APPENDIX 2.1-1

Visual Resources Report

DRAFT

Visual Resources Report
for the
Jacumba Solar Energy Project
Major Use Permit PDS2014-MUP-14-041
Environmental Review Project Number PDS2014-MPA-14-015
Jacumba, San Diego County, California

Lead Agency:

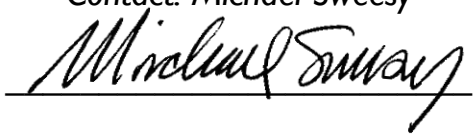
County of San Diego
Department of Planning and Development Services
5510 Overland Avenue
San Diego, California 92123
Contact: Ashley Gungle

Prepared for:

Jacumba Solar LLC
700 Universe Boulevard
Juno Beach, Florida 33408
Contact: Jesse Marshall

Prepared by:

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



APRIL 2015

Printed on 30% post-consumer recycled material.

TABLE OF CONTENTS

Section **Page No.**

TABLE OF CONTENTS (CONTINUED)

Page No.

FIGURES

TABLES

1 INTRODUCTION

Jacumba Solar LLC (Project applicant), proposes to develop, finance, construct, and operate a solar energy facility in southeastern San Diego County. The Proposed Project encompasses a property of approximately 304 acres within the Mountain Empire Subregional Plan Area in unincorporated San Diego County. The solar facility comprising the Proposed Project would utilize photovoltaic (PV) fixed tilt rack electric generation system technology to produce solar energy at the utility-scale on approximately 108 acres. The Proposed Project is designed to produce up to 20 megawatts (MW) of alternating current (AC) generating capacity and would consist of approximately 81,108 PV modules fitted on 2,253 fixed tilt rack panels (solar arrays). A 10 MW battery energy storage facility would also be included. Ancillary facilities and components are also proposed and are discussed in detail in Section 2, Project Description.

1.1 Purpose

The purpose of this study is to assess potential visual impacts of the Proposed Project, determine the significance of the impacts under the California Environmental Quality Act (CEQA), and to propose measures to avoid, minimize, or mitigate adverse visual impacts associated with the construction and operation of the Jacumba Solar Project on the surrounding visual environment.

1.2 Visual Resource Concepts and Terminology

Visual Resources

For purposes of this study, visual resources are defined as the various elements and features of the landscape that contribute to the visual character of a particular setting. Visual resources encompass natural elements such as terrain (landforms, rock outcroppings, etc.), vegetation, water bodies (lakes and streams), atmospheric conditions, (i.e., sky, clouds, sunlight) etc., and man-made elements such as roads, vegetation clearing, excavations, and structures of all kinds. Visual resources are perceived within the context of a viewshed or the aggregate area viewed from a stationary viewpoint or multiple viewpoints in the case of an observer in motion. Within the defined viewshed of an individual project, visual resources are observed as pieces of the overall viewshed generally due to the screening effects of terrain and vegetation when in open space areas. However, in particular situations where the viewpoint is elevated, larger portions of the viewshed are visible as from vistas.

A visual resource assessment typically begins with fieldwork and an inventory of the existing visual resources and conditions of a particular site. In general, a visual resource assessment includes the following processes:

- Inventory and describe the existing visual quality, character and visual resources of the project site and surrounding viewshed area of the project being analyzed.
- Identify visually sensitive resources.
- Identify sensitive viewers and representative viewpoints (also known as key views) to the project site – representative viewpoints are used in the visual assessment to document the anticipated level of visual change occurring in the area because of the project in question.
- Analyze the potential effects on visual resources occurring as a result of the proposed project using visual simulations.
- Identify appropriate mitigation measures to avoid or reduce these negative visual effects, if adverse visual effects are determined to be potentially significant.

The process described above is based on the Federal Highway Administration assessment method and is consistent with the County of San Diego *Guidelines for Determining Significance and Report Format and Content Requirements – Visual Resources*. The intent of the process is the measurement of the aesthetic value of an area according to visual character, quality, and viewer response to a particular visual resource change represented by the Project. These concepts and other key issues discussed in this visual resource assessment are described below.

Visual Character

The descriptive attributes of a landscape (including natural and human-made features) contribute to the visual character of a locale or a viewshed. Influenced by geologic, hydrologic, botanical, and recreational features as well as by roads, structures, utilities and other human-made features, the perception of visual character can vary according to season and time of day as the atmospheric elements within the viewshed context (i.e., weather, light, and shadow) fluctuate over time and work to either obscure or highlight particular features. The fundamental elements used to describe visual character are form (bulk, mass, size and shape), line, color, patterns and texture. The appearance of a landscape is often described according to the dominance of one or more of these elements. For example, the geometric lines and vertical forms of an urban setting can dominate the visual landscape and produce very little contrast in terms of color and texture. On the other hand, a natural setting comprised of rolling hills, rough textured vegetation, flat, rolling and rugged forms, and earth tone colors could harmonize into a visual character in which none of the elements is particularly dominant. However, in absence of viewer response to change in the environment, neither landscape is considered to have greater or higher visual character.

Visual Quality

Visual quality is evaluated according to the vividness, intactness, and unity presented in the viewshed as modified by public judgment/viewer sensitivity. The three criteria used to evaluate visual quality are defined as follows:

- *Vividness* is the visual power or memorability of landscape as a whole and/or individual components as they combine in distinctive visual patterns.
- *Intactness* is the visual integrity of the natural and built landscape and its freedom from encroaching elements. Intactness can be present in developed urban and rural landscapes, as well as in natural settings.
- *Unity* is the visual coherence and compositional harmony of the landscape considered as a whole. Unity can frequently relate to the careful design of individual built components in the landscape.

While high quality views are highly vivid, mostly intact, and are highly coherent and exhibit visual continuity, low quality views are not particularly memorable and contain numerous contrasting and encroaching elements that contribute to weak visual unity.

Viewshed

The Project viewshed is composed of all surface areas from which views of Project components would be visible. In addition, the viewshed includes the location of viewers whose perceptions are likely to be affected by visual changes brought about by Proposed Project features. For purposes of this analysis, the viewshed depicted in report graphics does not consider the screening effect of existing vegetation and structures within the viewshed; rather, incidents of screening associated with vegetation and structures are discussed in the text as a refinement of the viewshed based on these site-specific view modifications.

Viewer Response

Viewer response is composed of two elements: viewer sensitivity and viewer exposure. These elements combine to form a method of predicting how the viewers might react to visual changes brought about by a project. The concepts of viewer sensitivity and viewer exposure are described below.

Viewer Sensitivity

Visual sensitivity is described in qualitative terms of high, medium, or low and is based on user volume and attitudes toward changes to the visual environment. Factors considered include the

number and types of viewers potentially affected, viewing distances, and documented public concerns about visual changes.

Viewer Exposure

In addition to the visual factors described previously, the visual resources analysis considered viewer exposure. The elements of viewer exposure help to define viewer perceptions resulting from a dynamic experience with the landscape and related visual resources. Viewer exposure varies depending on the angle of view (i.e., normal, inferior, or superior viewing angles); view distance (foreground, middle ground and background); relationship to sun angle (backlighting vs. front or side lighting); the extent of visibility (i.e., whether views are panoramic or limited by vegetation, topography, or other land uses); and viewer screening conditions (e.g., whether the Project facilities will be skylined on ridgelines, backscreened by topography and/or vegetation, or screened by structures or vegetation in the foreground). Viewer exposure also considers the duration of view based on viewer activity (e.g., travel route, residential, recreation) and often relates to speed of travel (pedestrian, vehicular, or stationary). Viewer exposure is generally considered long term for residents and short term for travelers along roadways. Viewer exposure can happen in a single event or through multiple successive views human perception can aggregate into a more general perception.

Viewer Groups – Number and Types of Viewers

Potentially sensitive viewers are determined based on the type and amount of use various land uses receive. Land uses that derive value from the quality of their settings are considered potentially sensitive. Land uses within the Project area that are considered sensitive to visual changes to their settings include residential and natural areas, designated and eligible state historic routes and scenic highways.

Distance Zones–Foreground, Middle-Ground, and Background Distances

The distance from which a Project component may be viewed affects the visual dominance and clarity that a feature or component may have within the seen landscape. Distance zones are described in this section according to foreground views, middle-ground views, and background views. Foreground views pertain to viewing distances where the viewer has close-range visibility of a given object (generally within 0.25 to 0.5 mile), which afford the greatest amount of visual detail of an object or feature. Middle-ground views typically pertain to viewing distances between 0.5 mile and 3 miles away, where objects are still distinguishable from other adjacent visual features. Background views pertain to viewing distances up to 15 miles away, where visibility of objects is less distinctive, and where ridges and skylines provide the greatest

potential viewing opportunities to an object. A single viewpoint most often encompasses foreground, middle ground, and background elements. However, there are circumstances, normally caused by terrain, where one or more of these view distances can be cut-off from the viewer. The effects of distance zones can be modified by environmental conditions such as angle of view related to landscape topography (acute angles can foreshorten distance zones), and view angle relative to sun location (backlighting can reduce visual clarity that modifies the effective viewing distance).

1.3 Key Issues

Adverse effects typically associated with solar development includes the loss of natural vegetation, terrain modification, removal of natural features with aesthetic value, and/or the introduction of contrasting elements within the existing landscape setting. In addition, potential effects may include the loss or degradation of significant visual features or views and the introduction of Project features that would significantly contrast with the existing elements of form, line, color and texture. The effects and elements of the Proposed Project that could potentially result in significant visual quality impacts include:

- Removal of vegetation from an approximate 108-acre portion of the 304-acre Project area and replacement with a 20 MW solar facility to include photovoltaic (PV) modules, associated inverters and transformer units for DC to AC conversion, access roads, an on-site private collector substation and an 10 MW energy storage facility;
- Contrasts in color and texture between tan colored soil surface of access roads and dark-colored solar panel structures and the light gray to brown/dark green color of the surrounding expanse of peninsular juniper woodland, semi-desert chaparral and Sonoran mixed woody scrub resulting from grading activities;
- Maintenance and security nighttime lighting;
- Installation of an 8-foot-high chain-link perimeter fence with 1 foot of three-strand barbed wire along the top; and
- Potential glare and secondary coloring effects from operation of solar arrays.

1.4 Principal Viewpoints to Be Covered

The segment of Interstate 8 (I-8) from State Route 67 (SR-67) east to the Imperial County line is an eligible state scenic highway. In addition, from the El Cajon city limits east to the Imperial County line, I-8 is included in the County of San Diego Scenic Highway System. Views of the Project site are intermittently available from westbound I-8 for approximately 0.8 mile as

measured from approximately Jade Peak to the west. From eastbound I-8, views of the Project site are available for approximately 0.25 mile.

Views of the Project site are also available from several viewpoints along an approximate 1.4-mile segment of Old Highway 80 located east of the Airport Mesa landform and west of Jade Peak. From SR-79 (Pine Valley) to I-8 (Jacumba), Old Highway 80 is included in the County of San Diego Scenic Highway System.

2 PROJECT DESCRIPTION

The Jacumba Solar Energy Project (Proposed Project) includes a major use permit (MUP) to authorize a Major Impact Utility pursuant to Sections 2926 of the Zoning Ordinance. The Project would produce up to 20 megawatts (MW) of solar energy and would be located on approximately 304 acres of private lands in southeastern San Diego County near the unincorporated community of Jacumba, California. See Figure 1, Regional Map, and Figure 2, Vicinity Map, for Project location. In addition to the PV modules, fixed tilt rack panels (solar arrays), and direct current (DC) to AC conversion equipment (i.e., inverter and transformer units), the Project would include a 1,000-volt DC underground collection system and a 34.5-kilovolt (kV) underground collection system linking the panels to the 110- by 215-foot on-site Project substation. The Project would also feature a 10 MW energy storage facility near the Project substation and with the fenced boundary of the site. An aboveground 138 kV transmission line (gen-tie) is also included and would connect the on-site Project substation to the adjacent East County (ECO) Substation.

A site plan of the Proposed Project is presented on Figure 3, Project Site Plan.

PV Modules

The Project would include installation of approximately 81,108 individual PV modules fitted on 2,253 fixed tilt rack panels (solar arrays). PV modules and associated racking systems would comprise the majority of the proposed facilities. PV modules generate electricity by safely converting the energy of the sun's photons into DC electrons. PV modules are wired in series and/or parallel to obtain a required nominal voltage. The PV modules are interconnected and arranged to increase overall reliability. This technology requires no moving parts or fuel, needs limited maintenance, and is a proven technology that can withstand long-term exposure to the environment.

The PV modules have been stringently tested and are robustly constructed with a lifespan of approximately 30 years. The PV modules are uniformly dark in color, coated with non-reflective treatment, and designed to be highly absorptive of all light that strikes their glass surfaces. The PV modules deployed for use in the Project would comply with all industry standard quality testing. The PV modules are electrically connected to the grounding system of the facility in accordance with local codes and regulations. The final PV module selection would be determined during the detailed engineering phase.

Support Structures

Racking refers to the support structure to which the solar PV modules are affixed that allow the panels to be properly positioned for maximum capture of the sun's solar energy. The PV module arrays (a row of PV modules) would be a fixed-tilt system that would be oriented along an east-west axis. The mounting structures are typically mounted on metal pipe pile or beam foundations

four to six inches in diameter. The beams would be driven into the soil using a pile/vibratory/rotary driving technique similar to that used to install freeway guardrails. Driven pier foundations offer multiple benefits, including quick installation and minimal site disturbance, and are a "concrete-free" foundation solution that would allow for easy site reclamation at the end of the Project life cycle. Most foundations would be driven to approximate depths of 10 to 15 feet deep. The PV modules, at their highest point, would be approximately 8 feet above the ground surface.

Depending on final engineering, the arrays may be equal in length, creating a uniform rectangular Project footprint, or may vary in length in order to avoid sensitive resources and work with the site terrain. The east–west arranged fixed-tilt arrays would be constructed approximately 25 feet apart (centerline to centerline) in a north–south direction, with an east–west array spacing of approximately 12.5 feet. Each PV module array "row" would measure approximately 144 feet in total combined length and approximately 6.5 feet in width. The PV module arrays' final elevations from ground would be determined during detailed Project design; however, it is common to maintain as low of an elevation profile as possible to reduce potential wind loads on the PV module arrays.

Inverters, Transformers, and Associated Equipment

PV modules would be electrically connected to adjacent modules to form module "strings" using wiring attached to the support structures. PV module strings would be electrically connected to each other via underground wiring. Wire depths would be in accordance with local, state, and federal codes. String wiring terminates at PV module array combiner boxes, which are lockable electrical boxes mounted on or near an array's support structure. Output wires from combiner boxes would be routed along an underground trench system approximately 3.5 feet deep and 1 foot wide, including trench and disturbed area, to the inverters and transformers.

Inverters are a key component of solar PV power-generating facilities because they convert the DC generated by the PV module array into AC that is compatible for use with the transmission network. The inverters within the electrical enclosures would convert the DC power to AC power and the medium-voltage transformers would step up the voltage to collection-level voltage (34.5 kV).

The inverters, medium-voltage transformers, and other electrical equipment are proposed to be located on skids located throughout the Project site. These power conversion stations would be either shop fabricated as one unit, or field assembled on site. The inverter and medium-voltage transformer units would be mounted on concrete foundation pads. All electrical equipment would be either outdoor rated or mounted within the electrical enclosures designed specifically for outdoor installation. The proposed equipment poses no electrical shock risk and is safe to touch.

DUDEK

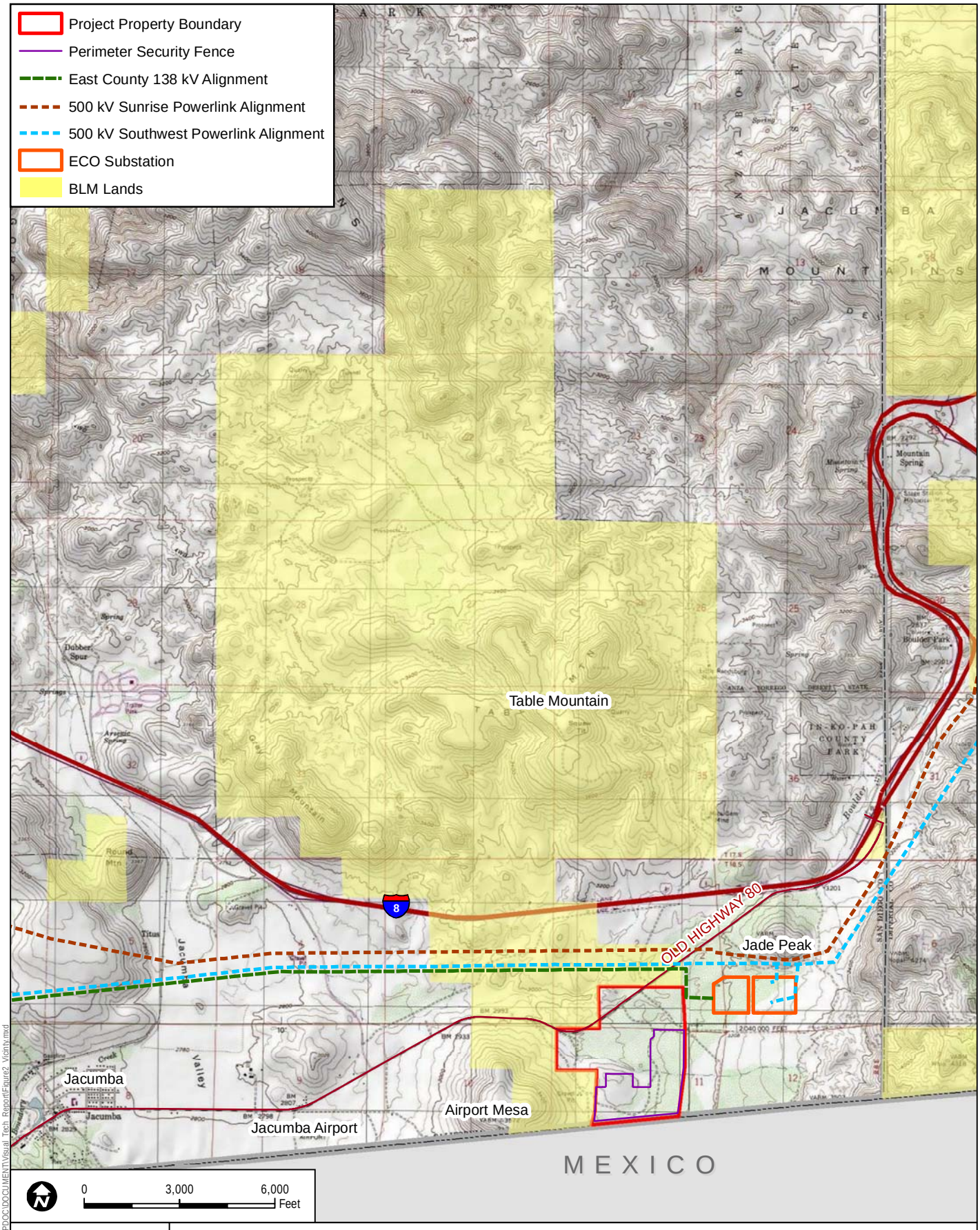
8477

FIGURE 1

Regional Map

Jacumba Solar Project Visual Resources Report

INTENTIONALLY LEFT BLANK



SOURCE:USGS 7.5 Jacumba Quadrangle

FIGURE 2

Vicinity Map

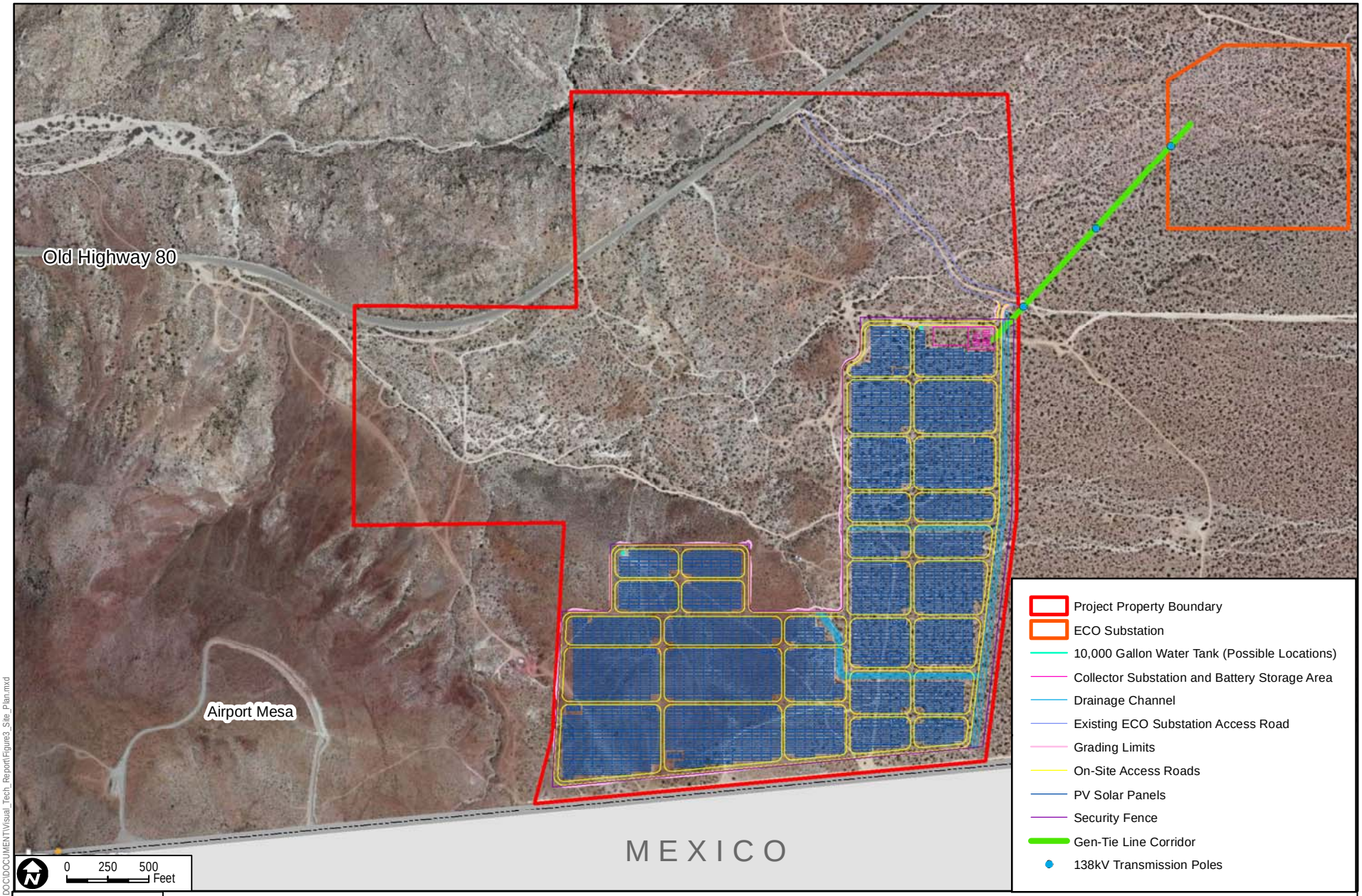
DUDEK

8477

Jacumba Solar Project Visual Resources Report

Path: Z:\Projects\8477\01\MAPDOC\DOCUMENT\Visual Tech Report\Figure2 Vicinity.mxd

INTENTIONALLY LEFT BLANK



SOURCE:Bing 2014

FIGURE 3

Project Site Plan

DUDEK

8477

Jacumba Solar Project Visual Resources Report

Path: Z:\Projects\8477\01\MAP\DOC\DOCUMENT\Visual_Tech_Report\Figure3_Site_Plan.mxd

INTENTIONALLY LEFT BLANK

Project Substation

The Proposed Project requires the use of a private on-site collector substation (110' X 215' (23,650 sq. ft.)) that would be located on the northeastern corner of the Project site. The purpose of the substation is to collect the power received from the collector lines and convert the voltage from 34.5 kV to 138 kV as well as to be able to isolate equipment (i) in the event of an electrical short-circuit, or (ii) for maintenance.

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

- One 138 kV transformer including secondary containment area per local and state regulations.
- One 138 kV circuit breaker used to protect equipment from an electrical short circuit on the gen-tie. Disconnect switches, wire, cables and aluminum bus work used to connect and isolate the major pieces of equipment.
- The substation also includes a single 34.5 kV circuit breaker used to protect equipment from an electrical short circuit on the collection system, disconnects and bus work to connect and isolate the collector circuits, relays used to detect short circuits, equipment controls, telemetering equipment used to provide system control and data acquisition, voice communication, and the meters used to measure electrical power generated from the Project. Switching gear and other components would be a maximum of 35 feet in height.
- A 138 kV dead-end structure that would have a maximum height of 35 feet. This structure is where the power output from each transformer is delivered to the gen-tie line.

Energy Storage System

A battery energy storage system is proposed to be located adjacent to the on-site substation in the northeast section of the Proposed Project. It would consist of ten enclosures equipped with batteries that will be capable of delivering approximately 10 MW AC of energy. Each enclosure would include an air conditioning unit for cooling purposes and a self-extinguishing fire system. Critical information from the system would be monitored along with the solar plant performance. A master control system would coordinate operation of the solar generation equipment and the energy storage system.

Connector Line, Fiber Optic Line, and Point of Interconnection

The Project would interconnect to the ECO Substation project, which is owned and operated by San Diego Gas & Electric (SDG&E). A 138 kV line interconnecting from the ECO Substation project to the Proposed Project would be constructed above grade.

The 138 kV interconnection line would consist of two or three overhead steel poles that would be up to 150 feet in height. The vertical distance between the cross-arms on the steel case riser would be 20 feet. The distance between the ground and the lowest conductor would be at least 30 feet and the distance between conductors would be 18 feet horizontally and 12 feet vertically. Although span lengths between poles would be dependent on terrain, lengths would generally be between 400 and 800 feet. Components used to construct the proposed 138 kV transmission line would all feature non-reflective surfaces. For instance, the insulators would be constructed of gray polymer, the non-specular conductors would be made from aluminum-wrapped steel, and the transmission poles and associated hardware would be composed of galvanized steel.

Site Design

Fencing and Security

The Project site would be fenced along the entire property boundary for security with fencing that meets National Electrical Safety Code (NESC) requirements for protective arrangements in electric supply stations. Fencing will be 9 feet in height with an 8-foot chain-link perimeter fence with one-foot of three strands of barbed wire along the top with a 4-inch maximum clearance from the ground surface. The mesh of the fencing would be sized in coordination with Border Patrol and anti-climbing material(s) would be used. Signage in Spanish and English for electrical safety would be placed along the perimeter of the Project site, warning the public of the high voltage and the need to keep out. Signage would also be placed within the Project site where appropriate. Some localized security-related lighting, on-site security personnel, and/or remotely monitored alarm system may be required during construction and/or operation. Remote-monitored cameras and alarm system(s), and perimeter and safety lighting that would be used only on an as-needed basis for emergencies, protection against security breach, or unscheduled maintenance and trouble-shooting (such as may occasionally be required) would be installed.

Maintenance and Security Lighting

Lighting would be designed to provide security lighting and general nighttime lighting for operations and maintenance personnel, as may be required from time to time. Lighting would be shielded and directed downward to minimize any effects to the surrounding area, and would be

used only on an as-needed basis. Lighting would be provided at the entrance gates, and the Project substation.

The on-site substation would include lighting inside the substation to allow for safety inspections or maintenance that may be required during the evening hours. Lighting would also be provided next to the entrance door to the control house and mounted at the entrance gates to allow for safe entry. Since maintenance activities are not anticipated to be completed during the evening hours (except in case of an emergency), lights would only be turned on if needed.

All lighting for the solar facility would have bulbs that do not exceed 100 watts, and all lights would be shielded, directed downward, and would comply with the County of San Diego Light Pollution Code Section 59.101 et seq.

Access Roads

The Proposed Project would include dual purpose fire access roads and service roads. All road surfaces would have a permeable nontoxic soil binding agent in order to reduce fugitive dust and erosion in accordance with County Code Section 87.428, Dust Control Measures, and with San Diego Air Pollution Control District (SDAPCD) Rule 55, which regulates fugitive dust emissions from any commercial construction or demolition activity capable of generating fugitive dust emissions. In addition, the primary access driveway would be approximately 35-feet wide and provided off the existing paved ECO Substation driveway.

Fire Access Roads: The interior site roads would be constructed as suitable for fire access roads and would be constructed to a minimum width of approximately 24 on the perimeter and 20 feet between panel blocks. The roads would be graded and maintained to support the imposed loads of fire apparatus (not less than 50,000 pounds), and would be designed and maintained to provide all-weather driving capabilities. The purpose of the fire access roads is to allow for one-way access of fire apparatus throughout the Project site in order to reach all of the inverter stations.

The non-load-bearing surface material of the fire access roads would consist of an all-weather surface capable of supporting 50,000 pounds as required by County Fire Code. Fire access roads would be oriented in a north–south direction and would have east–west connections. An access-controlled gate would be installed at the substation driveways, which would be constructed off existing roadways with direct access to the Project site.

Service Roads: Service roads inside the fence would be constructed to a width of approximately 24 feet on the perimeter and 20 feet between panel blocks and would be compacted to support washing equipment loads of 15,000 pounds. An approximate 20-foot-wide road outside the fence would be constructed within the 125-foot gen-tie ROW in order to service the 138kV gen-tie line

during construction and operations. Service roads would also be treated with a nontoxic soil binding agent to control dust.

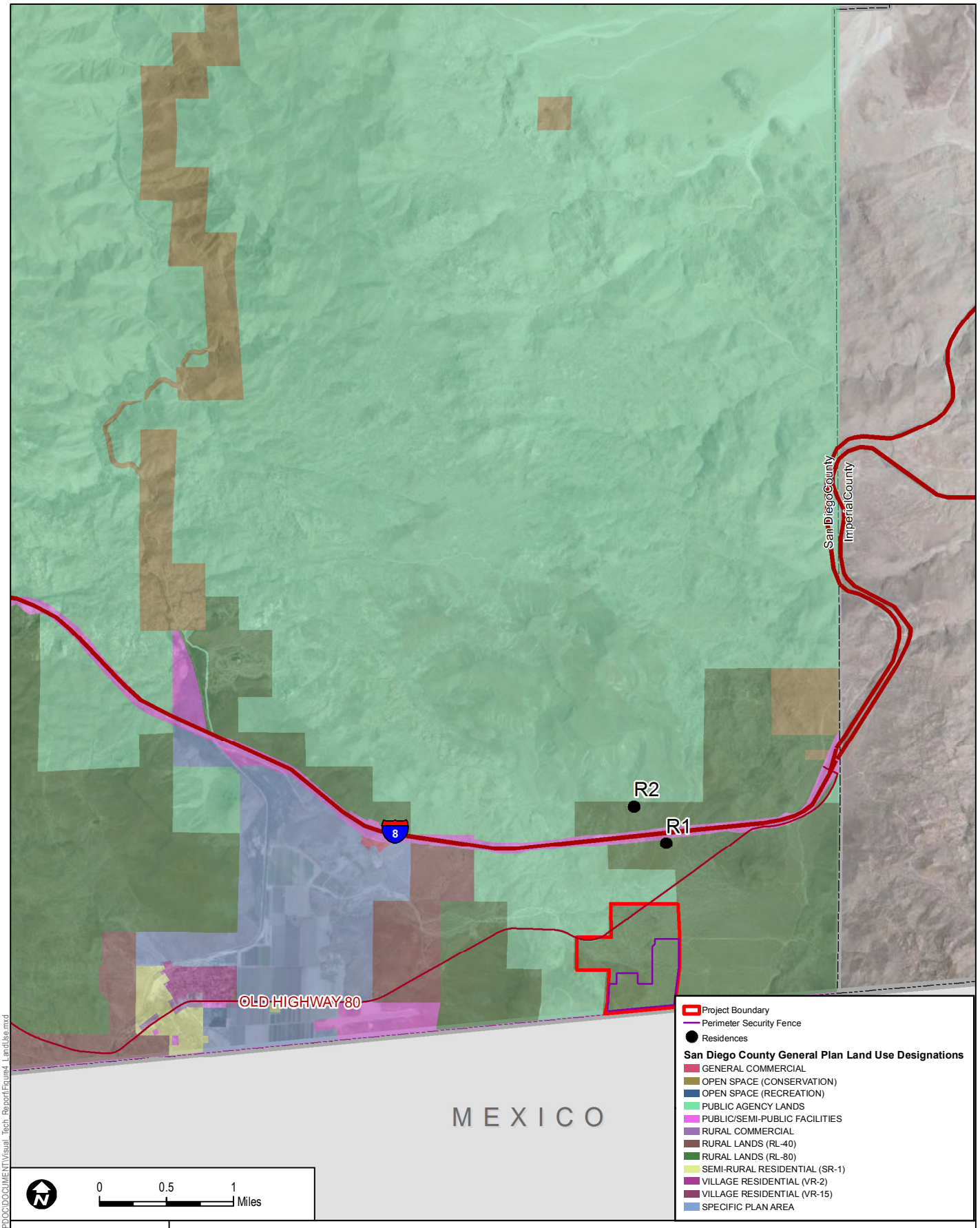
Land Use Designations and Zoning

The Project site is situated on privately owned lands located directly north of the U.S./Mexico international border and east and south of public lands managed by the Bureau of Land Management (BLM). Privately owned lands are located east of the Project site and extend to the San Diego/Imperial County border. The site is located within the Jacumba Subregional Group Area, which is part of the Mountain Empire Subregional Plan Area. The Jacumba Subregional Group Area land use map designates the site as Rural Lands 80 (RL-80), which translates to one dwelling unit per 80 gross acres (County of San Diego 2011a). The Project site is zoned General Rural (S92) (SANGIS 2013). Privately owned lands to the northeast and east are also designated RL-80 and zoned S92. Lands managed by the BLM are located immediately adjacent to the west and north of the site and are designated Public Agency Lands by the County of San Diego. Public Agency Lands are zoned Open Space (S80) by the County of San Diego but are managed by the BLM according to the Eastern San Diego County Resource Management Plan. Lands located approximately 0.5 and 1.0 mile to the west of the Project site are designated RL-80 and RL-40 and are zoned S92, respectively. The Jacumba Airport is located approximately 1.2 miles west of the Project site. The airport is designated Public /Semi-Public Facilities and is zoned S80. The Jacumba Valley Ranch Specific Plan Area is located approximately 1.5 miles west of the Project site and the I-8 corridor is located 0.5 miles north of the Project site.

General Plan Land Use designations and zoning associated with the Project site and surrounding area is depicted on Figure 4, Land Use Designation, and Figure 5, Project Zoning.

Surrounding Land Uses

The surrounding Jacumba area, which includes the community of Jacumba Hot Springs, is characterized as a predominantly rural landscape featuring large-lot ranches and single-family homes with a mixture of small-scale agriculture, recreational opportunities, and vast areas of undeveloped lands. Old Highway 80 runs through the community and functions as its main street. Single-family residences, limited commercial businesses, the Jacumba branch of the San Diego County library and an adjacent community park front Old Highway 80 through Jacumba. Agricultural fields are located to the east of the community. The Jacumba Airport is located approximately 1 mile east of Jacumba (as measured from the intersection of Old Highway 80 and Heber Road) and 1.2 miles west of the Project site. The airport is unattended, unlighted, and used mainly on the weekends as an operations area for gliders (County of San Diego 2014a).



Path: Z:\Projects\8477\01\MAPDOC\DOCUMENT\Visual_Tech_Report\Figure4_LandUse.mxd

DUDEK

8477

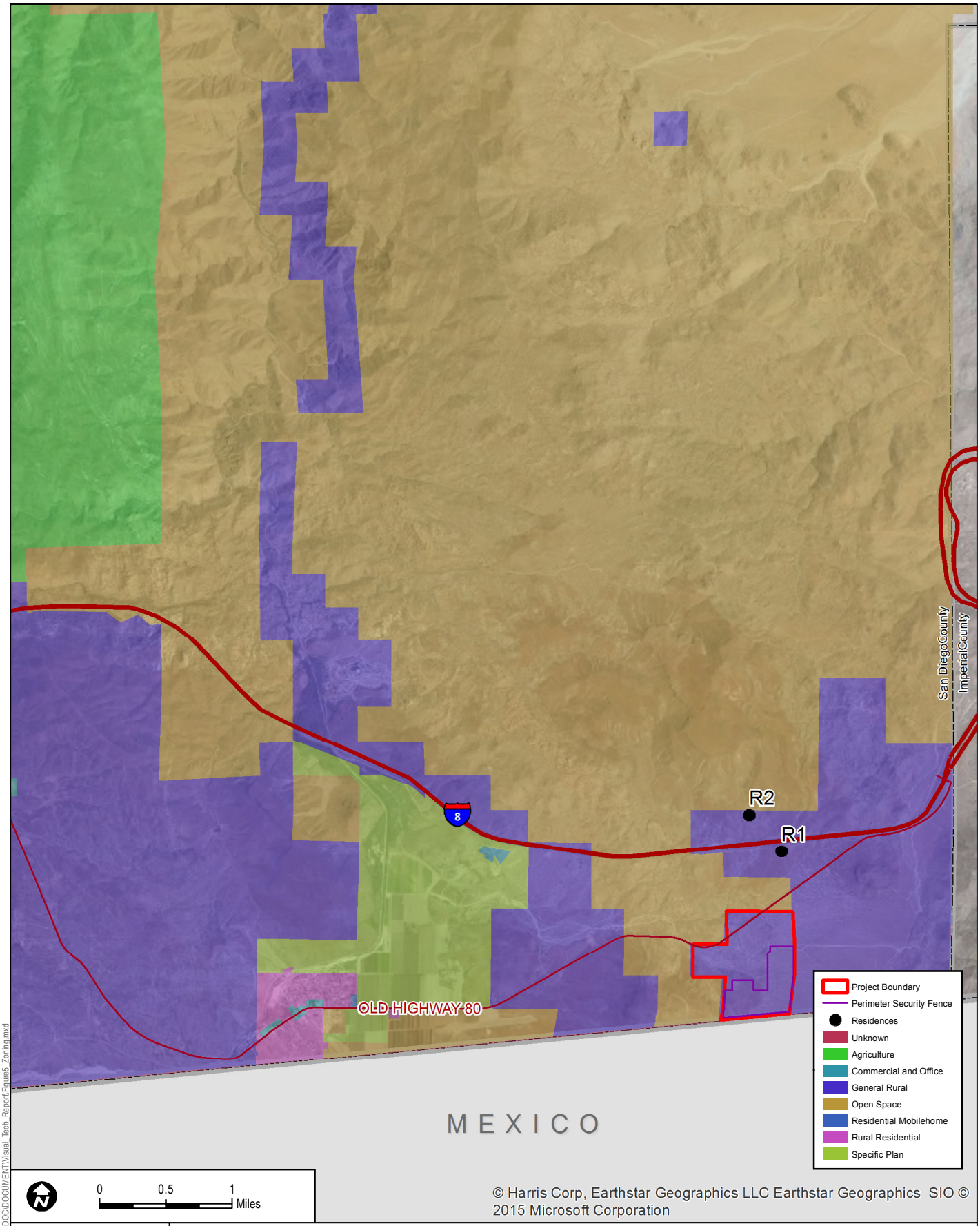
SOURCE: Bing 2014, SANDAG 2014

FIGURE 4

Land Use Designation

Jacumba Solar Project Visual Resources Report

INTENTIONALLY LEFT BLANK



Path: Z:\Projects\8477\01\MAPDOC\DOCUMENT\Visual_Tech_Report\Figure5_Zoning.mxd

DUDEK

8477

SOURCE: Bing 2014

FIGURE 5

Project Zoning

Jacumba Solar Project Visual Resources Report

INTENTIONALLY LEFT BLANK

While two rural residences are located in the Project viewshed and large portions of the landscape display an undeveloped, natural visual character, past and recent development has resulted in a variable physical setting that includes regional energy infrastructure and local and regional transportation corridors. As shown on Figure 2, the 500 kV Southwest Powerlink and 500 kV Sunrise Powerlink transmission lines traverse the Project area and are supported by large steel lattice towers that dot the landscape north of the Project site and south of I-8. Currently under construction, the ECO Substation includes both a 500 kV and a 230/138 kV yard on approximately 86-acre as well as a short loop-in of the Southwest Powerlink. The substation Project also includes a 13.3-mile long 138 kV transmission line, segments of which have been and will be constructed above-ground and supported by steel monopoles. Lastly, the rust-colored international border fence is also located in the Project area. The approximately 12-foot-tall fence runs west from the foothills of the Jacumba Mountains, nearly bisects the Airport Mesa landform, and is relatively continuous for approximately 4.5 miles as measured west from the west-facing slopes of Airport Mesa.

Public lands managed by the BLM are located immediately north and west of the Project site. These lands are identified in the Eastern San Diego Resource Management Plan as the Airport Mesa Resource Management Zone (RMZ). The Airport Mesa RMZ is managed for its rural recreational qualities and primarily provides recreationists opportunities for hiking (BLM 2008). The RMZ is also identified as a limited OHV management area where OHV use is restricted at certain times, in certain areas, and/or to certain vehicles (BLM 2008). The Table Mountain Area of Environmental Concern (ACEC) is located north of the RMZ and I-8. ACECs are managed by the BLM to provide protection for special status plant and wildlife species, and significant scenic and/or cultural values. The Table Mountain ACEC is managed for biological and cultural values (BLM 2008). Lastly, the Jacumba Wilderness comprises rugged ridgelines and intervening valleys located east of the Project site. Permitted use of wilderness areas is established in the Wilderness Act of 1964. Certain uses including temporary roads, motorized vehicles and other forms of mechanical transport; structures or installation are prohibited. Low-impact recreation including hiking and camping are permitted in the Jacumba Wilderness (BLM 2014).

INTENTIONALLY LEFT BLANK

3 REGULATORY SETTING

3.1 Federal

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

3.2 State

California Environmental Quality Act

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 outcropping, 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 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.

California Scenic Highway System

Created by the California State Legislature in 1963, the California Scenic Highway Program includes highways designated by the California Department of Transportation (Caltrans) as scenic. The purpose of the program is to protect the scenic beauty of California highways and adjacent corridors through conservation and land use regulation. For a highway to be included in the program, it must first be nominated by the specific city or county in which it is located. The nomination/eligibility process also entails that the city/county identify and define the scenic corridor of the highway to better understand the extent of visual resources requiring conservation. For an eligible highway to be officially designated and included in the program,

the local government with jurisdiction over lands abutting the highway must implement a scenic highway corridor protection program that safeguards the scenic appearance of the corridor. Corridor protection may be achieved through a variety of means including (but not limited to) regulation of land uses and intensity of development, detailed land and site planning, control of outdoor advertising, consideration of earthmoving and landscaping, and the design and appearance of structures and equipment. If the local Caltrans district and State Scenic Highway Coordinators determine that the corridor protection program meets the five legislatively required elements discussed above, a recommendation to designate the highway as scenic is forwarded to the Caltrans Director (Caltrans 2008).

There are four officially designated scenic highways in San Diego County: SR-163 (from the north to the south boundary of Balboa Park), SR-75 (from Imperial Beach city limits to Avenida Del Sol in the city of Coronado, and Coronado Bridge), SR-125 (from SR-94 to SR-8), and SR-78 (from west to east boundary of Anza-Borrego Desert State Park). In the Project area, I-8 is an eligible state scenic highway; however, the County of San Diego has not defined the scenic corridor of I-8 nor adopted a scenic highway corridor protection program. In addition, this highway has not received official scenic designation from Caltrans (Caltrans 2014).

3.3 Local

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 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 (MUP), 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 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 1978).

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 MUP. 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 structures shall be non-reflective in all areas possible to blend with the surroundings.

San Diego Light Pollution Code

The Light Pollution Code was developed by the County Planning and Development Services and Department of Public Works in cooperation with lighting engineers, astronomers, land use planners from SDG&E, Palomar and Mount Laguna observatories, and local community planning and sponsor groups to address and minimize the impact of new sources light pollution on nighttime views. For purposes of lighting requirements, the code separates the unincorporated portion of the County of San Diego into two zones: Zone A and Zone B. Zone A includes all unincorporated lands located within a 15-mile radius of the Palomar or the Mount Laguna observatories, and Zone B includes all areas not included in Zone A (County of San Diego 2006). Section 59.105 includes general lighting requirements applicable to all unincorporated lands in the County, and Section 59.106 includes shielding requirements per fixture by lighting type (i.e., outdoor lighting used for outdoor sales, eating areas, or advertisements (Class I), security lighting (Class II), and decorative lighting (Class III)) and according to location (Zone A or B) (County of San Diego 1986). The Jacumba Solar site is located in Zone B.

San Diego County General Plan

The General Plan, through elements established to address the various issues accompanying planning and development, provides guidance for the protection of visual resources. Selected policies within the Conservation and Open Space Element of the General Plan (County of San Diego 2011b) speak to the protection of existing visual character and/or quality of areas and contain general direction regarding the minimization of adverse impacts to visual resources.

The following policies of the Conservation and Open Space Element concern the preservation of visual and scenic resources:

- **Policy COS-11.1: Protection of Scenic Resources.** Require the protection of scenic highways, corridors, regionally significant scenic vistas, and natural features, including prominent ridgelines, dominant landforms, reservoirs, and scenic landscapes.

- **Policy COS-11.3: Development Siting and Design.** Require development within visually sensitive areas to minimize visual impacts and to preserve unique or special visual features, particularly in rural areas, through the following:
  - Creative site planning;
  - Integration of natural features into the project;
  - Appropriate scale, materials, and design to complement the surrounding natural landscape;
  - Minimal disturbance of topography;
  - Clustering of development so as to preserve a balance of open space vistas, natural features, and community character; and
  - Creation of contiguous open space networks.
- **Policy COS-11.7: Underground Utilities.** Require new development to place utilities underground and encourage "undergrounding" in existing development to maintain viewsheds, reduce hazards associated with hanging lines and utility poles, and to keep pace with current and future technologies.
- **Policy COS-13.1: Restrict Light and Glare.** Restrict outdoor light and glare from development projects in Semi-Rural and Rural Lands and designated rural communities to retain the quality of night skies by minimizing light pollution.
- **Policy COS-13.2: Palomar and Mount Laguna.** Minimize, to the maximum extent feasible, the impact of development on the dark skies surrounding Palomar and Mount Laguna observatories to maintain dark skies, which are vital to these two world-class observatories by restricting exterior light sources within the impact areas of the observatories.

In addition to goals and policies, the Conservation and Open Space Element of the General Plan establishes a County Scenic Highway System that identifies particularly scenic segments of county roadways, state routes, and interstate freeways. Within the Jacumba area and Project viewshed, I-8 and Old Highway 80 are included within the County Scenic Highway System (County of San Diego 2011b).

Mountain Empire Subregional Plan

The Mountain Empire Subregional Plan (a supplement to the County General Plan) establishes goals and policies to guide development within the areas of Tecate, Potrero, Boulevard, Campo/Lake Morena, Jacumba, and the Mountain Empire Balance, which together compose the Mountain Empire Subregion of southeastern San Diego County. The goals and policies of the

Subregional Plan (County of San Diego 2011c) are intended to be more specific than those of the County General Plan as they consider the distinct history, character, and identity of Mountain Empire communities.

The following policies in the Mountain Empire Subregional Plan relate specifically to aesthetics and visual resources.

- **Land Use General Goal, Policy, and Recommendation 1:** The landforms of the Subregion are an important environmental resource that should be respected in new development. Hillside grading shall be minimized and designed to blend in with the existing natural contours.
- **Residential Goal, Policy, and Recommendation 2:** Preserve the rural atmosphere of the Subregion by blending roads into the natural terrain.
- **Residential Goal, Policy, and Recommendation 4:** All development proposals shall demonstrate a diligent effort to retain significant existing natural features characteristic of the community's landscape. Existing topography and landforms, drainage courses, rock outcroppings, vegetation, and views shall be incorporated, to the maximum extent feasible, into the future development of the land.
- **Conservation Policy and Recommendation 1:** All development shall demonstrate a diligent effort to retain as many native oak trees as possible.
- **Conservation Policy and Recommendation 4:** The dark night sky is a significant resource for the Subregion and appropriate steps shall be taken to preserve it.

INTENTIONALLY LEFT BLANK

4 VISUAL ENVIRONMENT OF THE PROJECT

The Project site consists of undeveloped desert lands crossed by a network of dirt roads and dry washes/drainages. The northern portion of the site is crossed by Old Highway 80. I-8 is located approximately 0.5 miles north of the Project site. The topography of the site generally slopes upwards to the north and east and the lower, easternmost extent of the Airport Mesa landform extends across the southwestern portion of the site. On-site vegetation communities include juniper woodland and Sonoran mixed woody scrub. Plants commonly associated with these communities include creosote bush (*Larrea tridentata*), ephedra (*Ephedra* spp.), jojoba (*Simmondsia chinensis*), and yucca (*Yucca schidigera*) and a variety of annual forbs in the herbaceous layer. Plant communities vary in height from 1 to 6 feet and colors tend to be yellow, brown and gray during dry seasons and green during wet seasons. The overall color value is medium to dark with dark shadows. The rounded, shrubby form, light to dark green color and rough texture of desert vegetation, as well as the tan to gray color of exposed rocky soils, is displayed across much of the site. The spatial distribution of vegetation varies. The majority of the site has a scattered, patchy composition; however, moderately dense stands of vegetation occur adjacent to washes/drainages. Views from the site are relatively wide in nature but tend to be enclosed by the Jacumba Mountains to the east and the In-Ko-Pah Mountains to the north. The tall, mounded form of Airport Mesa limits the availability of long views to the west and tends to direct the eye to the northwest.

East of the site, the terrain rises gently at first and then much more steeply into the Jacumba Mountains and the vegetation exhibits a coarse, patchy texture. The Jacumba Mountains extend to the south into Mexico, where they are referred to as the Sierra de Juarez. Tall, skylined wind turbines have recently been installed atop the Sierra de Juarez southeast of the Project site. Steel lattice structures and a curving access road associated with the wind turbine project descend the ridgeline and west-facing slopes and proceed to the northwest toward the international border. A series of electrical lines span the international border fence and are supported by three steel lattice structures. The approximately 1-mile-long segment of electrical lines (and three steel lattice structures) located north of the international border comprise the Energia Sierra Juarez (ESJ) gen-tie line project and eventually tie into the ECO Substation. South of the Project site, the brown vertical slats and rust-colored rectangular panels of the international border fence create a bold, dark line that interrupts the intactness of the landscape and the continuity of desert vegetation and exposed pale soils. Also, while not prominent due to the screening effect of existing vegetation and terrain, the straight line created by the wide, exposed tan soil surface of the border fence access road disrupts the continuity of vegetation across the landscape. Tall, steel lattice structures of the Southwest Powerlink and Sunrise Powerlink transmission lines are visible to the north, as is traffic on I-8 and Old Highway 80 and the large, rectangular form of

Table Mountain. The tan-colored, sloped walls of the ECO Substation;, tall, steel substation racks and bays; and large 138 kV transmission line monopoles are located to the northeast and north. Although not currently installed, four additional monopoles associated with the ECO Substation 138 kV transmission line would be constructed between the ECO Substation and Old Highway 80. The ECO Substation is accessible via a paved asphalt driveway constructed off Old Highway 80.

The undeveloped natural lands in the immediate Project area and the presence of mountainous terrain create a generally rural ambiance; however, modifications to the landscape associated with electrical infrastructure and the international border fence are visible and partially interrupt the intactness of the natural landscape.

4.1 Project Setting

The Proposed Project is located in southeastern San Diego County at the convergence of the California Peninsular Ranges and desert regions at an elevation of approximately 3,100 feet above mean sea level (amsl). Mountainous terrain is located north and east of the Project site and reaching off to the south into Mexico. The Jacumba Mountains are located to the east of the Project site, the In-Ko-Pah Mountains are located to the north, and Gray and Table Mountains are located to the northwest and north of the site at distances of 2.5 and 1.75 miles, respectively, at elevations of approximately 3,800 feet amsl. Jade Peak, a conical, elevated landform with an approximate summit elevation of 3,600 feet amsl, is located south of I-8 and less than 1 mile northeast of the Project site. Nopal Peak, with an elevation of just under 4,300 feet amsl, lies approximately 1.4 miles to the east-northeast in Imperial County. At an elevation of just under 3,600 feet amsl, the broad Airport Mesa landform is located immediately west of the Project site and provides a topographic barrier to direct lines of site to the community of Jacumba Hot Springs.

The local mountainous terrain near the Project site is rugged and steep, and typically covered by scattered, dark green chaparral vegetation and grayish granitic boulders on west-facing slopes. East-facing slopes are typically dotted with desert chaparral. Elevations in the desert region range from sea level to approximately 3,000 feet amsl. The terrain is variable and consists of the low desert floors, alluvial fans, foothills and mountains. The mountainous terrain is generally undeveloped; however, dispersed rural residential development is located in lower-lying desert valleys and is difficult to discern at greater viewing distances. The Project site is situated in the eastern extent of the Jacumba Valley.

4.2 Project Viewshed

The Project viewshed encompasses the landforms in the surrounding area from which the Project would be visible. Due to the presence of higher-elevation terrain to the southeast and southwest, portions of the viewshed lie outside the United States and extend to the south into Mexico. Because these resources are part of the Project viewshed that is perceived by receptors within the United States, these resources are considered part of the visual analysis. As stated above, the Project site is located in the eastern extent of the Jacumba Valley. The physical limits of the Project viewshed are defined by the presence of higher-elevation topography to the west, north, and east and by the presence of the international border fence to the south. The Jacumba and In-Ko-Pah Mountains to the east and the north limit the extent of the Project viewshed, as does the elevated terrain of the Airport Mesa landform to the west. Views to the Project site from high-elevation peaks and ridgelines to the east, north, and west are available and tend to be panoramic and expansive in nature.

Juniper woodlands are present on the Project site; however, the predominant vegetation community in the Project viewshed is Sonoran mixed woody scrub. The continuity of light to dark-green colors and coarse texture of scrub vegetation on the valley floor is interrupted by patches of the light tan colored soils of desert terrain and sandy washes. Lightly colored exposed boulders are also present in the landscape. These features appear in mounded outcrops on the valley floor, dot mountainous terrain, and are occasionally draped over lower-elevation hills. The steep, rugged and rocky terrain of the Jacumba Mountains, the flat mesa top and spreading base of Table Mountain and Airport Mesa, and the conical form of Jade Peak are also present in the viewshed and contribute unique forms to the visible landscape. Unlike the ground plane of the landscape, these landforms tend to display tan or tan–reddish hues that create color contrast and attract the attention of passing motorists.

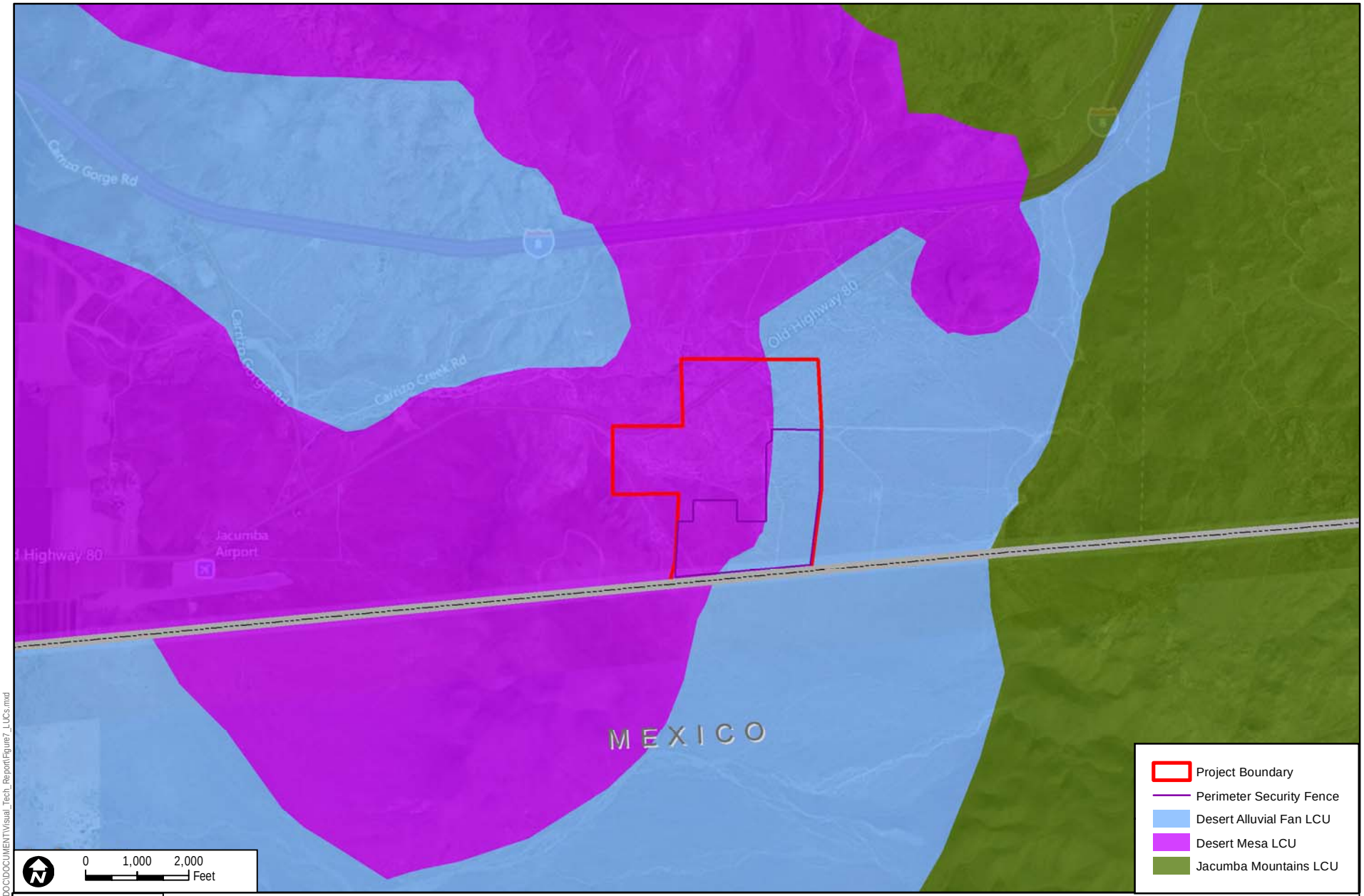
Although the viewshed primarily consists of undeveloped desert lands and washes, regional and local transportation corridors, regional energy infrastructure, and sparse rural residential development are also supported. I-8 creates an east–west cut through the viewshed from which motorists are afforded views of the valley and mountain landscape. Mobile viewers (i.e., motorists) are offered long views along segments of the I-8 between mountain ranges; however, unencumbered views to the south and north are interrupted by road cuts and/or boulder outcrops that partially enclose the visible landscape. Old Highway 80 is the primary local road in the viewshed and provides connectivity between the rural communities in the area. Through the Project viewshed, I-8 is an eligible state scenic highway and both I-8 and Old Highway 80 are included in the County of San Diego's Scenic Highway System.

In addition to wind turbines and steel lattice structures in Mexico, tall, geometric steel lattice towers associated with the ESJ gen-tie and the 500 kV Southwest Powerlink and Sunrise Powerlink transmission lines are located in the viewshed. Numerous steel structures and components comprising bays and transformer banks at the ECO Substation also contribute to the Project viewshed and the gray surface and light-tan-colored slopes of the ECO Substation yards create noticeable color contrast with the surrounding expanse of low, gray/green vegetation and sandy exposed soils. Rural residential development in the viewshed is limited and consists of modest single-story residences located on private land approximately 3,500 feet to the north and 5,370 feet to the northwest of the Proposed Project's on-site substation yard.

4.3 Landscape Character Units

A landscape character unit (LCU) is a portion of the regional landscape that is analogous to an outdoor room, which exhibits a distinct visual character. Terrain, vegetation, and existing land use contribute to the distinctness of visual character. Slopes, watershed ridges, and other physical elements can serve to distinguish one unit from another. The lines and elements that define LCUs may be abrupt and obvious (a mountainous ridgeline for example) but may also be less obvious and transitional in nature (the broad sweep of a valley or a transitional uplands area featuring irregular clumps of granite boulders which slowly gradate to distinct boulder-strewn mountain foothills). A landscape unit will often correspond to a place or district that is commonly known among local viewers.

For purposes of this study, three LCUs were identified in the Project area: Desert Alluvial Fan LCU, Jacumba Mountains LCU, and the Desert Mesa LCU. The approximate LCU boundaries are depicted in Figure 6, Landscape Character Units. LCUs in the Project area were first identified in the *Visual Resources Report for the Energia Sierra Juarez U.S. Transmission, LLC Generation Tie Line Project* (ICF Jones & Stokes 2010). These LCUs were reviewed and observed during site visits and were slightly modified for inclusion in this visual resources report. While the characteristics of the LCUs previously identified are verified in this study as the prevailing features of units within the identified viewshed, the LCUs' names were modified to be more indicative of similar topographical characteristics. In addition and as shown on Figure 6, this report acknowledges that the Desert Alluvial Fan LCU, Desert Mesa LCU, and Jacumba Mountains LCU extend into Mexico to complete the overall viewshed area.



SOURCE:Bing 2014

FIGURE 6

Landscape Character Units

DUDEK

8477

Jacumba Solar Project Visual Resources Report

Path: Z:\Projects\8477\01\MAP\DOC\DOCUMENT\Visual_Tech_Report\Figure7_LUCs.mxd

INTENTIONALLY LEFT BLANK

Desert Alluvial Fan LCU

The Desert Alluvial Fan LCU is centrally located within the Project viewshed and abuts the rising, mountainous terrain of the Jacumba Mountains LCU to the east and the gradual sloping terrain of the Desert Mesa LCU to the west. The elevated mesa top form of Airport Mesa is located to the west and south and Desert Alluvial Fan LCU surrounds the conical form displayed by Jade Peak. Based on aerial photography, there is visual continuity of this LCU with similar vegetation and terrain that occurs south into Mexico to the base of the Jacumba Mountains / Sierra de Juarez Mountains (south of the international border, this range is referred to as the Sierra de Juarez Mountains). Therefore, as shown on Figure 6, the Desert Alluvial Fan LCU extends to the south into Mexico. This LCU is defined by a patchwork of light to dark green and occasional gray mixed woody scrub shrubs regularly interrupted by lightly colored exposed tan soils and, intermittently, by the tan-reddish colors of boulder outcrops. Low, sandy washes are also present in the LCU and are distinguishable by their lack of vegetation, smooth sinuous form and lightly colored sandy soils. Located south of I-8, elevations of the LCU range from approximately 3,100 feet to 3,200 feet.

Cultural modifications in this LCU include Old Highway 80, ESJ gen-tie, the Southwest Powerlink and the Sunrise Powerlink 500 kV transmission lines, the ECO Substation, and numerous dirt roads. Old Highway 80 introduces straight, disparate lines to the landscape and the paved asphalt surfaces contrast with the tans and green hues of the surrounding desert landscape. At a distance and from superior viewing angles, large steel lattice structures of the ESJ gen-tie, Southwest Powerlink, and the Sunrise Powerlink are backscreened by mountainous desert terrain and as a result tend to blend into the colors of background terrain. However, when viewed from an inferior viewing angle, the large scale of the geometric structures becomes apparent and the tall forms and complex lines become prominent features in the landscape. Similarly, the tan color of ECO Substation yard slopes and repetitive tall, bold forms of transmission line steel support structures disrupt the intactness and unity of the LCU.

Jacumba Mountains LCU

Located east of the Project site, the Jacumba Mountains comprise the eastern flank of California's coastal peninsular ranges. The LCU consists entirely of the portion of the Jacumba Mountains located in the Project viewshed. The mountain range is relatively wide and characterized by a series of almost parallel rocky ridgelines and intervening valleys that descend from west to east towards to the Colorado Desert. In the United States, this LCU primarily consists of public lands managed by the BLM as wilderness. Popular destinations in the Congressionally designated wilderness include Davies Valley, Valley of the Moon, and Smuggler's Cave. In the vicinity of the Project, the elevation of the Jacumba Mountains range

from approximately 3,500 feet at the western foothills to 4,300 feet at the summit of prominent peaks located east of the Project site.

The LCU rises abruptly from the adjacent Desert Alluvial Fan LCU. Rocky foothills appear lighter in color than more prominent peaks and elevated terrain. Peaks and ridgelines display both pyramidal and broad arching forms that extend south past the international border and into Mexico. South of the border, the mountainous terrain is referred to as the Sierra del Juarez range and several wind turbines have been installed atop prominent peaks and steel lattice structures descend the ridgeline to deliver power to the ECO Substation across the international border. The grayish, west-faces slopes of the Jacumba Mountains support boulder outcrops and sporadic clumps of low, dark green to gray shrubs. The rocky, rugged ridgeline of the mountains is silhouetted against the desert sky creates a vivid scene and comprises an element of interest to passing motorists and locals. North of the international border, the LCU is primarily undeveloped; however, several access roads traverse the western foothills and intervening valley areas and the tall, thin lines displayed by communication towers at a small, unmanned communication facility located atop Nopal Peak add contrasting lines and forms to the landscape. Access roads and the communications towers are visible from eastbound I-8 and Old Highway 80.

Desert Mesa LCU

Several isolated mesas are present in the region and within the Project viewshed area. These mesas include Jade Peak, Airport Mesa, and Table Mountain. These land features share common topographic forms, soil color, and spatial relationships with the surrounding landscape. Each feature is isolated from adjacent mountainous terrain and is typified by a lower profile and broad flat mesa top with gently sloping sides that gradually spread out and downward into the adjacent Desert Alluvial Fan LCU. A description of each feature is provided below.

Jade Peak

Jade Peak is a low, conical hill that rises from the Desert Alluvial Fan LCU and is located west of the Jacumba Mountains LCU. Jade Peak is also located south of I-8 and northeast of the Project site. Elevations range from approximately 3,240 feet amsl at the wide, spreading base to nearly 3,600 feet amsl at the peak. Vegetation at the base of Jade Peak is similar to that of the surrounding Desert Alluvial Fan LCU. Low to moderately tall, spreading shrubs are relatively patchy in distribution and display colors ranging from tan to gray to dark green. As the terrain climbs towards the summit, vegetation appears to become slightly denser and exhibits a smoother texture. From eastbound Old Highway 80 and I-8, a short vertical occurrence of exposed rock is visible on the northwest-facing slope and disrupts the gradual rising line and

form created by the slopes of Jade Peak. Where visible beneath vegetation, the soils of the low hill display a reddish-rust colored hue that is darker in value than other prominent landforms and terrain in the viewshed.

Jade Peak displays a primarily natural, rugged character that is briefly interrupted by cultural modifications. While the peak is undeveloped, two large, geometric steel lattice towers associated with the Southwest Powerlink are located at the base of the peak's southern slopes. Dirt access roads between the structures also traverse the landform and create straight lines and sandy colors that contrast with that of the characteristic woody scrub vegetation and darker colored soils of the LCU. Dirt access roads are also located on the west, north and east-facing slopes. Although the peak is an elevated landform surrounded by the comparably low, spreading form of the Desert Alluvial Fan LCU, Jade Peak is routinely backscreened by the Jacumba Mountains and is rarely skylined. Still, the reddish tinged soils of the LCU tend to stand out when viewed against the backdrop of the tan to grayish colors displayed by the Jacumba Mountain LCU. The simple, conical form and reddish hues of Jade Peak creates an element of moderate interest in the Project viewshed.

Airport Mesa

The Airport Mesa landform is comprised of a wide spreading base that rises to form a series of relatively flat mesa tops. Elevations range from approximately 2,870 feet at the base to approximately 3,580 at the mesa tops. Vegetative coverage appears denser at the base than on the higher elevation terrain. The mesa displays yellow to tan colored hues and a generally smooth, sloping façade. As viewed from Old Highway 80 and I-8, the reddish colored international border fence and lightly colored exposed soils of a rising access road on east-facing slopes disrupt the mesa intactness and visual unity; interrupting the otherwise uniform color and texture of the landform. Managed by the BLM for its rural recreation opportunities, the rising terrain of Airport Mesa obstructs views of the Project site from the community of Jacumba and helps define the Project viewshed.

Vegetated by typically sparse, low shrubs and yellow-tan to rust colored grasses, Airport Mesa is unique in that rock outcrops are fairly limited and occur primarily on the north-facing slopes of the landform. With the exception of the rust-colored international border fence and Border Protection access (both of which are highly visible from surrounding roads) development is limited. The international border fence nearly bisects the mesa and creates a bold, dark colored line that contrasts with the lighter colored Airport Mesa landform. While difficult to view from Old Highway 80 and I-8, the straight, light-colored line created by the Border Protection access road that parallels the border fence is visible from the Project site and is prominent in aerial photographs.

Table Mountain

Table Mountain is a relatively vast expanse of land that includes a prominent albeit generally obscured peak surrounded by a descending series of long, wide mesa top features. Table Mountain is located north of I-8. North of I-8, the dark-green mixed scrub vegetation and exposed tan to reddish terrain gradually rises towards the pronounced uplifted mesa forms. Vegetation on the steeper mesa slopes is sparser and the slopes are awash in underlying colors ranging from tan to yellow to reddish rust. The mesa top is generally flat; however, when viewed from Old Highway 80 and I-8, the asymmetrical landform displays a diagonal line created by variations in east–west elevations. Several valleys and corresponding washes are located on the south-facing slopes of mesa landform. Rocky and routinely dry washes extend beyond the southern slopes of the Table Mountain mesa complex to I-8. Elevations of the mesa complex within in the Project viewshed range from approximately 3,200 feet at the wide landform base to approximately 3,775 feet at the mesa top located closest to I-8.

5 EXISTING VISUAL RESOURCES AND VIEWER RESPONSE

5.1 Existing Visual Resources

5.1.1 Visual Character

The visual character of each of the identified LCUs is described in Section 4.3, Landscape Character Units.

5.1.2 Visual Quality

A discussion of the visual quality as it pertains to the vividness, intactness, and unity associated with each identified LCU identified in the Project area is presented below. Vividness, intactness, and unity are discussed below and evaluated according to a scale of low, moderately low, moderate, moderately high, and high.

Desert Alluvial Fan LCU

Vividness

Compared to surrounding LCUs, this LCU displays a consistently low, flat and spreading form. In addition, the Desert Alluvial Fan LCU supports a patchwork of coarsely textured, light to dark green and occasional, gray, mixed woody scrub vegetation regularly interrupted by lightly colored exposed tan dry washes and intermittently, by tan-reddish and gray colored boulder outcrops. Vegetative coverage in the LCU tends to be more dense than in the more mountainous LCUs in the area but colors and textures are generally uniformly drab and coarse. The sinuous form and line of several low, sandy washes are also included in this LCU but are partially obscured when viewed from a normal viewing elevation and acute angle. The LCU includes the contrasting forms, lines and colors displayed by 500 kV transmission lines and steel lattice structures and the ECO Substation. As a result, the overall memorability of the LCU is weakened.

The vividness of the Desert Alluvial Fan LCU is assessed as moderate.

Intactness

While large portions of this LCU are intact and display uniformity in form, color and texture, the presence of numerous access roads, regional energy infrastructure and the international border fence reduces overall intactness. The continuity of coarsely textured, light to dark green and occasional, gray, mixed woody scrub shrubs and lightly colored exposed tan soils is interrupted by the effects of past and current development. More specifically, natural visual patterns of

vegetation and the predominately-horizontal lines of the terrain are interrupted by straight lines displayed by numerous dirt access roads, the dark, curving line of the newly constructed paved ECO Substation access road off Old Highway 80, the tan colored slopes of substation yards and numerous vertical tall, metallic forms of substation support structures. In addition, the bold, dark line of the international border fence abruptly interrupts the integrity of the visual pattern and encroaches upon the primarily natural appearing Desert Alluvial Fan landscape to the south of the Project site.

The intactness of the Desert Alluvial Fan LCU is assessed as moderate.

Unity

Rural residential development, transportation corridors, energy infrastructure and the international border fence have altered the composition of the visual landscape and have diminished the overall unity of the LCU. Rural residential development is visually subordinate to natural features and the straight horizontal line and dark color of man-made linear elements (i.e., transportation corridors at the ground plane) are not typically considered to be contrasting elements in the landscape. As viewers tend to experience landscapes from transportation corridors, the line and color of roads, highways and interstates are viewed differently than landscape modifications occurring outside of the transportation corridor and within the visible landscape. The lightly colored sloped yards of the ECO Substation and the concentration of numerous metallic support structures at the substation locally diminish the integrity of the predominant visual pattern of desert vegetation and terrain. Several large steel lattice structures dot the LCU and while the backdrop of these features is mountainous terrain when viewed from elevated vantage points, from Old Highway 80 the tall, metallic forms are prominent. Lastly, colored marker balls strung between steel lattice structures detract from views of mountainous terrain and the surrounding desert landscape.

The unity of the Desert Alluvial Fan LCU is assessed as moderate.

Jacumba Mountains LCU

Vividness

As viewed from surrounding LCUs, transportation corridors and rural residences in the Jacumba area, the rocky ridgelines of the Jacumba Mountains are visually prominent and create a bold, dark line that defines the eastern horizon. Due to their large and prominent pyramidal and broad arching forms, the Jacumba Mountains are silhouetted against the desert sky and the resulting visual pattern is notable. The elevated mountainous terrain and ridgelines create an element of interest to passing motorists and local residents. With the exception of skylined wind turbines

and tall, geometric steel lattice structures located southeast of the Project site in Mexico, cultural modifications in the LCU are limited in number, are unobtrusive, and do not substantially degrade the memorability of views of the characteristic steep and rocky mountainous terrain.

The vividness of the Jacumba Mountains LCU is assessed as moderate.

Intactness

North of the international border, several narrow dirt roads/trails traverse the west-facing slopes of the Jacumba Mountain and a small communications facility is located atop Nopal Peak. Tall, narrow wind turbines have been recently installed atop prominent peaks in Mexico and several steel lattice structures descend the rugged, west-facing slopes of the Sierra de Juarez. Although light-colored lines created by access roads and the grayish and thin vertical forms of communication towers located east and northeast of the Project site are visually subordinate to the broad, pyramidal, and slightly arching forms of mountainous terrain, wind turbines are prominently displayed on terrain to the southeast and a winding access road has created visible contrast in color, line, and texture with surrounding terrain.

The intactness of the Jacumba Mountains LCU is assessed as moderate.

Unity

South of the international border, wind turbines atop ridgelines and steel lattice structures and a wide access road on west-facing slopes create noticeable contrast and attract attention. In addition, the terrain displays a rugged form and natural-appearing character that is interrupted by white, skylined wind turbines and the winding, light-colored line of an access road climbing south-facing slopes. North of the international border, visible development in the LCU primarily consists of several narrow dirt roads/trails and a small communications facility atop Nopal Peak, and these features are not visually prominent. The steep slopes and broad, yet at times jagged, ridgelines create a seemingly undisturbed backdrop to the local surroundings and attract the attention of viewers in the areas. Although the Nopal Peak communication facility is skylined and contributes straight, vertical lines to an otherwise rugged horizon, communication towers are situated near the northern extent of the LCU and avoid the tallest peaks in the range. Although the integrity of views and visual quality are affected by the inclusion of the communications facility and by wind turbines and steel lattice structures south of the international border, the LCU displays a relatively harmonious visual pattern of steep terrain populated by shrubs and rock outcroppings.

The unity of the Jacumba Mountains LCU is assessed as moderate.

Desert Mesa LCU

Vividness

Jade Peak is backscreened by prominent mountainous terrain to the east and is lower in elevation than both the Table Mountain and Airport Mesa landforms in the Project viewshed. While not visually prominent, the conical form and lines of Jade Peak are unique and are visually distinct from the pyramidal and mesa landforms in the surrounding area. The existing land cover of light to dark green scrub shrubs interrupted by exposed soils is relatively commonplace in the viewshed; however, the reddish-tinged soils of the LCU tend to stand out when viewed against the backdrop of the tan to grayish colors displayed by the Jacumba Mountains LCU. The simple, conical form and reddish hues of the Jade Peak creates an element of moderate interest in the Project viewshed.

The wide spreading base and series of relatively flat mesa tops associated with the Airport Mesa and Table Mountain rise from the surrounding Desert Alluvial Fan LCU west of the Project site. The mesa landform itself is unique in the Project area and when viewed in the context of the surrounding desert environment, the trapezoidal landform and gradual rising, diagonal lines create a distinct visual pattern. Table Mountain includes pockets of lightly colored soils and boulders that contrast with the otherwise uniformly drab color of the landform and sparse vegetation that dot the south-facing slopes. From a distance, these features appear sparsely vegetated and smoothly textured.

The vividness of the Desert Mesa LCU is assessed as moderate.

Intactness

Existing 500 kV transmission line structures located in the LCU are tall and display a series of complex, geometric lines. However, these features are occasionally backscreened by the Jacumba Mountains and as a result are not visually prominent. In addition, an existing access road traversing the west- and south-facing slope of Jade Peak is obscured from the view of passing Old Highway80 motorists by intervening terrain and vegetation. The access road is visible to eastbound I-8 motorists and while the horizontal, lightly colored line contrasts with the gradually sloping line and dark green and tan-reddish color of vegetation and terrain, the contrast is experienced briefly and does not substantially affect the overall intactness of LCU.

While the trapezoidal form and seemingly smooth façade of the Airport Mesa LCU is unique and visual striking, the mesa landform is nearly bisected by the rust colored slats and panels of the international border fence. A man-made feature that encroaches on the visual pattern of the LCU, the dark colored fence climbs a portion of the west- and east-facing slopes of the mesa landform

and is visible from Old Highway 80, I-8, and surrounding undeveloped lands. In addition to the fence, the line and color contrasts created by the Border Protection access road climbing the east-facing slope of the landform is apparent to westbound Old Highway 80; however, from other locations in the viewshed, the access road is obscured and visual effects are concealed.

From inferior and normal viewing angles (such as from I-8 and Old Highway 80), the Table Mountain LCU appears untouched and displays a slight diagonal line created by variations in east-west elevations. While variations in colors and textures are visible and are associated with the geologic properties of the landforms, modifications to the LCU are difficult to detect by passing motorists. Views of gradually rising terrain and steep mesa slopes are visible along the I-8 corridor; however, dirt access roads climbing the northeast-facing slope are concealed by terrain and the network of roads/trails atop the mesa landform is revealed only after a review of aerial photography. This LCU is experienced and observed primarily at the ground plane and from this vantage point; the LCU appears to be free of visually encroaching elements.

The intactness of the Desert Mesa LCU is assessed as moderately high.

Unity

Factors that affect visual unity within the Desert Mesa LCU include the presence of large transmission lattice towers and gen-tie monopoles associated with the ESJ gen-tie, Southwest Powerlink, Sunrise Powerlink, and ECO Substation, respectively. Other features analyzed include existing\paved and unpaved roads that modify the surface texture of the natural features. This LCU is composed of prominent landforms that contribute to the overall character of the scene enjoyed by residents or motorists passing through the Project viewshed.

The Desert Mesa LCU is a primarily natural appearing landscape with visually encroaching elements. Several existing unpaved access roads have varying degrees of visibility and several roads are screened from the view of passing I-8 and highway motorists. Transmission infrastructure present within the Desert Mesa LCU has produced moderate visual effects due to blending with the landscape backdrop and the comparative scale relationship with the mesa landforms. Therefore, natural elements such as terrain and vegetation create the observable visual pattern of the LCU. Because modifications are generally concealed, the introduction of access roads has not substantially affected the visual unity of the natural landscape elements.

As mentioned above, steel lattice towers, monopoles, transmission wires, and wire identification/ marker balls are included in the LCU. The majority of the poles and towers are viewed against the backdrop of the rising, tan to grayish-colored terrain of the Jacumba Mountains. As a result, steel lattice towers tend to blend into background elements and do not command the attention of

passing motorists or display overly noticeable visual contrast. Line and color contrast created by the existing road access is noticeable when viewed from a superior viewing angle; however, the contrast is experienced briefly and the prominent natural landform elements of this relatively LCU remain dominant.

While mesa tops display a variable line and form, slight variations in elevation are visible when viewed from Old Highway 80 and I-8 and as such, the straight horizontal line of the border fence that climbs up the side of the Airport Mesa portion of the LCU contrasts with the smooth, flowing horizon line of the mesa landform. While large portions of the Desert Mesa LCU appear untouched and display a rugged, almost mountainous character, the international border fence is a disparate landscape element that diminishes the visual quality and unity of the Desert Mesa LCU.

The unity of the Desert Mesa LCU is assessed as moderately high.

5.2 Viewer Response

Viewer response is based on several factors including viewer sensitivity, viewer groups, viewer exposure, and viewer awareness. Each of these factors influences how a viewer might respond to a change or changes in the environment and in particular to changes involving development of a site from a natural, undeveloped state. Each factor contributing to viewer response is discussed below.

5.2.1 Viewer Sensitivity

The Jacumba solar facility is located within the eastern extent of the Jacumba Subregional group area of the Mountain Empire Subregion. While the community of Jacumba does not have a stand-alone community or subregional plan, the community sponsor group has adopted a vision statement that describes the services the community envisions as necessary and discusses the existing resources valued by the community. As stated in the vision statement, "the community supports new development that is compatible with and preserves the natural and historical environment" (County of San Diego 2011d). Furthermore, proposed growth shall be effectively managed "to reinforce the rural small town character of the area." Based on the vision statement and comments received, concerns of the community include potential Project-generated glare and associated effects to residents, motorists and aircraft, the alteration of the existing site through removal of vegetation and installation of racks of solar panel modules, and effects to the existing rural desert character of the Project area.

The Project would be visible to two rural residences, motorists on I-8 and Old Highway 80, and an assumed low volume of recreationists at the Jacumba Mountains, Table Mountain ACEC and possibly, at Airport Mesa. Airport Mesa is a recreation management zone managed by the BLM. Policies of the County of San Diego General Plan Conservation and Open Space Element and the

Mountain Empire Subregional Plan support the protection of existing scenic resources, visual character and scenic corridors. In addition, in the Project area, I-8 is an eligible state scenic highway and both I-8 and Old Highway 80 are included in the County of San Diego's Scenic Highway System (County of San Diego 2011b). It should also be noted, however, that the international border fence displays a strong visual presence in the Project viewshed, as do the sprawling yards and numerous metallic and geometric support structures of the ECO Substation that is currently under construction. Therefore, for purposes of this report, a moderately high level of visual sensitivity is assumed in the Jacumba planning area.

5.2.2 Viewer Groups

Viewer groups analyzed in this study consist of individuals that frequent public viewpoints in the Project viewshed. Three viewer groups were identified: residents, motorists and trail-based recreationists on public lands in the surrounding area. As previously mentioned, two residences are located in the Project viewshed as are short segments of I-8 and Old Highway 80. Trail-based recreation occurs on BLM-designated routes and lands at the Jacumba Mountains, Table Mountain ACEC, and Airport Mesa; therefore, trail-based recreationists were identified as a distinct viewer group.

Residential Groups

Based on site observations and a review of aerial photography, there are two residences located in the Project viewshed. One residence (R1) is located south of I-8 approximately 0.7 mile north of the proposed solar facility, and approximately 0.5 mile north of the proposed gen-tie transmission line. The other residence (R2) is located north of I-8 and approximately 1 mile north of the proposed solar facility and gen-tie transmission line. Due to a lack of intervening terrain and vegetation, both residences would experience direct views to the Project site. The locations of R1 and R2 are depicted on Figure 7.

Views of the Project from R1 fall within the middleground to foreground view distance. An existing landscaped perimeter of 8- to 12-foot-tall mature trees surrounds R1. The presence of mature trees in close proximity to R1 could screen or partially screen views to the Proposed Project site and gen-tie poles/lines. The house is situated approximately 29-32 feet above the Project site, creating a low angle view that would further reduce visibility of the Project due to intervening vegetation. The southerly view direction also places the Project site in a backlit condition for much of the daylight hours when residents would be active. This condition would reduce the visibility of Project details because the visible side of the solar facility would be in shadow and the viewer would be viewing into the oncoming sunlight.

Project views from R2 are more distant than from R1. The middleground distance and backlit condition as discussed above would limit visibility of Project features. The house is situated approximately 88-91 feet above the Project site. This superior view angle places the Project within the lower portion of the vista obtained from this location that stretches into Mexico. As such, the limited visibility of Project detail and position within the landscape would both serve to minimize the prominence of the Project within the overall viewshed for the R2 location.

The more concentrated residences in the community of Jacumba Hot Springs community are located approximately 3.4 miles west of the Project. Views to the Project site from the community are blocked by Airport Mesa.

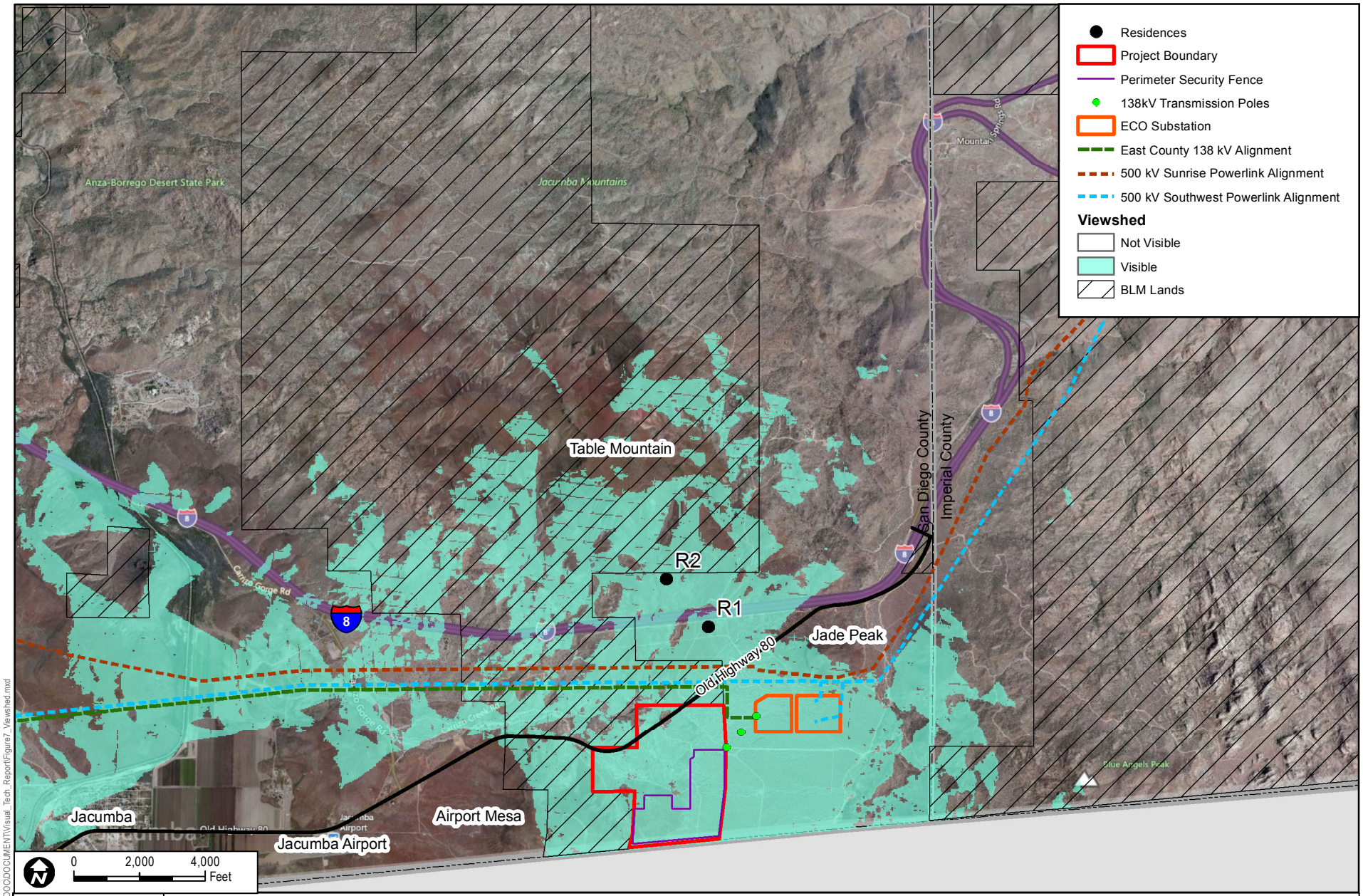
The sensitivity of residential viewer groups is anticipated to be moderate, except those individuals with direct, unobstructed views to the Project whose sensitivity is likely to be moderately high.

Motorists

As stated in Section 1.47, the Project viewshed extends north of the Project site and encompasses discontiguous segments of Old Highway 80 and I-8. The discussion below characterizes the visibility of the Project site from the east and westbound lanes of Old Highway 80 and I-8.

Old Highway 80

An approximately 1.4-mile-long segment of Old Highway 80, generally from Jade Peak west to Airport Mesa, is located in the Project viewshed. Old Highway 80 is a scenic corridor identified on Figure C-5 (Scenic Highways) of the General Plan Conservation and Open Space Element (County of San Diego 2011b). Although not continuous, existing views to the low, mounded hill and lower-elevation portions of the Project site are available along this relatively short segment of the highway. From eastbound motorists, visibility to the site is generally unencumbered along the pronounced curve of the highway north of the Airport Mesa landform. Further to the east, the low, mounded hill exits the field of vision and the site is briefly obscured by two elevated, roadside-adjacent berms populated with low boulder outcrops and scattered native shrubs. Between the berms and the paved driveway to the ECO Substation, views to the south are relatively unimpeded. East of the ECO Substation driveway, the Project site is generally outside the normal field of vision of motorists.



SOURCE:Bing 2014

FIGURE 7

Viewshed

DUDEK

8477

Jacumba Solar Project Visual Resources Report

Path: Z:\Projects\8477\01\MAPDOC\DOCUMENT\Visual_Tech_Report\Figure7_Viewshed.mxd

INTENTIONALLY LEFT BLANK

West of Jade Peak, existing views of the Project site from westbound Old Highway 80 are obscured by a noticeable uplift in the terrain to the south. However, views are available through several pronounced peaks and dips in the roadway between Jade Peak and the ECO Substation driveway. In addition to higher-elevation terrain to the south, the varying elevation of the highway and shrub, spreading vegetation affects the availability of views to the lower-elevation portions of the Project site but the low, mounded hill rises above the valley floor vegetation. West of the ECO Substation driveway, views to the south and to the Project site are the same as discussed above for eastbound motorists.

Interstate 8

I-8 from the El Cajon city limits to the Imperial County line is a scenic corridor identified on Figure C-5 (Scenic Highways) of the General Plan Conservation and Open Space Element. I-8 cuts a dark, horizontal line through the landscape and intermittent views to the Project site are available between Exit 73/Carrizo Gorge Road and Jade Peak (a distance of approximately 3 miles). However, between these locations/features, the presence of intervening terrain, vegetation, large rock outcrops, and I-8 road cuts interrupt the availability of long, continuous views. From the eastbound travel lanes, continuous and unimpeded views of the Project site are available after motorists pass through an elevated road cut located approximately 0.5 mile west of the Mica Gem overpass/bridge. From the westbound travel lanes of I-8, unobstructed views to the Project site and into Mexico are generally available upon passing the conical Jade Peak landform and extend to the elevated road cut located west of the Mica Gem overpass. A mounded berm/road cut occurs along this segment and limits views to the south, but this feature is relatively short (i.e., approximately 600 feet long).

Recreationists

Superior angle views of the Project site are available from a BLM designated motorized route that traverses the Jacumba Mountains at the southwestern most corner of Imperial County. Dispersed recreation (i.e., hiking) also occurs in the BLM-managed and non-BLM-managed areas of the Jacumba Mountains and prominent rideglines offer opportunities for long views to the western horizon. Other BLM designated motorized routes are located on Airport Mesa and in the Table Mountain ACEC (designated non-motorized routes are also located on Table Mountain). Although motorized access to these trails is generally limited to four-wheel-drive vehicles (existing trails and roads are steep and rocky) and no formal trailheads or parking areas have been developed, the trails are used by local hikers, hiking clubs, and horseback riders. According to the BLM, the Jacumba Mountain Wilderness, Nopal Peak, and Elliot Mine area are accessible via a narrow and winding designated motorized route located off Old Highway 80 and east of the San Diego and Imperial County border (BLM 2014, 2010). As stated in Section 2.1.1,

Surrounding Land Uses, the Table Mountain ACEC is managed by the BLM for biological and cultural values; however, existing designated motorized and non-motorized routes are present in this area and may be used by area recreationists to access scenic and panoramic vista points and limited hiking opportunities. The flat mesa top of the southernmost portion of the Table Mountain landform is located approximately 1.5 to 2 miles north of the proposed solar facility. Lastly, while managed by the BLM for its rural recreational qualities, existing designated motorized routes provide limited recreational opportunities at the Airport Mesa landform. The international border fence nearly bisects the landform and access roads are regularly used by Border Protection vehicles when conducting patrols in the area. No staging or parking areas for hikers or other trail-based recreationists are provided in close proximity to the Airport Mesa landform and users often rely on the U.S. Customs and Border Protection access road to reach the top of Airport Mesa. Also, the recreational qualities of Airport Mesa were further limited by a temporary prohibition of target shooting along Airport Mesa enacted by the BLM in 2009 (BLM 2009, 2010).

Based on visual evidence of a complex trail network that extends from the designated BLM trail to the edge of the mesa top, a viewpoint on the southern edge of the mesa landform in the Table Mountain ACEC appears to be used by off-road recreationists. A broad vista is available from this location that stretches from desert views to the east to distant views south into Mexico and southwest to the community of Jacumba Hot Springs. With the exception of the south-facing slope of the low, mounded hill, the Project is visible in its entirety from this viewpoint.

5.2.3 Viewer Exposure

Existing viewing conditions and exposure of residents, I-8 and Old Highway 80 motorists, and recreationists at the Jacumba Mountains, Table Mountain ACEC, and Airport Mesa to the Project site are addressed in Section 5.2.2.

5.2.4 Viewer Awareness

Due to the permanent nature of views, the existing natural state of the Project site and the familiarity with the local area landscape, residents, local area motorists, and recreationalists in the immediate area are anticipated to be highly aware of changes occurring in the existing landscape setting. Commuters and other motorists passing through the may not be as familiar with the local area landscape and as a result, would not be as sensitive to changes in the environment as the local area population. In addition, the alteration of the landscape to accommodate the proposed solar facility may not fully "register" to casual motorists on I-8 and Old Highway 80 due to brief nature of available views, unfamiliarity with the landscape and the presence of existing cultural modifications in the Project viewshed. However, for purposes of

this study, viewer awareness is anticipated to be moderate to high based on the characteristics of the existing rural environment, the expressed and anticipated concerns of the community, and the inclusion of I-8 and Old Highway 80 in the County Scenic Highway System.

While the volume of sensitive visual receptors is anticipated to be low, trail-based recreationists on public lands to the north and west are assumed to have a moderate to high level of awareness regarding changes to the local area landscape. The visual expectations for recreationists in southeastern San Diego County would be that of a natural looking landscape with transportation corridors and occasional rural residential and roadside commercial uses. Vegetation and terrain would likely be the perceived dominant features in the landscape.

INTENTIONALLY LEFT BLANK

6 VISUAL IMPACT ASSESSMENT

To approximate the visibility of Proposed Project in the surrounding area, a proposed Project viewshed was created and is presented in Figure 7. Figures 7a and 7b present a more detailed version of the proposed Project viewshed as it relates to I-8 and Old Highway 80. The viewshed presented in Figure 7 does not consider the screening effect of existing vegetation and structures, and was created by assigning a height of 8 feet (i.e., the height of proposed solar panel installed on the proposed racking support system) at 16 locations within the identified solar facility boundary. In addition, a height of 150 feet was assigned to potential gen-tie pole locations along the proposed gen-tie line corridor. The GIS-based software then references the assigned height of the Project components and creates a raster file consisting of points or terrain in the surrounding area from which the assigned height would be visible. The viewshed presented on Figure 7 is an approximation of the potential visibility of Project components from locations in the United States and is based purely on the elevation of existing terrain and the assigned elevation of Project components. No digital topographic data was available for analysis of the viewshed area within Mexico, which would be dominated by the international border fence at all but the highest nearby elevations.

Although the Project viewshed approximates the availability of views of the Proposed Project from the surrounding area, the visual impact assessment uses visual simulations of the Proposed Project from identified Key View locations to assess the level of visual change and overall effects to visual resources within the Project viewshed. Key Views are essentially static images of the area that are selected as representative locations from which views of the Project would be experienced by sensitive receptors. However, visual resources are experienced in dynamic conditions as people move through the environment in the conduct of their daily lives. This dynamic experience forms human perception of surroundings and these perceptions can be modified by many variables such as viewer activity (driving, work activities, recreational activities, etc.) and atmospheric conditions, among others. For solar energy projects, political and economic values can modify personal attitudes toward visual change when the project represents a valued social and/or personal goal. However, these attitudes are more difficult to assess and the acceptable balance between personal lifestyle and larger economic themes is not easily weighed.

This visual impact assessment focuses on the dynamic experience associated with the Proposed Project and uses Key View simulations to inform the analysis. However, other factors that modify perception and public attitudes are considered in order to reach conclusions regarding visual resource impacts and significance determinations. The potential effects of the Project on visual resources are evaluated for each Key View in the context of the overall LCU and how viewers experience and form perceptions of the visual resources through an experiential process.

6.1 Guidelines for Determining Significance

The County of San Diego Guidelines for Determining Significance and Report Format and Content Requirement for Visual Resources (County of San Diego 2007) and Dark Skies and Glare (County of San Diego 2009) were reviewed to determine the applicable significance thresholds for the Proposed Project. According to the County of San Diego Guidelines for Determining Significance, a project will generally be considered to have a significant effect if it proposes any of the following, absent specific evidence to the contrary:

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