located west and southwest of the Project site and residents at these locations would be afforded unobstructed views of the project site. In addition, more distant residences are located in the viewshed and have varying levels of the visibility to the project site (topography, vegetation, and orientation factor in determining the visibility of the project site from near and distant residential viewing locations). Views from private residences are not analyzed in this CEQA process and there are very limited views of the project from public roads used to access these residences. Therefore, local residents' exposure to the project site is anticipated to be similar as motorists on Interstate 8 or McCain Valley Road. Local residents are anticipated to have high sensitivity to changes in the visual resources of the area.

Rugged Solar LLC Project

Visual Resources Technical Report

4.3.2 Viewer Sensitivity

Viewer sensitivity is associated with the viewer's concern for and response to change in the visual environment. Activities such as commuting in heavy traffic can distract an observer from many aspects of the visual environment. On the other hand, recreational driving can encourage an observer to examine the landscape more closely and at greater length, thereby increasing the observer's attention to detail. The viewer's individual association with the visual environment also determines their sensitivity to change in the viewshed. For example, property owners in the area tend to take ownership of their views because owners have an economic investment, and are consequently more sensitive to change than mobile viewers passing through the area. Thus, sensitivity ratings are based on viewer group activity, awareness, and environmental values that are typically associated with an activity.

As noted previously, motorists typically have a low sensitivity to visual changes in the environment because of the angle of observation, duration of view, previous visual experience, and focus on the roadway. However, interstate highways and local roads are expected to have motorists with different sensitivity levels based on the purpose of travel. For example, McCain Valley Road provides access to the McCain Valley Cooperative Land and Wildlife Management Area that may attract visitors seeking scenic viewing opportunities. The same road is used by off-road recreationists for access to the Lark Canyon OHV area and is considered to have a low sensitivity to visual change. Therefore, viewer sensitivity can be variable along the same travel routes.

The presence of prominent, skylined 150-foot tall steel lattice structures associated with the 500 kV Sunrise Powerlink Project and located adjacent to McCain Valley Road will, to a degree, desensitize viewers and lower the visual expectations of motorists along this roadway. Similarly, long duration views of the Kumeyaay Wind Farm and views of other renewable energy projects in the area, such as the ECO Substation, including the 138 kV ECO Transmission Line between the ECO Substation, the Rebuilt Boulevard Substation, the Tule Wind project, and the Energia Sierra Juarez Gen-Tie project, will have an effect on viewer perception of future changes in the landscape.

4.3.3 Viewer Exposure

Viewer exposure is typically assessed by gauging the number of viewers exposed to the visual change, the type of viewer group activity, the duration of view, the speed at which the viewer moves, and the position of the viewer (see Table 3). For example, although a greater volume of motorists travel along Interstate 8 than on local area roadways such as McCain Valley Road (approximate average daily traffic on Interstate 8 in the project area is 11,433 vehicles (Caltrans

Rugged Solar LLC Project Visual Resources Technical Report

2012) as opposed to 110 daily vehicles on McCain Valley Road (Dudek 2011)), motorists on the interstate are afforded intermittent, brief, partially obstructed, and distant views of the project site. And while a smaller volume of motorists travel on local area roadways, view exposure would slightly greater due to reduced speeds (increased view duration) and closer proximity. Given the concepts discussed above, it is anticipated that the largest proportion of daily viewers of the Project would be exposed for the shortest duration based on their vantage point from and travel speed along Interstate 8. In addition, intervening topography (i.e., road cuts, mounds, etc.) also reduce the availability of long-duration views and viewer exposure along Interstate 8. Table 2 summarizes viewer exposures.

View duration for east bound motorists on Interstate 8 is limited to three view windows that expose the viewer for 3.5, 4, and 8 seconds based on a posted travel speed of 70 miles per hour (aggregate viewing duration for eastbound motorists would be approximately 15.5 seconds). These views are experienced at a distance from the nearest CPV tracker at 1.1 miles, 0.95 mile, and 1.4 miles, respectively. Westbound traffic will be exposed to the southernmost extension of the project on two view windows lasting 18 and 43 seconds at a distance of 0.6 mile and 0.8 to 1.1 miles, respectively (aggregate viewing duration for westbound motorists would be approximately 61 seconds).

Viewing distances from publically accessible locations along the surrounding roadways range from 0.1 to 0.25 mile along McCain Valley Road; 0.25 mile along Ribbonwood Road; and 0.5 to 1 mile from Interstate 8. For northbound viewers on McCain Valley Road, the project features located east of the road would have unobstructed foreground views of CPV trackers at a distance of approximately 0.07 mile (400 feet) for approximately 58 seconds assuming a travel speed of 35 miles per hour. Southbound motorists would have unobstructed foreground views of CPV trackers on both sides of the road for 9 seconds at a distance of 0.26 mile. Foreground views of the western CPV trackers would last for 15 seconds at a distance of 0.26 mile before being obscured by a grove of oaks. CPV trackers east of McCain Valley Road would be visible for 48 seconds at a distance of 0.07 mile.

A brief view of the CPV trackers will be possible from Ribbonwood Road approximately 1.2 miles north of Interstate 8. This unobstructed view will last for approximately 17 seconds at a distance of 0.25 mile assuming a travel speed of 35 miles per hour. However, due to road conditions (curves and crossing over a ridge with limited road visibility) at this location, viewer awareness and focus on the CPV trackers is limited.

Viewing distances from surrounding residences to the project site range from 0.15 to 0.30 mile. However, private residences are not afforded Federal or State regulatory protection from potential visual impacts.

Rugged Solar LLC Project

Visual Resources Technical Report

Finally, direct viewing opportunities from publically accessible lands including the McCain Valley Cooperative Land and Wildlife Management Area are extremely limited. No views from established campgrounds are present. Views from OHV trails are possible, but viewer awareness is considered to be very low due to the concentration demanded of riders while negotiating narrow, sinuous trails. Stopping on OHV trails is unlikely due to the danger of collision posed from other trail users. Therefore, views would be intermittent. However, two potential rest/viewing areas were identified at a distance of 1 mile north of the project. Viewer orientation is facing south resulting in backlit conditions that would place the view in the background view distance. A summary of viewer exposure is provided in Table 2, below.

Table 3
Summary of Viewer Exposure

View Group	View Duration	View Distance	View Type	Skylined View
I-8 Motorist (eastbound @ 70 mph)	3.5 sec.	1.1 miles	Background	No
	4 sec.	0.95 mile	Middleground	No
I-8 Motorist (westbound @ 70 mph)	43 sec.	0.8-1.5 miles	Middleground	Yes
	18 sec.	0.6-0.7 mile	Middleground	Yes
McCain Valley Road Motorist (northbound @ 35 mph)	58 sec.	0.07 mile	Foreground	Yes
McCain Valley Road Motorist (southbound @ 35 mph)	15 sec.	0.26 mile	Foreground	No
	46 sec.	0.07-.8 mile	Foreground	No
Ribbonwood Road motorist (north and southbound at 35 mph)	17 sec.	0.25 mile	Foreground	No

4.3.4 Viewer Awareness

Anticipated viewer awareness is determined based on the degree to which a viewer group is receptive to the visual details, character, and quality of the surrounding landscape. A viewer's ability to perceive the landscape is affected by his/her activity on the landscape. For example, a nonlocal recreationist may take pleasure in sightseeing and observing the landscape, a resident may be strongly attached to the view from his/her home, and a commuter travelling through the area may be as perceptive to the landscape as a resident (ancillary exposure on a daily basis results in mixed reactions and perceptions).

Interstate 8 motorists travel a high speed that reduces view duration. Vehicle operators are also occupied with navigating the roadway and traffic as opposed to passengers. Motorists on local roads have moderate to high awareness of the landscape in which they are driving due to slower travel speed, longer view duration, and often foreground project views. Motorcycle riders on OHV trails have low awareness of their surroundings while navigating narrow sinuous trails through the landscape. The awareness of these riders increases to a moderate level when riders

Rugged Solar LLC Project Visual Resources Technical Report

are stationary at viewpoints located north of the Project. However, these stationary periods are likely to be of short duration before trail riding is resumed.

Therefore, with consideration given to viewer groups, activities, and perception-modifying factors such as motorist speed, viewing duration, viewer orientation, and the existing visual experience, overall viewer awareness of the Project is anticipated to be moderate.

Rugged Solar LLC Project

Visual Resources Technical Report

5.0 VISUAL IMPACT ASSESSMENT

This assessment of visual impact was conducted using the FHWA Visual Impact Assessment (FHWA 1981), the BLM's Visual Resource Management, and the U.S. Forest Service's Scenery Management Systems. The assessment was completed through field observation, a desktop analysis of field-based photography and Google Earth Imagery, a review of a geographic information system (GIS)-based viewshed analyses conducted for Project features and Key Views, and visual simulations of the Project.

5.1 Guidelines for Determining Significance

The following significance guidelines provide guidance for the evaluation of significant impacts to visual resources that would result from implementation of the Project. According to the County of San Diego Guidelines for Determining Significance (Visual Resources), a project is considered to have a significant effect on visual resources if it would result in any of the following:

- The project would introduce features that would detract from or contrast with the existing visual character and/or quality of a neighborhood, community, or localized area by conflicting with important visual elements or the quality of the area (such as theme, style, setbacks, density, size, massing, coverage, scale, color, architecture, building materials) or by being inconsistent with applicable design guidelines.
- The project would result in the removal or substantial adverse change of one or more features that contribute to the valued visual character or image of the neighborhood, community, or localized area, including designated landmarks, historic resources, trees, and rock outcroppings.
- The project would substantially obstruct, interrupt, or detract from a valued focal and/or panoramic vista from a public road, a trail within an adopted county or state trail system, a scenic vista or highway, or public recreational area.
- The project would not comply with applicable goals, policies, or requirements of a county community plan, subregional plan, or Historic District's zoning related to visual quality.

These four guidelines address Appendix G of the CEQA Guidelines for Determination of Significance in the following ways. The first guideline protects the existing visual character and visual quality by rejecting adverse changes or contrasts. This guideline ensures that the community and/or neighborhood would maintain its particular character, which is likely to be a rural setting or country town.

Rugged Solar LLC Project Visual Resources Technical Report

The second guideline addresses potential substantial damage to particular scenic resources that characterize or represent a community or neighborhood. Loss or damage to one or more particular resources could substantially alter visual character and may also degrade the visual quality.

The third guideline addresses potentially substantial adverse effects from travel ways, to recreational areas and particular scenic vistas. Many viewers experience scenic views from public vantage points, such as roads and trails. Some scenic views are of such public importance that highways and viewpoints can be designated as scenic by the county or Caltrans (for state routes). Adverse changes to these resources could be significant depending on the nature and degree of the change, and whether the view is obstructed.

The fourth guideline was developed to maintain the visual character and quality of communities and neighborhoods currently regulated by the county's General Plan and/or Zoning Ordinance. Projects that substantially stray from the regulations listed in the General Plan and/or Zoning Ordinance may result in significant adverse effects, depending on the degree of variation.

Cumulative impacts are also evaluated for the first three guidelines because a project may contribute to a significant adverse cumulative effect even though the project itself does not cause a significant adverse impact.

5.2 Assessment of Visual Character and Visual Quality

5.2.1 Assessment of Visual Character

As described previously, by definition, built features in a natural setting would change the character of the setting. Several built elements have already contributed to this change, including the Interstate 8 corridor; structures including ranches, private residences, commercial and industrial buildings; and energy infrastructure, including high-voltage transmission towers/lines and Kumeyaay Wind Farm turbines. With regard to the Project site specifically, the introduction of the Project would replace and potentially increase some existing areas of high contrast in the landscape, and without mitigation, would irrevocably alter the rural, underdeveloped character surrounding the site.

Implementation of the Project could jeopardize Interstate 8 eligibility for state scenic highway designation. Scenic highway designation is dependent upon cumulative changes in landscape quality over the entire distance of the highway segment being considered for designation. Existing energy infrastructure already diminishes scenic quality in the Project area, and the addition of CPV trackers will have an incremental affect to further diminish scenic resources. However, views of the project from the highways are limited, and the overall change in landscape character from the highway would not be imposing on motorists. Therefore, the

Rugged Solar LLC Project Visual Resources Technical Report

potential change will represent a minimal incremental reduction in the overall character and scenic quality of the highway segment that stretches to the California–Arizona Border.

5.2.2 Assessment of Visual Quality

As described above, it is anticipated that substantial changes in visual quality would occur at Key Views 2 and 3. At Key View 1, the Project would have the greatest effect on vividness, while at Key Views 2 and 3, it would have the greatest effect on unity. For Key View 1, impacts to intactness and unity are slightly less due to the small portion of the Project features that will be visible to viewers and low viewer exposure factors (high speed, low duration). At Key Views 2 and 3, intactness is impacted less because of the foreground presence of steel lattice towers and land alterations caused by past and existing land use that have already lowered the intactness of the landscape. Vividness is not affected as much as unity because the expansive views presented to the viewer remain. Views from all three Key View locations would be altered by built features that introduce lasting contrast with the surrounding visual environment or otherwise encroach upon the vividness, intactness, and unity of existing visual quality of the McCain Valley.

5.3 Assessment of Viewer Response

Construction

Construction activities would be experienced within a foreground to middleground distance. Although the visual impacts associated with the visibility of construction activities against the backdrop of the existing visual landscape would be temporary, they would be relatively extensive (approximately 455 acres of the project site would be disturbed) and noticeable given the topography of the McCain Valley. Although construction operations are generally dynamic in nature and include moving equipment, material stockpiles, and erosion control measures, it is anticipated that the potential viewer response would be moderately high given the viewer groups in the area and variable duration of views to the site.

Operations

Longer term, the Project represents a large-scale energy infrastructure project that would adversely affect visual quality at, and for the years immediately following implementation. The Project is likely to result in a perceived increase in urbanized land uses in the viewshed due to renewable energy projects, diminution of visual quality, and increase in visual contrast from existing conditions. However, as mitigation measures including strategic vegetative screening reached the level of maturity, overall viewer response may be reduced as the visibility of project components would become less apparent.

Rugged Solar LLC Project Visual Resources Technical Report

5.4 Determination of Significance

Due to operational necessity, the proposed CPV tracker technology requires minimized surface reflectivity and relies upon an automated process of continuous realignment to most efficiently collect and convert solar energy. Because of these considerations, it is anticipated that direct glare from the proposed trackers would normally be reflected back into the atmosphere, however, as noted below, glare may be received by residences and motorists on roadways located near the solar farms during the early morning following sunrise and late evening prior to sunset. Therefore, in addition to the County of San Diego's Guidelines for Determining Significance – Visual Resources, the County's Guidelines for Determining Significance – Dark Skies and Glare are included in the visual resources impact analysis presented below. More specifically, potential project impacts associated with glare are discussed under Dark Skies and Glare Guidelines 4 and 5, below.

Visual Resources

Guideline 1

The project would introduce features that would detract from or contrast with the existing visual character and/or quality of a neighborhood, community, or localized area by conflicting with important visual elements or the quality of the area (such as theme, style, setbacks, density, size, massing, coverage, scale, color, architecture, building materials, etc.) or by being inconsistent with applicable design guidelines.

Construction of the Rugged solar farm is anticipated to require 18 months for completion during this time period, aesthetic impacts including the presence of construction equipment and personnel on site and on area roadways, the generation of dust, and nighttime lighting would occur. Also, due to the geographical extent of the viewshed (see Figure 4), construction activities and effects would be visible to several viewer groups including McCain Valley residents (the majority of which are located west of the Rugged site), several residents located south of Interstate 8 and Old Highway 80 in the Boulevard area, recreationists in the higher elevation areas of the public recreation lands to the north, and motorists on Interstate 8 and local area roadways. Increased activity and movement on the Rugged site and on surrounding roadways and the transformation of the existing landscape by vegetation removal and mass grading would produce noticeable visual contrast with the surrounding area. While construction activities and resulting visual effects would be noticeable to residents and motorists, impacts would be of relative short duration (i.e., would occur over an 18-month period) and intermittent.

The following project design feature (PDF) would be implemented during construction activities for the Rugged solar farm in order to reduce anticipated aesthetic impacts.

Rugged Solar LLC Project Visual Resources Technical Report

PDF-VIS-1 Staging material and equipment storage areas, including storage sites for excavated materials, visible from nearby roads, residences and recreational areas shall be visually screened using temporary screening fencing. Fencing shall be of an appropriate design and color for the Proposed Project location.

Additionally, PDFs addressing air quality impacts would reduce potential effects related to the generation of dust to less than significant, which would also help alleviate any aesthetic impacts relative to dust.

Operation and maintenance of the Rugged solar farm could potentially create visual contrast in form, line, and color that would be most evident when viewed from a foreground viewing distance. For example, as viewed from Key View 2, the rectangular form and lightly colored surface of the trackers and the flat form and smooth texture of the graded site would attract the attention of passing motorists and the repetition in form, line and color would create visible contrast with the variable forms and colors of existing vegetation (see Figure 7). In addition, due to proximity of McCain Valley Road to the Rugged site, repeating tracker rows and the movement of passing cars would create a visual pattern akin to driving alongside orchards or row crops. Also, the vertical scale of trackers would cause these components to break the horizon line (see Figure 7) and at times throughout the day, modules would create a serrated, broken horizon line that would be incongruent with the existing “soft,” slightly curving horizon created by the intersection of vegetated land and sky.

From Key View 3, the Rugged solar farm would be viewed with a highly modified valley in the foreground where vegetation clearing has historically occurred to facilitate grazing, however, trackers, the O&M building, and two water tanks (the O&M building and water tanks are not included in the Figure 8 visual simulation) would be visible from this viewing location and the installation and operation of solar farm components of substantial mass and volume across an expanse of valley floor would result in relatively high contrast with its surroundings. In addition, while not depicted on Figure 8, the 34.5-kV overhead collection cable system (34.5-kV line and steel support structures) would be visible from Key View 3 and these facilities would traverse the landscape from west to east.

The Rugged solar farm components would be mildly discernible when viewed from the middleground viewing distance at Key View 1 (see Figure 6). The scale of development and the lightly colored surfaces of numerous trackers would create a moderately low visual contrast with the existing site and its surroundings. Due to motorist movement and speed, the form of individual trackers would be difficult to detect and visibility of the tracker fields edges would be obscured and relatively vague (approximately 40% of the overall trackers would be visible to eastbound Interstate 8 motorists). Although the Rugged solar farm would constitute a slightly

Rugged Solar LLC Project Visual Resources Technical Report

noticeable change from the red, brown, and yellow colors and rough, patchy texture of existing vegetation to light, cool colors and textures of the solar farm in the visible landscape, it would constitute a significant transition to the visual setting and character from the view of motorists in Key View 1. The contrast would be muted by the limited view duration, distance to solar farm components, and intervening westbound traffic lanes. In addition, eastbound motorists would view the solar farm in close temporal proximity to the industrial Kumeyaay Wind Farm which would tend to reduce their sensitivity to changes in the existing landscape. Therefore, while the installation of trackers and associated solar farm facilities across an expanse of valley floor would introduce additional industrial features, the presence of existing cultural modifications and visually incongruous infrastructure in the immediate vicinity of the area would reduce the resulting visual impact anticipated at Key View 1 to less than significant.

Views of the Rugged site would be available to westbound interstate motorists near the McCain Valley Road overpass and extending in two view windows for 43 seconds followed by an additional 18-second view duration (see Section 4.3, Key Views, above for Key View 4 analysis). Trackers would appear in a low saddle in the natural topography at a distance from 1.5 miles (background view) to 0.6 mile (foreground view), respectively, as motorists move through the area. The trackers and the effects of vegetation removal and grading would be apparent: trackers would break the existing horizon line and at times, the “new” horizon line would appear as a serrated edge that contrasts with the existing flowing line created by the merging of vegetated land and sky. While only a small portion of the solar farm features would be visible from the westbound travel lanes of Interstate 8, the resulting visual effects would be apparent to passing motorists.

Overall, the operation and maintenance of trackers and ancillary project components would increase the level of industrial elements in the landscape which would further alter the existing visual character and quality of the site and surroundings. As such, the proposed project could result in potentially significant impacts to aesthetic resources (VIS-1).

The following PDFs would be implemented during construction activities for the Rugged solar farm in order to reduce visual impacts.

PDF-VIS-2 In the southernmost parcel of the Rugged site, pull back project grading and remove trackers from the natural saddle that occurs on the southern parcel and would likely be visible to westbound Interstate 8 motorists. In-place existing natural vegetation shall be avoided and protected to act as a low screen and provide topographic and vegetative continuity across the saddle area. Additional shrub plantings (fire resistant and a maximum height 6 feet) shall also be included in the area to reinforce vegetation line across the saddle.

Rugged Solar LLC Project Visual Resources Technical Report

PDF-VIS-3 The O&M building shall be painted/finished with muted-earth toned colors. Materials, coatings, or paints having little or no reflectivity shall be used whenever possible. New overhead conductors shall be nonspecular in design to reduce conductor visibility, glare, and visual contrast.

PDF-VIS-2 (see Figure 10) would reduce visibility of the project from Interstate 8 and as a result, anticipated visual contrast associated with CPV trackers and existing vegetation and terrain as viewed from the interstate would be reduced. In addition, implementation of PDF-VIS-3 would reduce anticipated color contrast between the O&M facility and natural features in the surrounding landscape and would reduce project-generated glare associated with the overhead collection system.

Significance of Impact

The Project would introduce visual elements that contrast with the rural landscape themes and character in terms of color, scale, mass and volume. Without the incorporation of Mitigation Measures, the Project would result in a potentially significant impact to existing visual character and quality as it pertains to Guideline 1.

Mitigation Measures

Incorporation of landscape screens along the outer edge of the project east and west of McCain Valley Road (Mitigation Measure M-VIS-1) as specified in Section 6.0, Visual Mitigation and Design Alternatives, and in greater detail in the Landscape Screen Design Report for the Soitec Solar Development Program EIR (Dudek 2013) would break up the mass and scale of trackers, block views of trackers and other project component from critical mobile and stationary viewpoints, and create visual interest to divert attention away from trackers. However, the complete screening of views from public viewpoints to the proposed solar facilities is not possible as CPV trackers (approximate height of 30 feet above ground surface) would rise above the crowns of installed trees and shrubs. Trackers would also remain partially visible beyond the landscape screen due to the plant density limitation that is required to achieve wildfire protection standards. Therefore, because landscape screens would be incapable of fully screening project facilities from view and because mitigation measures that would further reduce anticipated visual impacts were determined to be infeasible or ineffective (see Section 5.7, Summary of Project Impacts, Significance and Conclusions), impacts to existing visual character and quality would remain significant and unmitigable (VIS-1).

Rugged Solar LLC Project Visual Resources Technical Report

Guideline 2

The project would result in the removal or substantial adverse change of one or more features that contribute to the valued visual character or image of the neighborhood, community, or localized area, including but not limited to landmarks (designated), historic resources, trees, and rock outcroppings.

Impact Analysis

There are no designated scenic features (e.g., landmarks, historic resources, prominent rock outcrops, etc.) at the Project site; however, as discussed above under Guideline 1, the overall valued visual character that is prominent and accessible throughout the McCain Valley, including the Key View locations, would be substantially altered.

Significance of Impact

As there are no designated scenic features (e.g., landmarks, historic resources, prominent rock outcrops, etc.) at the Project site, impacts to existing visual character and quality as it pertains to Guideline 2 would be less than significant.

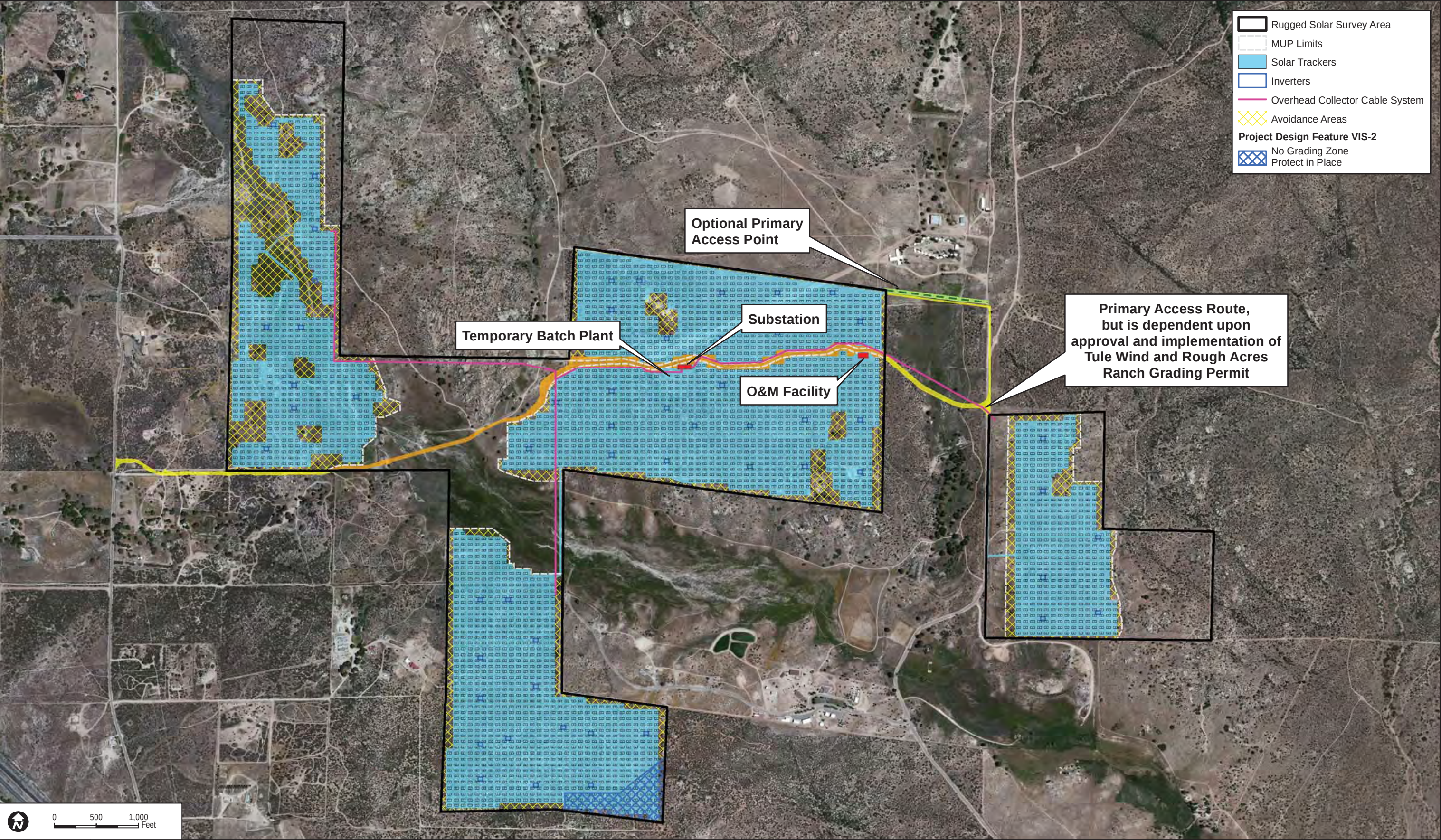
Mitigation Measures

As discussed above, impacts were determined to be less than significant and therefore, no mitigation measures are required.

Guideline 3

The project would substantially obstruct, interrupt, or detract from a valued focal and/or panoramic vista from:

- a public road,
- a trail within an adopted County or State trail system,
- a scenic vista or highway, or
- a recreational area.



INTENTIONALLY LEFT BLANK

Rugged Solar LLC Project

Visual Resources Technical Report

Impact Analysis

Wide, panoramic views of the McCain Valley, In-Ko-Pah and Sierra de Juarez Mountains are available to eastbound I-8 motorists as they traverse the Tecate Divide and descend into McCain Valley (see Key View 1). Views of the Rugged solar farm would be available to motorists however, the presence of road cuts that effectively enclose the environment visible from the interstate as well as wide panoramic views to the southeast and south may limit the potential for scenic vista impacts and draw viewer attention away from the McCain Valley. In addition to I-8, the Rugged solar farm would be intermittently visible along short segments of Old Highway 80 generally east of McCain Valley Road. Both I-8 and Old Highway 80 are included in the County Scenic Highway System. As discussed above in Section 2.1.1, the Rugged solar farm would be partially visible to eastbound I-8 motorists for approximately 15.5 seconds and for approximately 61 seconds for westbound I-8 motorists. The details of solar farm components would not be overly discernible when viewed from the eastbound travel lanes of I-8. Due to motorist movement and speed, the form of individual trackers would be difficult to detect and visibility of the tracker fields edges would be obscured and relatively vague (approximately 40% of the overall trackers would be visible to eastbound I-8 motorists). As shown on Figure 6, the scale of the solar farm development and the lightly colored surfaces of trackers in the McCain Valley would however, be visible to motorists.

While motorists would be afforded views of the Rugged project site, the resulting visual contrast between the solar farm facility and the surrounding landscape would be muted by a limited view duration. In addition, the distance between eastbound travel lanes and the project site would reduce the apparent scale of individual solar farm components (see Key View 1) and intervening westbound traffic would occasionally screen the project site from view. Further, where views are available, eastbound motorists would experience the Rugged solar farm in close temporal proximity to the Kumeyaay Wind Farm which could reduce their overall sensitivity to changes in the landscape. Therefore, while the lightly colored surfaces of trackers would be momentarily visible to eastbound interstate motorists, views would be of a limited duration and would be partially screened by intervening topography and interstate traffic. In addition, views of the In-Ko-Pah Mountains to the east would be maintained following project implementation and long, broad views to the south and southeast would also be available to motorists as they pass the Tecate Divide and drop into the McCain Valley area. Therefore, the Rugged Solar Farm would not obstruct or interrupt from a valued focal point or panoramic vista as viewed from eastbound Interstate 8 and impacts would be less than significant.

In addition, views of the Rugged site would be available to westbound interstate motorists near the McCain Valley Road overpass and extending to two view windows for 43 seconds followed by an additional 18-second view duration. The trackers would appear in a low saddle in

Rugged Solar LLC Project Visual Resources Technical Report

the natural topography at a distance from 1.5 miles (background view) to 0.6 mile (foreground view), respectively, as motorists move through the area (see Key View 4). The addition of trackers and the effects of vegetation removal and grading would be apparent: trackers would break the existing horizon line and at times, the “new” horizon line would appear as a serrated edge that contrasts with the existing flowing line created by the merging of vegetated land and sky. While only a small portion of the total solar farm features would be visible from the westbound travel lanes of Interstate 8, the alteration of the low saddle area and the installation of trackers to the horizon line would be apparent to passing motorists. Therefore, due to the anticipated visibility of trackers to westbound interstate motorists, the implementation of the Rugged Solar Farm may result in a visual contrast between trackers, the graded, denuded site and existing topography and vegetation in the area.

As previously discussed, PDF-VIS-2 would be implemented during construction in order to reduce impacts to existing views available from the westbound travel lanes of Interstate 8. With implementation of PDF-VIS-2, CPV trackers and the visual effects of grading and vegetation removal associated with the Rugged solar farm would not be visible from the westbound travel lanes of Interstate 8 and existing views of the landscape located north of the interstate would be maintained.

Broad, panoramic views of the McCain Valley are briefly available to motorists along McCain Valley Road. McCain Valley Road. Upon exiting public lands managed by the BLM and transitioning from the dirt surface of McCain Valley Road to the County-maintained paved portion, southbound motorists are afforded broad views of the McCain Valley along an approximate 0.2-mile segment of the road. West-oriented views are available and then are quickly interrupted by a short earthen berm populated with oak trees. A similar view is afforded to northbound motorists as the valley landscape framed by the Tecate Divide and an expansive sky is briefly revealed upon passing the vegetated earthen berm located east of Rough Acres Ranch. Implementation of the Rugged solar farm would entail the construction and operation of a 34.5-kV overhead collection system supported by steel poles (between 50–75 feet in height) some of which would span McCain Valley Road north of the aforementioned berm area. Steel support structures would also be located to the west of McCain Valley Road and within the solar farm boundary. Lastly, as they travel through the viewing windows discussed above, motorists would be afforded views of the site’s perimeter fencing and the graded and leveled solar farm populated with repetitive rows of trackers. The O&M building (approximately 24 feet in height) would be surrounded by rows of taller trackers and therefore, the facility may be somewhat obscured.

While the installation of trackers and associated solar farm facilities would be visible to motorists along segments of McCain Valley Road, viewing opportunities to the solar farm and

Rugged Solar LLC Project Visual Resources Technical Report

the McCain Valley would be relatively limited and brief. In addition and as discussed above, broad views of the McCain Valley and solar farm facilities from McCain Valley Road would be intermittently screened by intervening an intervening landform and vegetation. Further and as viewed from McCain Valley Road, trackers on the Rough Acres Ranch property would display a relatively horizontal form and line and as shown on Figure 7, trackers would not rise above the western horizon line and obstruct views of the Tecate Divide and the expansive desert sky. Therefore, as viewed from McCain valley Road, the Rugged Solar Farm would not obstruct or interrupt from a valued focal point or panoramic vista and impacts would be less than significant.

In addition to Interstate 8 and McCain Valley Road, the Rugged solar farm would be intermittently visible from the westbound lanes of Old Highway 80 (the highway and the interstate are included in the County Scenic Highway System). Between an approximate 1.5-mile segment of Old Highway 80 between the old Bankhead Springs hotel that is no longer in operation and McCain Valley Road (a distance of approximately 1.5 miles), westbound motorists on Old Highway 80 may be afforded intermittent, partially obstructed, inferior angle views of southernmost area of the Rugged solar farm which would be located at an approximate distance of 2.3 miles. From the highway, views to the south are dominated by exposed granite boulders and chaparral vegetation dotted hills (local electrical distribution and telephone infrastructure is also visible from the highway) and views to the north and east are comprised of similar elements and sloping terrain. Distant views of the site may be momentarily available from elevated segments of the highway prior to the descent towards the LanEast site however, between the LanEast site and McCain Valley Road, views of the solar farm would be obscured by the elevated travel lanes of I-8, intervening topography located north of I-8, and distance. Views to the project site from the eastbound travel lane of Old Highway 80 between Ribbonwood Road and McCain Valley Road are generally not available due to the presence of mature oak trees along the roadway, intervening landforms, residential and commercial structures and the elevated travel lanes (and traffic) of I-8. Therefore, the Rugged solar farm would not substantially obstruct, interrupt, or detract from a valued focal and/or panoramic vista available to motorists on Old Highway 80 and impacts would be less than significant.

As shown on the project viewshed map (see Figure 4), views of the project site may be available to motorists on the eastbound SR-94 between Tierra Del Sol Road and the confluence of Old Highway 80 and the state route. Along this approximate one-mile segment of SR-94, rising terrain and dense chaparral vegetation partially obscure northeasterly views to the Rugged Solar Farm site. Where brief, passing views would be available, distance would decrease the apparent scale of project components (the project site is located approximately 2 miles to the northeast) and trackers would not interrupt or obstruct northeasterly and easterly scenic views of the In-Ko-Pah Mountains and other prominent landforms in the background viewing distance. Because the

Rugged Solar LLC Project Visual Resources Technical Report

western boundary of the Rugged solar farm would be located approximately 1.75 miles northeast of the confluence of SR-94 and Old Highway 80, the Rugged solar farm site and project components would not be located on the field of vision of westbound motorists and therefore, views of the project are not available from the western travel lane of SR-94. As such, focal and/or panoramic vista impacts from SR-94 would be less than significant.

The inclusion of tall, rectangular trackers featuring straight, repetitious lines, and smooth, manufactured textures associated with the Rugged solar farm could potentially detract from the overall scenic quality of the site however; it would not diminish the scenic value of designated focal points or panoramic vistas available from recreation areas. Designated focal points within the BLM-managed McCain Valley Conservation Area include the Sacatone Overlook (approximately 2 miles northeast of the project site) and the Carrizo Overlook (approximately 5 miles north of the project site). Due to intervening topography associated with the southern extent of the In-Ko-Pah Mountains, the Rugged solar farm would be effectively screened from view from these locations. As shown on Figure 4, the Rugged solar farm may also be visible to recreationists at BLM-managed lands within the McCain Valley Conservation Area; however, OHV users would be afforded brief, passing views of the site from a limited number of trails and dispersed recreationists would be afforded intermittent views of solar farm due to intervening topography. In addition, from elevated viewing locations to the north, solar farm components would not substantially obstruct or interrupt views of prominent background features such as distant mountainous terrain and would not obstruct views of the wide, expansive sky. Also, views of the project from atop Mt. Tule (located approximately 2 miles east of McCain Valley Road) would be available however, solar farm development would comprise a small percentage of the land area within the viewshed. Views from Mt. Tule are panoramic in nature and although the Rugged solar farm would be visible in a portion of the valley landscape to the west, views of mountainous terrain to the north and long, broad views of the desert landscape to the east and south are also available. Further, due to the superior angle of view afforded to viewers atop Mt. Tule, components of the Rugged solar farm would appear as relatively horizontal features on the valley floor and would not obstruct the long, scenic views to the western horizon and the Tecate Divide. In addition, the lack of trailhead or parking area signage for trails to the summit at the entrance to the BLM McCain Valley Conservation Area or along McCain Valley Road and the generally rough/poor condition of the narrow, dirt road leading towards the base of Mt. Tule from McCain Valley Road suggests that Mt. Tule and any trail(s) to the summit are not widely used by recreationists. Therefore, for the reasons discussed above, Rugged solar farm impacts to panoramic vistas available from recreational areas would be less than significant.

Rugged Solar LLC Project Visual Resources Technical Report

Significance of Impact

As discussed above, with implementation of relevant PDFs scenic vista impacts as they pertain to Guideline 3 would be less than significant.

Mitigation Measures

Impacts to scenic vistas would be less than significant and therefore, no mitigation would be required.

Guideline 4

The project would not comply with applicable goals, policies or requirements of an applicable County Community Plan, Subregional Plan, or Historic District's Zoning.

Impact Analysis

The *Rugged Solar Farm General Plan Analysis Report* (Appendix 2.5-2 to the Soitec Program EIR) includes a detailed consistency analysis concerning the Rugged solar farm project and applicable County plans, including the County's General Plan, Mountain Empire Subregional Plan, and the Boulevard Subregional Plan. The Rugged solar farm project would not conflict with applicable visual resource goals and policies found in the County General Plan and the Mountain Empire Subregional Plan (see Appendix 2.5-2). The Rugged solar farm project would also be in conformance with the applicable visual resource goals and policies of the Boulevard Subregional Plan as amended by the Wind Ordinance POD 10-007 General Plan Amendment (GPA 12-003), adopted by the Board of Supervisors on May 15, 2013. However, the Wind Ordinance POD 10-007 has been challenged in court [County Counsel to provide case name and number to reference here]. If the Board of Supervisor's decision is reversed, the project would conflict with several visual resource policies of the Boulevard Subregional Plan, including policies LU-1.1.1, LU-1.1.2, LU-1.1.3, LU-6.1.1, LU-6.1.2, and LU-6.1.3 (see Section 2.5.2 for full text of identified policies). In the event that the Wind Ordinance POD 10-007 General Plan Amendment (GPA 12-003) is reversed, a General Plan Amendment would be processed for the Rugged project requesting an exception for the project from the policies listed above. Therefore, with the proposed General Plan Amendment, the Rugged solar farm project would not result in a conflict with the Boulevard Subregional Plan, Mountain Empire Subregional Plan, or County of San Diego General Plan, and impacts would be less than significant.

Significance of Impact

As stated above, the Rugged solar farm project would be in conformance with the applicable visual resource goals and policies of the Boulevard Subregional Plan as amended by the Wind Ordinance POD 10-007 General Plan Amendment (GPA 12-003), adopted by the Board of

Rugged Solar LLC Project Visual Resources Technical Report

Supervisors on May 15, 2013. In the event that the Wind Ordinance POD 10-007 General Plan Amendment (GPA 12-003), a General Plan Amendment would be processed for the Rugged project requesting an exception for the project from the policies listed above. As such, with the proposed General Plan Amendment, the Rugged solar farm project would not result in a conflict with the Boulevard Subregional Plan, Mountain Empire Subregional Plan, or County of San Diego General Plan, and impacts would be less than significant.

Dark Skies and Glare

The following significance guidelines guide the evaluation of whether a significant impact to dark skies or from glare will occur as a result of project implementation. A project will generally be considered to have a significant effect if it proposes any of the following, absent specific evidence to the contrary. Conversely, if a project does not propose any of the following, it will generally not be considered to have a significant effect on dark skies or from glare, absent specific evidence of such an effect:

Guideline 1

The project will install outdoor light fixtures that do not conform to the lamp type and shielding requirements described in Section 59.105 (Requirements for Lamp Source and Shielding) and are not otherwise exempted pursuant Section 59.108 or Section 59.109 of the San Diego County Light Pollution Code.

Guideline 2

The project will operate Class I or Class III outdoor lighting between 11:00 p.m. and sunrise that is not otherwise exempted pursuant Section 59.108 or Section 59.109 of the San Diego County Light Pollution Code.

Guideline 3

The project will generate light trespass that exceeds 0.2-foot-candles measured five feet onto the adjacent property.

Impact Analysis

Nighttime lighting may be required for construction activities occurring in fall and winter months when sunset would occur prior to 7 p.m.; however, all lighting would comply with the County of San Diego Light Pollution Code Section 59.101 et al. in regards to both general requirements and lamp type and shielding requirements for Class II lighting in Zone A (areas

Rugged Solar LLC Project Visual Resources Technical Report

inside of a 15 mile radius centered on the Mount Laguna Observatory). Implementation of MM-BIO-12 would also minimize potential nighttime construction lighting impacts by restricting the use of lighting adjacent to native habitat.

Class II security lighting and general nighttime lighting would be installed at the on-site private substation yard, next to the entrance door to the substation control house, and at site access gates during the operational phase of the Rugged solar farm. All lighting would comply with the County of San Diego Light Pollution Code Section 59.101 et and would be shielded and directed downward (lighting would also comply with the general requirements of the Light Pollution Code). Lastly, lighting used during the tracker washing process would be transient (trucks would visit each individual module to wash and would not illuminate any one area for a prolonged duration) and lighting would be focused onto the modules as opposed to into the nighttime sky.

Significance of Impact

As discussed above, lighting impacts associated with the Rugged solar farm project would be less than significant.

Mitigation Measures

Because no significant impacts are associated with this Guideline, mitigation measures beyond the proposed Project design features and those measures proposed to satisfy other separate impacts would not be necessary.

Guideline 4: The project will install highly reflective building materials, including but not limited to reflective glass and high-gloss surface color that will create daytime glare and be visible from roadways, pedestrian walkways or areas frequently used for outdoor activities on adjacent properties.

Guideline 5: The project does not conform to applicable Federal, State or local statute or regulation related to dark skies or glare, including but not limited to the San Diego County Light Pollution Code.

Under normal operating conditions, the trackers would be engaged in one of three operational cycles: wake procedure, tracking mode, and sleep procedure. During wake procedure, solar trackers would rotate into an east-facing position prior to sunrise. Once the sun reaches an elevation of 5 degrees, the trackers would follow the sun until it reaches a vertical position facing west 5 degrees (Power Engineers 2013). Throughout the tracking procedure, the position of the tracker would be directly perpendicular to the sun's rays and in a perfect scenario reflections would bounce directly back to the sun. However, to account for slight deviations in panel

Rugged Solar LLC Project Visual Resources Technical Report

tracking movement and surface light scattering, the Boulevard Glare Study assumed a 1 degree light spread from the face of the panel resulting in reflections never lower than 4 degrees off horizon (Power Engineers 2013). Once the trackers reach a vertical position facing west 5 degrees the evening sleep procedure would commence. During the sleep procedure trackers would assume a fixed, near-vertical position and would remain in this position until just before sunrise when the wake procedure commences (Power Engineers 2013). Trackers would also remain in a near-vertical position when the modules undergo cleaning or maintenance.

Impact Analysis

The Boulevard Glare Study identified five residences located within one mile of the proposed solar equipment at the Rugged site as having potential to receive project-generated glare (Power Engineers 2013). All five residences are located between Ribbonwood Road and the westernmost portion of the solar farm (see Figure 6a of the Glare Study, Appendix 2.1-3). Additional residences to the west are located within one-mile of solar equipment however, they would not receive as a result of distance and/or terrain obstruction. More specifically, as distance from the project site increases, so does the elevation of glare that would pass above a given residence and in this instance project-generated glare would pass over several residences located to the west.

The general location of the identified residences, as well as the approximate distances between residences and solar equipment and the approximate height of the elevated view above the Rugged site afforded to each residence, is listed below in Table 4.

Table 4
Identified Residences within One-Mile of Solar Equipment – Rugged

Residence ¹	Location	Proximity to Solar Equipment	Elevated View Above the Rugged Site ²
1	West of project site	955 feet	82 feet
2	West of project site	1,010 feet	83 feet
3	West of project site	1,190 feet	88 feet
4	West of project site	1,176 feet	82 feet
5	West of project site	605 feet	46 feet

Source: Power Engineers 2013

¹ For location of residences please refer to the Boulevard Glare Study

² West of the westernmost portion of the project site (i.e., the Vista Oaks property) the terrain rises in elevation. As such, residences identified as having potential to receive glare are located at a higher elevation than the project site and proposed CPV trackers.

In addition to residents, recreationists on nearby public lands and motorists on McCain Valley Road and Ribbonwood Road would also be afforded views of the project site and may receive project-generated glare. According to the Boulevard Glare Study, glare passes over Interstate 8 in the evening hours due to the distance from the project site and the trajectory of

Rugged Solar LLC Project Visual Resources Technical Report

glare rising as it gets farther away from its source. As such, glare is not anticipated to be received by motorists on Interstate 8. The anticipated glare impacts to residents, recreationists, and motorists is discussed below.

Residents

As shown in Table 4 above, residents located west of the Rugged site and within one mile of solar equipment would likely receive glare generated by the Rugged solar farm. According to the Boulevard Glare Study, glare would be received by five residences located directly west of the Rugged site (more specifically, west of the Vista Oaks property and east of Ribbonwood Road) during the hour leading up to sunset with duration of daily glare exposure less than 45 minutes (Power Engineers 2013). Two of the five residences (Residences 3 through 4) would receive glare throughout the year and the remaining three residences (Residences 1, 2 and 5) would receive glare seasonally. Table 5 presents a worst-case glare scenario for the five identified residences throughout the year and represents the anticipated daily duration of glare exposure during each season.

**Table 5
Maximum Anticipated Glare by Season – Rugged**

Residence	Season ¹			
	<i>Spring</i>	<i>Summer</i>	<i>Autumn</i>	<i>Winter</i>
1	33 minutes (6:23 p.m. to sunset)	43 minutes (7:13 p.m. to sunset)	33 minutes (6:08 p.m. to sunset)	No glare
2	33 minutes (6:23 p.m. to sunset)	33 minutes (7:23 p.m. to sunset)	33 minutes (6:08 p.m. to sunset)	No glare
3	33 minutes (6:23 p.m. to sunset)	31 minutes (7:25 p.m. to sunset)	33 minutes (6:08 p.m. to sunset)	33 minutes (4:11 p.m. to sunset)
4	33 minutes (6:23 p.m. to sunset)	31 minutes (7:25 p.m. to sunset)	33 minutes (6:08 p.m. to sunset)	33 minutes (4:11 p.m. to sunset)
5	No glare	No glare	No glare	43 minutes (4:01 p.m. to sunset)

Source: Power Engineers 2013

¹ Spring Equinox (March 20, 2013, sunset 6:57 p.m.), Summer Solstice (June 21, 2013, sunset 7:56 p.m.), Autumnal Equinox (September 22, 2013, sunset 6:41 p.m.), and Winter Solstice (December 21, 2013, sunset 4:44 p.m.) were analyzed to establish seasonal trends to predict the occurrence of glare throughout the year.

As shown in Table 5 above, the duration of glare exposure throughout the year would be relatively brief. During the spring, summer, and autumn months, the average daily duration of glare exposure at Residences 1, 2, 3 and 4 would be less than 35 minutes and Residence 5 would not be exposed to glare during these seasons. During the winter months, the average daily duration of glare exposure at Residences 3, 4, and 5 would be less than 45 minutes and

Rugged Solar LLC Project Visual Resources Technical Report

Residences 1 and 2 would not be exposed to glare during this season. While the intensity of glare produced by CPV modules would be lower than that of glare produced by man-made surfaces (metal roofs, glass, etc.) and water and the generated reflection values are not considered hazardous to vision (Power Engineering 2013), the project would create daytime glare that would be received at five residences located directly west of the Rugged site. Therefore, according to the County of San Diego glare significance guidelines, impacts would be potentially significant (VIS-2).

Recreationists

At sunrise, glare generated by the Rugged solar farm would be most pronounced on the eastern horizon when trackers would be oriented towards the east to track the rising sun. The BLM-managed Sacatone Overlook is located approximately 2 miles east of the Rugged site and reflected light from trackers would not likely be visible to recreationists at the overlook due to intervening mountainous topography associated with the southern extent of the In-Ko-Pah Mountains. In addition, the valued focal point/panoramic vista from the overlook is to the east which includes foreground views of the Jacumba Mountains, middleground views of the Colorado Desert, and background views of the Imperial Valley. Project-generated glare may be received by recreationists atop the Mt. Tule summit (elevation of approximately 1,416 feet) however, as discussed in Section 2.1.3.1, views from Mt. Tule are panoramic in nature and the lack of trailhead or parking area signage for summit trails and the generally rough/poor condition of the narrow, dirt road leading towards the base of Mt. Tule from McCain Valley Road suggests the summit (and trails) are not widely used by recreationists. As such, glare-related affects to recreationists are not anticipated to be substantial.

Motorists

According to the Boulevard Glare Study, motorists on Ribbonwood Road and McCain Valley Road would receive glare as they travel along the roadways during the hour prior to sunset. Motorists on McCain Valley Road would not receive glare in the early morning hours following sunrise because trackers would be angled towards the eastern horizon line (i.e. the In-Ko-Pah Mountains) and generated glare would pass over the roadway. No glare is anticipated to be received by motorists on Interstate 8 (Power Engineers 2013) as a result of proximity to solar equipment, elevation and orientation of trackers, and screening provided by intervening terrain. On Ribbonwood Road, glare would be received along a 0.5-mile segment of the roadway (milemarker 1.2 – 1.7) as measured south from approximately Opalocka Road and on McCain Valley Road, glare would be received along a 0.2-mile segment of the road (milemarker 1.4-1.6) located adjacent to the easternmost portion of the solar farm site (i.e., the Waterstone property (Power Engineers 2013). The anticipated daily duration of glare exposure along Ribbonwood Road and McCain Valley Road by season is provided by season in Table 6 below.

Rugged Solar LLC Project

Visual Resources Technical Report

Table 6
Maximum Anticipated Glare by Season – Rugged (Motorists)

Milemarker ¹	Season ^{2,3}			
	Spring	Summer	Autumn	Winter
<i>Ribbonwood Road</i>				
M 1-1.1	No glare	No glare	No glare	No glare
M 1.1-1.2	No glare	No glare	No glare	No glare
M 1.2-1.3	No glare	20 minutes	No glare	No glare
M 1.3-1.4	29 minutes	20 minutes	29 minutes	39 minutes
M 1.4-1.5	No glare	26 minutes	No glare	39 minutes
M 1.5-1.6	23 minutes	31 minutes	23 minutes	39 minutes
M 1.6-1.7	23 minutes	20 minutes	23 minutes	39 minutes
M 1.7-1.8	No glare	No glare	No glare	No glare
M 1.8-1.9	No glare	No glare	No glare	No glare
M 1.9-2	No glare	No glare	No glare	No glare
<i>McCain Valley Road</i>				
M 1-1.1	No glare	No glare	No glare	No glare
M 1.1-1.2	No glare	No glare	No glare	No glare
M 1.2-1.3	No glare	No glare	No glare	No glare
M 1.3-1.4	No glare	No glare	No glare	No glare
M 1.4-1.5	37 minutes	No glare	37 minutes	No glare
M 1.5-1.6	37 minutes	No glare	37 minutes	No glare
M 1.6-1.7	No glare	No glare	No glare	No glare
M 1.7-1.8	No glare	No glare	No glare	No glare
M 1.8-1.9	No glare	No glare	No glare	No glare
M 1.9-2	No glare	No glare	No glare	No glare

Source: Power Engineers 2013

Notes:

- ¹ M = mile marker. The Boulevard Glare Study provides the anticipated daily duration of glare received by motorists in 0.10-mile increments. See the Boulevard Glare Study (Power Engineers 2013) for milemaker locations.
- ² Spring Equinox (sunrise 6:49 a.m., sunset 6:57 p.m.), Summer Solstice (sunrise 5:38 a.m., sunset 7:56 p.m.), Autumnal Equinox (6:34 a.m., sunset 6:41 p.m.), and Winter Solstice (6:44 a.m., sunset 4:44 p.m.) were analyzed to establish seasonal trends to predict the occurrence of glare throughout the year. For Ribbonwood Road, glare was recorded in spring and fall between 6 p.m. and sunset, in summer between 7 p.m. and sunset, and in winter between 4 p.m. and sunset. For McCain Valley Road, glare was recorded in spring and fall between 6 p.m. and sunset.
- ³ The duration of glare exposure presented in Table 6 is the total duration exposure over a day.

As shown in Table 6, glare would be received throughout the year by motorists on Ribbonwood Road over an approximate 0.5-mile segment of the road. As stated previously, the duration of glare exposure throughout the year would be no more than 40 minutes a day and because the solar farm would be located east of Ribbonwood Road, project-generated glare would be received in the peripheral field of vision of passing motorists. Further, assuming a travel speed of 35 miles per hour, passing motorists would receive glare for a duration of less than one minute and glare may be periodically screened by intervening terrain and roadside vegetation.

Rugged Solar LLC Project Visual Resources Technical Report

On McCain Valley Road, motorists would also receive glare in their peripheral field of vision as they pass the easternmost portion of the solar farm during spring and fall prior to sunset. Assuming a travel speed of 35 miles per hour, the duration of glare exposure on McCain Valley Road would be brief (approximately 20 seconds) and the potential for glare impacts would be further reduced through implementation of landscape screens along the outer edge of the project site east and west of McCain Valley Road (Mitigation Measure M-VIS-1, see Section 6.0, Visual Mitigation and Design Alternatives, below). While duration of glare exposure would be brief and glare would be received in the peripheral field of vision of passing motorists on Ribbonwood Road and McCain Valley Road, the project would create daytime glare that would be visible from nearby local public roadways. Therefore, according to the significance guidelines established by the County of San Diego, potential glare, potential glare impacts to motorists would be potentially significant (VIS-2).

In addition to glare generated by CPV trackers, buildings and other materials may also generate glare however, structural supports, O&M facilities, and ancillary structures would be color treated with matte, neutral earth-toned colors to limit the anticipated level of contrast and satisfy the Visual Resources Guidelines analyzed above.

Significance of Impact

As discussed above, the anticipated level of impact associated with project-generated glare as it relates to Guideline 4 would be potentially significant.

Mitigation Measures

While implementation of Mitigation Measure M-VIS-1 would entail the installation and maintenance of a landscape screen along the outer edge of the project site boundary east and west of McCain Valley Road, landscaping would not screen glare received by residents located west of the project site and would not fully screen glare received by motorists on McCain Valley Road. Additional mitigation measures to reduce anticipated impacts resulting from exposure to project-generated glare are not available (see Section 5.6 for discussion of additional measures considered but ultimately determined to be infeasible). As such, impacts would be significant and unmitigable (VIS-2).

5.5 Cumulative Impacts

Pursuant to CEQA Guidelines Sections 15130 and 15355, this section analyzes the significance of the Project's visual impact on a cumulative level. According to CEQA Guidelines Section 15335(b), the cumulative impact from several projects is the change in the environment that results from the incremental impacts of the Project when added to other closely related past, present, and reasonable foreseeable future projects. Cumulative impacts can result from

Rugged Solar LLC Project Visual Resources Technical Report

individually minor but collectively significant impacts taking place over a period of time. The cumulative impacts analysis presented below is based on the potential effects of the Project when added to impacts from other actions in the vicinity of the Project site.

Connected Actions

There are no connected actions associated with the Project.

Methodology

For purposes of this cumulative impact analysis, cumulative visual effects are evaluated for the period of construction and for the post-construction (operations) period of the Project. The McCain Valley viewshed serves as the physical boundary for determining cumulative visual effects, however the cumulative study area boundary should be considered roughly synonymous with that of the Mountain Empire Subregional Plan.

This boundary includes the Project-specific viewshed and areas to the south, incorporating the community of Boulevard and other lands along the Interstate 8 corridor (see Figure 11, Cumulative Projects Map). This was determined to be an appropriate cumulative boundary based on the type and geographic extent of the Project's visual impacts, further described below, and because it would encompass projects that would have the potential to change the visual character along Interstate 8 and McCain Valley Road as motorists travel through the valley and approach the Project site.

As stated above, an individual project may contribute to cumulative impacts when the project's incremental impacts are added to other closely related past, present, and reasonably foreseeable future projects. The term "reasonably foreseeable" refers to projects that federal, state, or local agency representatives have knowledge from pre-application meetings or the formal application process. Three projects have been identified within the McCain Valley viewshed, however similar alternative energy projects have been proposed within the surrounding subregional context. The projects in the cumulative scenario are new renewable-energy generation and transmission projects similar to the Project. A review of San Diego County's GIS-based discretionary projects database and KivaNet Land Information permitting system revealed that there are no recently approved, pending, or future projects under the County's jurisdiction in the cumulative study area (SanGIS 2009).

Reasonably Foreseeable Projects

The following projects have been identified as reasonably foreseeable within the temporal and spatial limits established for this cumulative impact analysis. Other energy and transmission projects have been identified along the Interstate 8 corridor; however, none are within the

Rugged Solar LLC Project Visual Resources Technical Report

general McCain Valley cumulative analysis viewshed (as defined above), but are identified for project scale and geographical context on Figure 11.

Iberdrola Tule Wind Project

Iberdrola Renewables has proposed to construct a 200-MW wind energy project in the McCain Valley area. A 138-kV transmission line is proposed to run parallel to the Sunrise Powerlink right-of-way along McCain Valley Road until it intersects with Old Highway 80. At Old Highway 80, the proposed transmission line would run westward along Old Highway 80 to a terminus at the Boulevard Substation.

All Tule Wind project facilities would be located within the cumulative impacts study area (i.e., McCain Valley). The Final EIR/EIS for this project identified significant and unmitigable impacts for visual resources due to the introduction of visual elements that would be incongruent with the setting and would impact visual quality at a number of key views.

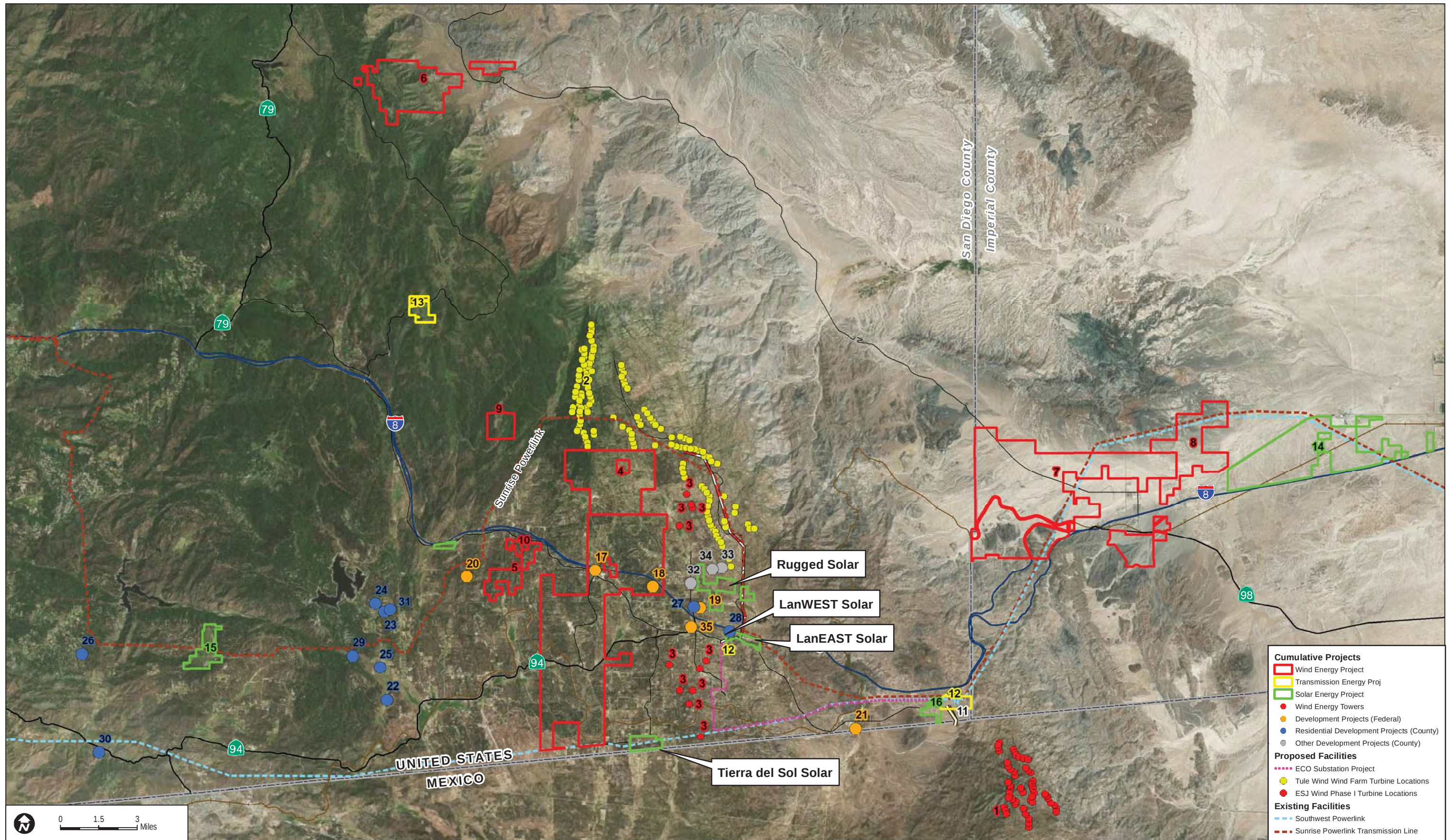
Manzanita Wind Project

The Manzanita Tribe proposes a project capable of generating up to 57.5 MW, which could include up to 25 wind turbines depending on the turbine size selected. These wind turbines are proposed to be located on the same ridgeline as the existing Kumeyaay Wind facility. Turbines are proposed to be approximately 414 feet tall from ground to tip of the turbine blade fully extended. The Manzanita Wind Project would connect with the Boulevard Substation Rebuild component of the ECO Substation Project.

It is expected that the Manzanita wind energy project would develop a switchyard on non-tribal lands and a new 138 kV transmission line would be constructed along the existing ROW of the 69 kV transmission corridor that currently connects to the existing Boulevard Substation. The new 138 kV transmission line would interconnect with the proposed Boulevard Substation Rebuild component of the ECO Substation Project.

Jewel Valley Wind Project

The developers of the Jewel Valley Wind Project have completed a preliminary wind energy assessment to construct and operate 40 2.3 MW turbines (total generating capacity of 92 MW) west of Boulevard in unincorporated San Diego County. The towers of the proposed wind turbines would be approximately 260 feet tall (height from ground to tip of fully extended blade would be approximately 430 feet). As proposed, construction of the project would occur between February and October 2013, and commercial operations are scheduled to begin in November 2013. The preferred point of interconnection for the Jewel Valley Wind Project is the Boulevard Substation Rebuild component of the ECO Substation Project.



INTENTIONALLY LEFT BLANK

Rugged Solar LLC Project Visual Resources Technical Report

LanEast Solar Farm LLC

LanEast Solar Farm LLC is proposing a solar farm that would consist of similar elements to the Project, although with a smaller number of CPV panels, south of the Project site at McCain Valley Road. The LanEast project would be an up to 20.4-MW AC CPV solar farm composed of up to 992 trackers. This project would also connect to the Boulevard Substation via a 69-kV conductor to be mounted on the proposed Iberdrola Tule Wind project transmission line poles.

All LanEast project facilities would be located within the cumulative impacts study area (i.e., McCain Valley). The visual resources report for this project identified significant and unavoidable impacts for visual resources due to the introduction of visual elements that would be incongruent with the setting and would impact visual quality at Key Views.

LanWest Solar Farm LLC

The LanWest Solar Farm Project is proposed by the LanWest Solar Farm LLC and would consist of similar elements to the Project, but on a much smaller scale at a site farther south, between Old Highway 80 and Interstate 8. The LanWest Project would be a 5.04-MW CPV solar farm with 192 CPV trackers. This project would also connect to the Boulevard substation and would require a dedicated 12.5-kV distribution line.

All LanWest Project facilities would be located within the cumulative impacts study area (i.e., McCain Valley). The visual resources report for this project identified significant and unavoidable impacts for visual resources due to the introduction of visual elements that would be incongruent with the setting and would impact visual quality at Key Views.

Wind Measurement Towers

The Descanso Ranger District has been issued a permit to construct three 160-foot-high towers to test wind measurements in the area of La Posta Valley and Fred Canyon Road. Testing would be completed for a period of 3 years or less.

National Quarries

Wind testing site occupying 4,435 acres in southeastern San Diego County, north of Interstate 8, east of Sunrise Highway on Sawtooth Mountain. Memorandum of Understanding/CRA signed, and application complete April 22, 2009. Wind testing stage (Type II) Testing.

Golden Acorn Casino and Travel Center Expansion, Campo Indian Reservation

This project site is located off of Old Highway 80 on the south side of the Interstate 8/Crestwood Road exit. The existing facility was constructed and began operations in 2001 (Golden Acorn Casino 2009). The project proposes to expand the existing Golden Acorn Casino and Travel

Rugged Solar LLC Project Visual Resources Technical Report

Center with 17,800 square feet of additional gaming and non-gaming casino area; construction of a 3-story, 150-room hotel; 900-space parking structure; RV Park; up to two wind turbines; and improvements to the water and wastewater systems. Non-gaming areas are to include a trading post, arcade, coffee bar, administrative offices, bowling center, snack bar, entertainment hall, and retail/restaurant uses. The project is to be constructed in three phases over a period of approximately 7 years. A new hotel and other facilities are planned just southwest of the Kumeyaay Wind facility (Campo Kumeyaay Nation 2007).

Boulevard U.S. Customs and Border Protection Station

A Final Environmental Assessment was prepared for this project by the U.S. Army Corps of Engineers in February 2010. The new customs and border protection facility was recently constructed on the east side of Ribbonwood Road, just north of Interstate 8. The facility includes an administration building, detention center, maintenance garage, dog kennels, equine facilities, an emergency helipad, a 160-foot communications tower, an indoor shooting range, and security fencing and lighting on a 32-acre site.

La Posta Mountain Warfare Training Facility

In 2007, the BLM and Department of the Navy prepared an Environmental Assessment for the expansion at La Posta Road Navy SEAL facility. The parcels of land are located approximately 4 miles south of Interstate 8 on La Posta Road. This project involves withdrawing land from public use for military uses and proposes to enhance existing on-site facilities and construct new training facilities, including a new multistructure training complex.

Ketchum Ranch

The Ketchum Ranch project proposes to subdivide 1,250 acres south of Interstate 8, north of Old Highway 80 and west of Carrizo Gorge Road, into 2,125 residential units, retail commercial development, elementary school site, public park, recreational center, open space, and associated infrastructure and utilities. Department of Planning and Land Use (DPLU) letter dated October 2007 requesting an EIR. Project placed on idle status in January 2010.

Additional Considerations

As noted previously and identified in Figure 11, several alternative energy development and transmission line projects have been identified along the Interstate 8 corridor, in particular in the vicinity of Jacumba, California (east of the Project site and the McCain Valley). While these are not specifically addressed in this cumulative assessment, their presence would likely contribute to an overall shift in views along each of these travel corridors.

Rugged Solar LLC Project Visual Resources Technical Report

Cumulative Impact Analysis

The existing visual quality of the McCain Valley viewshed is altered by existing transmission lines, a wind energy project, a major travel corridor and other roads, rural (ranch buildings, grazing areas, etc.) and semi-rural (residential and other buildings in Boulevard) development, grazing modifications, and other associated facilities. Development of the Project would introduce a field of CPV trackers and associated facilities in a natural-appearing subarea of the cumulative analysis area. The Project would change the aesthetics of the site by introducing visual elements that would be incongruous with the natural lines, textures, colors, and forms of the setting. Some of these visual elements and associated impacts would significantly affect visual quality, based on the established thresholds. In addition, existing cultural modifications (as noted above) in the McCain Valley viewshed detract from the overall scenic nature of the area.

As discussed above, four cumulative energy infrastructure projects would share some of the same characteristics of the Project and be partially located within the same field of view as the Project (when viewed from certain directions). The Sunrise Powerlink, Jordan Wind Energy, Campo and Manzanita Wind, and Iberdrola Tule Wind projects are anticipated to also occur within the viewshed of the Project site and would exhibit vertical structural forms, and similar structural complexity, and industrial character as the Project. Although much smaller in scale, the LanEast and LanWest projects would include facilities similar to the Project and would also be located in the same general vicinity as the Project. Because of the large-scale, interconnected changes that these cumulative projects would involve, a significant and unavoidable cumulative impact would occur to visual resources.

While this cumulative impact would be noticeable throughout the cumulative study area, topography and viewing durations may help minimize the significance of the impact. Cumulative impacts would be more noticeable in areas without existing transmission lines, solar panels, and other energy infrastructure, and where the new aboveground facilities would introduce new features into the landscape. In addition to these permanent impacts, the presence of construction equipment and ground disturbance during construction, including vegetation clearing, grading, and excavation, would also introduce visual elements on a temporary basis that would be incompatible with the existing setting. It is possible that the cumulative projects and the Project would be constructed within the same general timeframe, creating the potential for temporary cumulative impacts. Because of the geographic scope of cumulative project construction sites, and the lack of mitigation measures to adequately reduce the visibility of these projects, this temporary impact is also significant and unavoidable.

Rugged Solar LLC Project Visual Resources Technical Report

Short Term

Construction activities for other projects—including those outlined above—could be cumulatively visible in the vicinity of the Project. Although these impacts would be temporary, they would be extensive in geographic scope and visibility given the topography of the McCain Valley. If the Project is constructed concurrently with the cumulative projects listed above, the Project would contribute to this significant and unavoidable cumulative impact.

Long Term

The identified cumulative projects represent large-scale industrial projects that would adversely affect visual character. The majority of the projects proposed within the Project viewshed are wind energy projects. These projects are considered to be a major intrusion into the landscape due to the vertical character of the wind turbines that located on prominent ridgelines where wind exposure and energy are the greatest. The color and height of these facilities cannot be screened and highly contrast with the surrounding landscape and sky. The circular motion of the spinning turbine blades introduces movement in an otherwise stationary landscape.

Solar energy projects are considered to be a moderate intrusion into the landscape because these features present a horizontal feature within the landscape that is less intrusive because intervening topography and adjacent vegetation obscure and blend with the project edges. However, views from elevated viewpoints above the project can reduce this softening affect. Although lower and horizontal, solar projects have a greater visual mass and volume that can significantly alter visual resources if not sited properly and designed to take advantage of the screening effects of natural landscape features and surrounding vegetation. Solar panels and supporting structures also contrast with landscape character in terms of texture, color and reflectivity.

The Project and the cumulative projects combined would result in a perceived increase in industrialization of the landscape, diminution of visual quality, and increase in visual contrast from existing conditions. In the cumulative scenario, wind projects will dominate viewer attention within the Project area and have a high contribution to visually significant cumulative impacts to visual resources. The Project's contribution to the cumulative impact is likely moderate, as it would be a part of a landscape-scale conversion in the existing visual environment. Overall, the cumulative impact of the identified projects would be considered highly significant on existing visual resources and would jeopardize state scenic highway eligibility.

5.6 Summary of Project Impacts, Significance, and Conclusions

Due to the anticipated level of contrast between existing and proposed visual character and quality, the Project would result in moderate to moderately high and high levels of visual impact and has been found to present potentially significant impacts under one of the four visual resources

Rugged Solar LLC Project Visual Resources Technical Report

guidelines for determining significance. Tables 7, 8, and 9 summarize the visual quality ratings, viewer response, and visual impact ratings at KOPs 1 through 4. As detailed in Section 5.5, Determination of Significance, the project was determined to present less than significant impacts under all five of the dark skies and glare guideline for determining significance.

Additionally, as discussed in Section 5.6, Cumulative Impacts, the Project would contribute to the anticipated cumulative visual impacts within the McCain Valley viewshed specifically, thereby contributing meaningfully to the larger-scale shift from a rural/semi-rural to industrialized landscape anticipated within the viewshed along the Interstate 8 corridor.

Incorporation of Mitigation Measure M-VIS-1 is intended to break up the mass and scale of the CPV trackers and block views of project components from critical viewpoints through installation of landscape screens along the outer edge of the project fenceline east and west of McCain Valley Road. In addition, introduction of foreground detail would help to attract viewer attention away from CPV trackers and the ancillary structures located behind the landscaped area. However, complete screening of views from public viewpoints to the proposed solar facility is not possible due to the height of CPV trackers (30 feet above ground surface) and due to the plant density limitation required to achieve wildfire protection standards. To further reduce the severity of anticipated visual contrast, additional mitigation measures were considered but were ultimately determined to be infeasible or ineffective. For example, the incorporation of “leave islands” (i.e., retainment of areas of natural vegetation within the fence line of the solar farm development) to reduce the density and continuity of CPV trackers and anticipated visual contrast between project components and natural vegetation would conflict with fire mitigation design requirements. In additions, measures limiting the height of CPV trackers were considered but were determined to be technologically infeasible and would not substantially reduce anticipated impacts to existing visual character and quality of the site. Therefore, due to limitations of Mitigation Measures M-VIS-1 and the infeasibility or ineffectiveness of additional mitigation measures considered during preparation of this report, it is anticipated that the resulting impacts to visual resources (i.e., impacts to existing visual character and quality of the site – County of San Diego Visual Resources Guideline 1) would be significant and unmitigable (VIS-1). Further, even with implementation of Mitigation Measure M-VIS-1, impacts associated with project-generated glare received at adjacent properties and along Ribbonwood Road and McCain Valley Road would also remain significant and unmitigable (VIS-2).

As previously discussed, Tables 7 through 9 below summarize the visual quality ratings, viewer response, and visual impact ratings at KOPs 1 through 4.

Rugged Solar LLC Project Visual Resources Technical Report

Table 7
Summary of Visual Quality Ratings

Visual Quality	Ratings for Key View 1				Ratings for Key View 2				Ratings for Key View 3				Ratings for Key View 4			
	Existing	with Project	Change	After Mitigation	Existing	with Project	Change	After Mitigation	Existing	with Project	Change	After Mitigation	Existing	with Project	Change	After Mitigation
Vividness	3.0	2.5	-0.5	2.0	2.25	1.5	-0.75	0.75	3.0	2.0	-1.0	1.0	3.4	2.4	-1.0	3.4
Intactness	2.5	2.0	-0.5	1.5	2.25	1.2	-1.05	0.15	2.25	1.25	-1.0	0.25	4.2	2.7	-1.5	4.2
Unity	3.0	2.5	-1.0	1.5	2.75	1.0	-1.75	-0.75	3.0	1.0	-2.0	-1.0	4.1	2.3	-1.8	4.1
Total	8.5	7.0	-2.0	5.0	7.25	3.7	-3.55	-0.15	8.5	4.25	-4.00	0.25	11.7	7.7	-4.3	11.7

All ratings are based on a scale from 0 to 5, where 0=none, 3=moderate, and 5=high.

As detailed under each Key View description, viewer response is influenced by viewer location, activity, duration, and exposure. Table 8 lists the viewer response ratings for each Key View location.

Table 8
Viewer Response Ratings

Viewer Response	Key View 1	Key View 2	Key View 3	Key View 4
Rating	2.5	3.5	3.5	3.8

All ratings are based on a scale from 0 to 5, where 0=none, 3=moderate, and 5=high.

The level of visual impact has been assessed for each Key View, and was determined by applying the following equation to the visual quality and viewer response ratings:

$$\text{Visual Impact} = \text{Change in Visual Quality} \times \text{Viewer Response}$$

The resulting visual impact scores provide an indication of significance of the Project on the overall visual setting of the Project location. Table 9 lists the visual impact scores for each Key View.

Table 9
Summary of Visual Impact Ratings

Visual Impact	Key View 1	Key View 2	Key View 3	Key View 4
Change in Visual Character / Quality	-2.0	-3.55	-4.00	0
Viewer Response	2.75	3.5	3.5	3.8
Visual Impact Scores	5.5	12.43	14.0	0

All ratings are based on a scale from 0 to 13, where 0=none, <3=low, 4-6= moderately low, 7-9=moderate, 10-12= moderately high, and >13=high.

Rugged Solar LLC Project

Visual Resources Technical Report

6.0 VISUAL MITIGATION AND DESIGN ALTERNATIVES

Mitigation Measure M-VIS-1 addresses both Project design and site management techniques in order to reduce anticipated visual contrast and impacts to existing visual character and/or quality of the site and surroundings to the extent practicable. As stated above, additional mitigation measures to reduce the severity of project impacts associated with existing visual character and/or quality and project-generated glare were considered but were ultimately determined to be infeasible or ineffective. Therefore, even with implementation of relevant PDFs and Mitigation Measure M-VIS-1, project impacts associated with Guideline 1 (Visual Resources) and Guideline 4 (Dark Skies and Glare) would remain significant and unmitigable.

Mitigation Measures

M-VIS-1 Create landscape screening/buffering east and west of McCain Valley Road.
The applicant shall install landscape screens as specified in the Landscape Screening Design Report for the Soitec Solar Development Program EIR. Features of the solar facility to be screened include the 50-foot-wide fire buffer with 6-foot-tall perimeter fence, concentrated photovoltaic (CPV) solar panels, and other associated features that exceed the height of the fencing installed around the perimeter of the solar facility. The applicant shall also be responsible for continued maintenance of the landscape screens including installation and maintenance of a drip irrigation system and implementation of and consistency with plant installation and maintenance standards identified in the Landscape Screening Design Report. Periodic monitoring and reporting to observe and assess the maintenance regime and implementation of appropriate measures to promote plant survival, growth, overall health and vigor shall also be required. If necessary, adaptive measures shall be implemented in the subsequent spring season to address project deficiencies as they relate to the desired landscape screening effect. Additional details regarding recommended plants and materials for landscape screens, project specific designs, irrigation systems, water demand calculations and maintenance and monitoring activities are included in the Landscape Screening Design Report.

Rugged Solar LLC Project Visual Resources Technical Report

INTENTIONALLY LEFT BLANK

Rugged Solar LLC Project Visual Resources Technical Report

7.0 REFERENCES

- California Department of Transportation (Caltrans). 2011. California Scenic Highway Mapping System. Available at http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm. Accessed January 17, 2012.
- Caltrans. 2012. Traffic Data Branch – Traffic Volumes for Interstate 8. Website accessed October 10, 2012. <http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/index.htm>.
- County of San Diego. 1986. San Diego County Code: Division 9. Light Pollution Code. Available at <http://www.sdcountry.ca.gov/dplu/docs/LightPollutionCode.pdf>.
- County of San Diego. 2011a. Boulevard Subregional Planning Area: Mountain Empire Subregional Plan. Adopted August 3, 2011. Available at http://www.sdcountry.ca.gov/dplu/docs/CP/Boulevard_CP.pdf.
- County of San Diego. 2011b. County of San Diego General Plan. Adopted August 3, 2011. Available at <http://www.sdcountry.ca.gov/dplu/generalplan.html>.
- County of San Diego. 2011c. San Diego County Zoning Ordinance. Available at <http://www.sdcountry.ca.gov/dplu/zoning/index.html>.
- Dudek. 2011. Final EIR/EIS for the East County Substation/Tule Wind/Energia Sierra Juarez (ESJ) Gen-Tie Line. October 2011.
- Dudek. 2013. Landscape Screen Design Report for the Soitec Solar Development Program EIR. July 2013.
- Federal Highway Administration (FHWA). 1981. Visual Impact Assessments for Highway Projects. Office of Environmental Policy. Washington, D.C.
- Power Engineers. 2013. Soitec Solar Development Boulevard Glare Study. August 23, 2013.
- SanGIS. 2009. County of San Diego Discretionary Permits Layer. Available at <http://www.sangis.org/acb/stores/2/index.asp>. Accessed 2011.

Rugged Solar LLC Project Visual Resources Technical Report

INTENTIONALLY LEFT BLANK

Rugged Solar LLC Project

Visual Resources Technical Report

8.0 PREPARERS

This Visual Resources Technical Study was prepared for the County of San Diego by Dudek and AECOM on behalf of Soitec Solar Development LLC. The following individuals contributed to this study.

Michael Sweesy, Principal, Dudek

Master of Landscape Architecture, Cal Poly Pomona, 1984

BA, Geography, Cal State Fullerton, 1978

California Licensed Landscape Architect #3319

28 years of experience

Certified County of San Diego CEQA Preparer for Visual Analysis

Josh Saunders, Dudek

Master of Architecture, New School of Architecture + Design, 2013

BA, Urban Studies and Planning, UC San Diego, 2006

6 years of experience

John Bridges, Principal, AECOM

Master of City Planning, San Diego State University, 1979

BA, Political Science, University of Texas, Arlington, 1972

33 years of experience

Michael Page, Associate Principal, AECOM

Professional Certificate, Land Use and Environmental Planning, UC San Diego, 1994

BA, Biology-Environmental Science and Geology/Biology, Colby College, 1984

18 years of experience

Garrett L. Avery, AECOM

Bachelor of Landscape Architecture, Clemson University, 2006

Design and Sustainable Development

6 years of experience

Anne McDonnell, Technical Editor, AECOM

BS, Communications, Northwestern University, 1995

14 years of experience

Marisa Fabrigas, Word Processor, AECOM

Associate in Secretarial Science, Columban College, 1983

29 years of experience

Rugged Solar LLC Project Visual Resources Technical Report

INTENTIONALLY LEFT BLANK

APPENDIX A

Photos of Land Uses in Project Vicinity

APPENDIX A

Photos of Land Uses in Project Vicinity



Photo 1: Sunrise Powerlink 500 kV Steel Lattice Towers are located immediately adjacent to the project site along McCain Valley Road.

APPENDIX A (Continued)



Photo 2: Golden Acorn Casino consists of a large-scale casino located adjacent to I-8 and the Kumeyaay Wind Farm.



Photo 3: Kumeyaay Wind Farm consisting of 25 wind turbines approximately 300 feet in height.

APPENDIX A (Continued)



Photo 4: McCain Valley Conservation Camp #21, a prison camp providing training for 110 inmates on a regular basis.

APPENDIX A (Continued)



Photo 5: MET Towers are scattered across the landscape within the vicinity of the project area consisting of tubular towers that are approximately 200 feet in height.

APPENDIX A (Continued)



Photo 6: Scattered single-family residences located throughout the Boulevard area.



Photo 7: Located north of Interstate 8 and adjacent to Ribbonwood Road, the new Boulevard U.S Customs and Border Protection Station (shown under construction here) will station up to 250-border patrol agents.

APPENDIX A (Continued)



Photo 8: Lux Inn and Businesses located within Boulevard Town Center at the I-8/Ribbonwood intersection.



Photo 9: View from I-8 looking north towards the project study area, west of McCain Valley Road.