2.0 SIGNIFICANT ENVIRONMENTAL EFFECTS OF THE PROPOSED PROJECT

This chapter of the environmental impact report (EIR) provides discussions of those effects that through the course of analyzing the environmental effects associated with the Proposed Project were identified as significant. Each environmental issue area describes existing conditions, regulatory setting, analysis of project effects and determination as to significance, cumulative impact analysis, significance of impact prior to mitigation, mitigation, and conclusion. The environmental issue areas addressed in Chapter 2.0 are as follows:

- Aesthetics (Section 2.1)
- Air Quality (Section 2.2)
- Biological Resources (Section 2.3)
- Cultural Resources (Section 2.4)
- Land Use and Planning (Section 2.5)
- Noise (Section 2.6).

2.1 Aesthetics

This section discusses potential impacts to aesthetics and visual resources including potential impacts to the visual character of the project site and surroundings resulting from the implementation of the Proposed Project. The analysis is based on the review of existing resources, technical data, and applicable laws, regulations, and guidelines, as well as the following technical studies prepared for the Proposed Project, which were prepared in accordance with the County *Guidelines for Determining Significance and Report Format and Content Requirements: Visual Resources* (County of San Diego 2007) and *Guidelines for Determining Significance and Report Format and Content Requirements: Dark Skies* (County of San Diego 2009):

- *Visual Resources Report, Tierra del Sol Solar Farm Project* (Appendix 2.1-1)
- *Rugged Solar LLC Project, Visual Resources Technical Study* (Appendix 2.1-2)
- *Boulevard Glare Study* (Appendix 2.1-3)
- *Landscape Screen Design Report for the Soitec Solar Development Program EIR* (Appendix 2.1-4).

2.1.1 Existing Conditions

This section provides a regional overview of the project area and describes the existing visual character and quality of the individual project sites and their surroundings.

2.1.1.1 Regional Overview

The Proposed Project area is situated in southeastern San Diego County, approximately 50 miles east of downtown San Diego, and lies within a transitional region between the California Peninsular Ranges physiographic province (to the west) and the westernmost reach of the Colorado Desert (to the east). The California Peninsular Ranges are a group of northwest-trending mountain ranges stretching from Southern California to the southern tip of the Baja Peninsula. The Laguna Mountains (in the United States) and the Sierra Juarez mountains (in Mexico) are visually prominent along the western and eastern extent of the project area with elevations ranging from 3,000 to 6,000 feet above mean sea level (amsl). Further, these regional mountain ranges are characterized by steep mountain slopes, elevation-dependent vegetation communities, and contrasting granitic boulders. The desert region lies to the east and south of the project area and elevations range from sea level to over 3,000 feet amsl. Prominent landforms of the desert region include mountain ranges, mesa tops, alluvial fans, and desert floor. Desert vegetation is characterized as mixed wood scrub, with the dominant species being creosotebush which typically varies in height from 3 to 6 feet.

Located primarily within valleys, the Proposed Project area is flanked by the In-Ko-Pah Mountains to the east and the Tecate Divide to the west. The Jacumba Mountains (located east of the In-Koh-Pah Mountains) and the Sierra Juarez mountains are located further to the east and outside of the immediate area and the community of Boulevard. Separating local mountains and prominent topography are broad desert plains, alluvial fans, and valleys, including McCain Valley and Jewel Valley. Characterized by chaparral and granitic boulder-strewn hills, McCain Valley is located north of Interstate 8 (I-8) and is sparsely populated (residences are generally located off of McCain Valley Road and Ribbonwood Road). Tule Creek, an intermittent waterway following a west–northwest to southeast flow direction, bisects McCain Valley and introduces riparian plants and vegetation communities to the area. Privately owned lands as well as public lands managed by the Bureau of Land Management (BLM) for recreation and conservation purposes are located in McCain Valley. Located south of I-8 and named for its gemstone mining history, Jewel Valley is also characterized by chaparral-covered hills, exposed granitic boulders, and sparsely populated lands. A network of unimproved dirt access roads crisscrosses the valley and provides private access to residences and ranches off of the major route through the area, Jewel Valley Road.

The community of Boulevard (located north of Jewell Valley and south of McCain Valley) contains scattered rural residential development intermixed amongst natural vegetation, prominent oak trees (and several pine trees) lining Old Highway 80, rising topography to the south, and a small commercial corridor along Old Highway 80. Although the Boulevard community has been known as a rural area that primarily consists of single-family homes scattered among the mountainous landscape, recent developments have resulted in a variable

physical and visual setting that includes both rural elements and major energy and transportation infrastructure. As depicted in Figure 1-4, Project Environmental Setting – South of I-8, and Figures 1-5a and 1-5b, Project Environmental Setting – North of I-8, prominent components that contribute to the visual setting include large-scale energy infrastructure associated with the Southwest Powerlink and Sunrise Powerlink, which both consist of 500-kilovolt (kV) electric transmission lines supported by 150-foot-tall steel lattice structures, as well as several large metallic communication towers located at the White Star Communication Facility, the 60-foot-wide dirt public reserve, and the linear rust colored U.S.–Mexico international border fence (located immediately south of the Tierra del Sol site). In addition, the 25-turbine Kumeyaay Wind Farm is located atop the Tecate Divide (west of McCain Valley) and due to their prominent location, the stark white turbine towers and rotating blades are visible throughout much of the viewshed. The four travel lanes and shoulders comprising I-8 traverse the Proposed Project area in a general east–west alignment, and this transportation corridor contributes to the regional visual environment.

Also located within the community of Boulevard are components of the San Diego Gas and Electric (SDG&E) East County (ECO) Substation project including an approximate 2-mile segment of the 13.3-mile 138 kV transmission line and the Rebuilt 138/69/12 kV Boulevard Substation and the 67-turbine Tule Wind project. The majority of the Tule Wind project is located north of the Boulevard rural village boundary on public lands managed by the BLM. Based on current project information and schedule, the ECO Substation 138 kV transmission line, the Rebuilt Boulevard Substation, and Tule Wind project, including the Tule gen-tie, are anticipated to be fully constructed before any portion of the Proposed Project commences operation. Accordingly, these projects are included in the baseline, along with existing physical conditions. Tule Wind LLC has filed a request with the BLM to extend the deadline to obtain a NTP for two years, and proposed a new construction schedule that would start construction on the Tule Wind Project after January 1, 2017, instead of prior to December 31, 2014 (Tule Wind LLC 2014). ~~If Tule's request is granted~~On December 18, 2014, the BLM approved an amendment to Tule Wind LLC's Right of Way (ROW) granting Tule Wind LLC a one-year extension on the deadline for submitting a NTP. The amended ROW requires Tule Wind LLC to obtain a NTP from BLM by December 31, 2015, and construction must begin within 90 days of issuance of the NTP, or by March 31, 2016. Accordingly, then the Tule Wind project may be completed after the Rugged solar farm and Tierra del Sol Solar project become operational.

2.1.1.2 Tierra del Sol

The Tierra del Sol solar farm site consists of elevated, adjoining parcels that create a generally rectangular land parcel that slopes from east to west from a central north–south trending ridge. On-site vegetation is comprised of several chaparral communities (i.e., chamise red shank, and

granitic northern mixed chaparral), flat-topped buckwheat and big sagebrush scrub. Dominant plant species include chamise (*Adenostoma fasciculatum)*, sugar sumac *(Rhus ovata*), manzanita (*Arctostaphylos* sp.), redshank (*Adenostoma sparsifolium)*, and California buckwheat (*Eriogonum fasciculatum)* (Appendix 2.4-1). The majority of on-site vegetation varies in height from 1 to 6 feet; however, several tall and prominent Tecate cypress (*Cupressus forbesii*) trees are located near the southern boundary. A cluster of tall pine trees (*Pinus* sp.*)* are located near the central north–south trending ridge, and small groupings of scrub oak (*Quercus berberidifolia*) are located on the western portion of the site (Appendix 2.4-1). In general, vegetation exhibits a coarse and scattered texture. Due to the site's topography and off-site topography to the the north and east, and the presence of the international border fence to the south, off-site views to the site are primarily from the northeast to the west.

Visible development in the landscape disrupting the continuity of vegetation across the Tierra del Sol solar farm site includes four Southwest Powerlink transmission structures. The vertical lines and large, geometric form of Southwest Powerlink transmission structures create breaks in the natural visual landscape while also contributing bold, prominent geometric forms to the local viewshed (the visibility of these features is less pronounced when the structures do not break the horizon line).

In the surrounding area, scattered rural residential development ~~within the community of~~in Tierra del Sol and south of the U.S./Mexico border in the community of Ejido Jardines Del Rincon comprises a portion of the landscape. North of the border, ~~M~~many residences within the immediate area are accessible via private roads off of Tierra del Sol Road which borders the project site to the north and west. South of the border, the community of Ejido Jardines Del Rincon is organized in a grid-like pattern and residences are accessible via a network of unimproved dirt roads. A centrally located north-south dirt road runs through the community and provides connectivity to Federal Highway 2 located to the south. To the west of the solar farm site, residential development is ~~similarly~~ patchy and transitions to nearly non-existent beyond the paved terminus of Tierra del Sol Road which denotes the eastern edge of the Campo Indian Reservation (located approximately 2 miles west of the project site). The defunct San Diego and Arizona Eastern Railroad runs through the community of Tierra del Sol and the railway right-of-way (ROW) is currently used as an informal east–west community trail (San Diego and Arizona Eastern Railway Trail) (County of San Diego 2005). Several other informal trails are also located in the Tierra del Sol area. As noted previously, the topography of the local area rises to the north, east, and west from which views of the site are available (see Figure 2.1-1, Project Viewshed Map). The topography to the south falls and nearby residents in Mexico are afforded direct and unimpeded views of the solar farm site. Old Highway 80, State Route 94 (SR-94), and I-8 occupy similar elevations as compared to the Tierra del Sol site, however, views of the Tierra del Sol site from these facilities are blocked by intervening topography and vegetation.

Lands traversed by the Tierra del Sol gen-tie alignment include undulating ridgelines covered with chaparral vegetation and granitic, lightly colored rock outcrops and rolling terrain featuring dense clusters of chaparral vegetation interspersed by clumps of lightly colored exposed soils, dirt access roads and sparse rural residential development. The gen-tie would be installed underground along Tierra del Sol Road north of the site and would turn east prior to reaching the railroad bed. Approximately 1,600 feet east of Tierra del Sol Road the gen-tie lines would exit the ground and be installed on transmission towers trending north and east to a ridge north of Rattlesnake Mountain (see Figures 1-7c and 1-7d). Heading mainly north, the gen-tie line would descend into Jewel Valley from higher elevation terrain and the alignment would traverse chaparral and boulder covered hills flanking the western extent of the valley landscape. Approximately 365 feet west of Jewel Valley Road, after traversing an area associated with agricultural uses and displaying random groupings of large oak trees, the gen-tie lines would transition back to an underground duct bank. Between the duct bank and the Rebuilt Boulevard Substation, the Tierra del Sol gen-tie line would be installed underground (see Figures 1-7a, 1-7b, and 1-7c).

Between the Tierra del Sol site and the Tierra del Sol gen-tie interconnection point at the Rebuilt Boulevard Substation, vegetation coverage across private lands is relatively dense; however, natural features including rock outcrops and oak scattered valleys as well as man-made features including roads, residential development, and agricultural lands interrupt the relatively continuous visual pattern created by wide and long expanses of chaparral vegetation. In addition, along public roadways, changes in form, line, and color in the landscape are evident as the transition between wide, flat valleys, rolling hills, and prominent boulder covered ridgelines is relatively abrupt. The regional energy infrastructure visible from the Tierra del Sol site and Tierra del Sol Road consists of tall forms with bold lines that are present in southern-oriented views. Local energy and communication infrastructure located north of the site and adjacent to Tierra del Sol Road is generally supported by wooden poles displaying a rural scale and character. In the Jewel Valley areas, dirt roads, wood and wire fencing, scattered residential development and barn facilities, and wide areas cleared for pasturelands or other agricultural uses contribute to the visual environment. In addition, the tall slender form of local communication, electrical infrastructure, and meteorological towers dot the landscape visible from Jewel Valley Road and contribute bold lines to the existing visual environment. Lastly, near the Tierra del Sol gen-tie interconnection at the Rebuilt Boulevard Substation, rural residential development becomes increasingly consistent in the landscape, and the complex form and angular lines of the substation itself contrast with the horizontal lines of residential homes as well as with the pattern elements of surrounding terrain and vegetation.

The Tierra del Sol gen-tie line would traverse approximately 15 parcels owned by 10 different property owners. It should be noted that not all parcels traversed by the Tierra del Sol gen-tie line contain a residence. There are approximately seven residences on properties abutting Tierra del Sol Road (the underground Tierra del Sol gen-tie line would be installed in the ROW adjacent to

the roadway), and access to these residences is provided off of Tierra del Sol Road. Residences are also located near the Rebuilt Boulevard Substation and Old Highway 80 at the northern terminus of the Tierra del Sol gen-tie line. The aerial segment of the Tierra del Sol gen-tie line would traverse the San Diego and Arizona Eastern Railroad, the ridge north of Rattlesnake Mountain, and unnamed dirt access roads on private property. The underground segment of the gen-tie line would go under Jewel Valley Road, unnamed dirt access roads, and Tule Jim Lane.

Visual Character

The existing visual character of the Tierra del Sol site is rural with some major utility elements as previously described. More specifically, the Tierra del Sol, Jewel Valley, and Boulevard area landscape consists of widely dispersed rural residences on large lots routinely located next to undeveloped, gently rolling terrain featuring varying densities of vegetative coverage. Residential structures are generally modest and are typically surrounded by the rectangular form of cleared lands used for ranching and other rural activities. The topography of the area is variable and includes broad ridges, shallow valleys dotted with oak trees and traversed by dry creek beds, and gently sloping chaparral-covered terrain. Mobility in the area is achieved by use of several north–south roadways including Tierra del Sol Road and Jewel Valley Road, and by use of SR-94 and Old Highway 80, the main east–west thoroughfares in southeastern San Diego County. In addition to rural residences, wood and wire fencing delineating property boundaries is commonplace in the landscape as is local electrical and communication infrastructure. Regional electrical infrastructure and the international border fence traverse the southern extent of the surrounding area landscape and contribute contrasting forms, lines, and colors to the Tierra del Sol visual setting. Several meteorological towers have also been installed in the surrounding area and while these features encompass tall forms and smooth textures, the towers are temporary and have a relatively thin profile and a scattered disposition in the landscape (towers tend to not be clumped in one location).

Viewer Groups

Residential Groups

Approximately seven residences are located on parcels north of Tierra del Sol Road and the Tierra del Sol site and five residences are located on parcels adjacent to the western boundary of the Tierra del Sol site. Residences to the south in Mexico are located as close as 200 feet to the solar farm site. More distant residences are located in the viewshed of the site and have varying levels of the visibility to the project site due to intervening topography and vegetation. Building orientation also factors in determining the visibility of the Tierra del Sol site from private parcels located west of the solar farm site. Although views from private residences are not analyzed under the California Environmental Quality Act (CEQA), local residents experience views of the Tierra del Sol site from public viewpoints in close proximity to their

homes from the transition from private driveways to public streets. Therefore, residents are considered in the current analysis. In addition, residents make up the majority of motorists travelling on project area roads such as Tierra del Sol Road because these roads provide local access to residences as opposed to regional access (i.e., Old Highway 80 and SR-94) to the larger Mountain Empire Subregion and beyond. Motorists—i.e., mobile viewers—a-re further analyzed and discussed below.

In vicinity of the Tierra del Sol gen-tie alignment, residences are generally concentrated near Tierra del Sol Road, along Jewel Valley Road near the transition pole (approximately 10 residences are located in the general area), and near the proposed interconnect at the Rebuilt Boulevard Substation. In addition to those residences located on parcels adjacent to the Tierra del Sol gen-tie alignment, the vertical profile and prominent location of gen-tie structures would result in a relatively wide and expansive viewshed encompassing numerous residences in the Tierra del Sol and Jewel Valley areas. The majority of residences in these areas are located off Tierra del Sol Road and Jewel Valley Road.

Recreational Groups

There are no recreational areas located within the viewshed of the Tierra del Sol solar farm. The site would be visible from several trails associated with the Boulevard Community Trails and Pathways Plan including the Shockey Truck, Lansing, Tierra del Sol, and San Diego and Arizona Eastern Railway trails; however, these trails are existing unimproved access roads (or are located along roadway ROWs) that primarily traverse private lands. Therefore, as no public ROW has been established to–date, and easements have not been acquired, these trails are not considered established recreational facilities, and they are not further discussed in this analysis.

Motorists (Mobile Groups)

The presence of Tierra del Sol Road in the viewshed suggests that mobile viewers (i.e., motorists) should be considered in the discussion of viewer groups in the Tierra del Sol area. However, motorists on this roadway are anticipated to be comprised of residents in the immediate area because (as discussed above) Tierra del Sol Road is not a regional transportation corridor like SR-94 and Old Highway 80 (both of which are located too distant for motorists to view the solar farm site). Rather, Tierra del Sol Road provides local access through the community of Tierra del Sol, and numerous private access roads leading to residences are constructed off the roadway. Therefore, for the purposes of this study, motorists (mobile groups) are assumed to be generally comprised of the same individuals considered in the residential groups.

Transportation corridors located in the viewshed of the Tierra del Sol gen-tie line include both local and regional roads and highways. Motorists on local north–south roadways (i.e., Tierra del

Sol Road and Jewel Valley Road) would be afforded brief, passing views of the Tierra del Sol gen-tie line and support structures, as would motorists on the short segment of SR-94 generally between Tierra del Sol Road and Old Highway 80. SR-94 is an eligible state scenic highway and is included in the County's Scenic Highway System which identifies transportation facilities along corridors with "considerable natural or otherwise scenic landscapes" (County of San Diego 2011a). Lastly, small dirt roads traversing the Tierra del Sol and Jewel Valley landscape are also included in the viewshed of the Tierra del Sol gen-tie line, and motorists on these roads would be afforded brief views of the Tierra del Sol gen-tie line.

Viewer Sensitivity

The Tierra del Sol solar farm has been presented to the local community planning group and is subject to the policies of the Boulevard Subregional Plan. Concerns include project-generated glare and potential impacts on the existing views of surrounding residents and airplane pilots and the removal of "backcountry habitat" and vegetation from the site and replacement with a solar farm facility. Some community members have also expressed a preference for rooftop and parking lot solar energy installations as opposed to large-scale solar farm facilities. In addition to concerns expressed by local residents, County policies included in local and regional planning documents (i.e., the Mountain Empire Subregional Plan, the Boulevard Subregional Plan, and the County of San Diego General Plan Conservation and Open Space Element) generally support the protection of existing visual resources. Therefore, visual sensitivity in the surrounding communities of Tierra del Sol, Jewel Valley, and Boulevard is assessed as being high.

Viewer Exposure

The seven residences located north of the Tierra del Sol site ~~would be~~are afforded direct, unobscured, and long-term (i.e., permanent) views of the site. Due to the topography of the site, residences located to the west ~~would be~~are afforded direct views of the west side of the Tierra del Sol solar farm; however, it is anticipated that views of the east side of the proposed facility would be obscured by intervening topography comprised of the north–south trending ridge traversing the western portion of the site. Residences located south of the site in Mexico are afforded direct and unobscured foreground views of the solar farm site. Residents located elsewhere in the viewshed ~~would be~~are afforded distant yet relatively unobscured (depending on the presence of vegetation and topography) views of the site at a middleground viewing distance.

Table 2.1-1 summaries the view duration for motorists of foreground and middle-ground views of the Tierra del Sol site that are available from selected key views/public viewing areas. All of the Key Views for the Tierra del Sol solar farm (see Figure 2.1-2, Key View Location Map) fall within these view durations and viewing distances.

The viewer experience from selected Key Views is characterized by view zones (view distance).

As shown in Table 2.1-1, Key Views 2 and 3 are in the foreground view zone. The entire length of Tierra del Sol Road between these two key view points and extending 0.25 mile outward to the foreground/middleground boundary can be considered as a single experience. When considering the dynamic experience of the viewer, the entire length of this road represents a single viewing experience no matter the travel direction. Key Views 1 and 4 are located in the middle-ground view zone and represent distinctly separate experiences, but afford continuous views of the Tierra del Sol solar farm. For motorists within the viewshed driving southbound on Tierra del Sol Road, middle-ground (extending from Key View 4 to 2 miles from the site) and background views (> 2 miles from the site) are intermittent and fleeting (< 10 seconds) due to topography and existing vegetation that screen potential views of the site for most of the distance between SR-94 and Key View 4.

The western terminus of Tierra del Sol Road is located approximately 1 mile west of the site. With the exception of SR-94 and Old Highway 80 which are located north of the site and outside of the site's viewshed, Tierra del Sol Road does not provide connectivity to other roads in the area which would facilitate regional movement or use, and therefore, mobile viewers on the roadway are anticipated to reside in the immediate area. As such and as discussed previously, the exposure of mobile viewers would be similar to that of residential viewers.

Tierra del Sol Gen-Tie Line

While numerous small roadways are included in the viewshed of the Tierra del Sol gen-tie line, larger roads receive greater and more consistent traffic volumes, and therefore, the visual experience/exposure of the Tierra del Sol gen-tie line to motorists on Tierra del Sol Road and Jewel Valley Road is discussed below.

East/northbound motorists on Tierra del Sol Road would be located within the Tierra del Sol gen-tie line viewshed from the highpoint of the north–south trending ridge that traverses the western portion of the site and the roadway, to the San Diego and Arizona Eastern railroad crossing. The traveling distance between these points in the landscape is 1.2 miles along Tierra del Sol Road, and assuming a travel speed of 35 miles per hour (mph), motorists would be afforded middle-ground to foreground views of the Tierra del Sol gen-tie line for approximately 2 minutes. For southbound Tierra del Sol motorists, the topography of the surrounding landscape is variable, and intervening vegetation creates discontinuous segments of the roadway from which the Tierra del Sol gen-tie line would be visible. According to the viewshed analysis, approximately 1.93 miles of the southbound travel lane of Tierra del Sol Road would be located in the viewshed of the Tierra del Sol gen-tie, and southbound motorists would be afforded foreground to middle-ground distance views of the site for approximately 3.3 minutes. An approximate 0.80-mile linear segment of the roadway through the community near Tierra Real Road is not included in the view duration approximation as the views along this segment are enclosed by surrounding vegetation.

Viewer Exposure

A summary of viewer exposure from local public roadways in the Tierra del Sol gen-tie viewshed is provided in Table 2.1-2.

Viewer Awareness

Due to the permanent nature of views, the existing natural state of the site, and the familiarity with the local area landscape, residents and local area motorists in the immediate area are anticipated to be highly aware of changes occurring in the existing landscape setting. Therefore, viewer awareness is anticipated to be high based on the characteristics of the surrounding rural environment and the expressed concerns of the community.

2.1.1.3 Rugged

Situated within the shallow valleys and amid the chaparral-covered hills dotted with exposed granitic boulders that comprise the McCain Valley, the Rugged site consists of relatively flat to gently sloping land featuring a diverse assemblage of vegetation communities including chaparral, sagebrush and willow scrub, wildflower fields, oak woodlands, non-native vegetation, and alkali and freshwater seeps. Plant species associated with on-site upland scrub and chaparral communities include big sagebrush (*Artemisia tridentata* ssp. *tridentata*), chamise, mission manzanita (*Xylococcus bicolor*), ceanothus (*Ceanothus* spp.), interior scrub oak (*Quercus berberidifolia*), red shank (*Adenostoma sparsifolium*), and manzanita (*Arctostaphylos* sp.) (see Appendix 2.3-2). Upland woodland and savannah, riparian herb, and riparian scrub communities are represented by coast live oak (*Quercus agrifolia* var. *oxyadenia*), Mexican rush (*Juncus mexicanus*), salt grass (*Distichlis spicata*), mulefat (*Baccharis salicifolia*) and others, respectively (see Appendix 2.3-2). The assortment of vegetation type expresses both tall, upright and short, spreading forms with colors ranging from dark to light green during the wet season and transition to dull hues of yellow and brown during the dry season. Textures are typically coarse and patchy and vegetation coverage varies (the Rugged site does not exhibit vegetation continuity due to the large number of cover types within the area). Views from the site are generally panoramic with the Laguna, In-Ko-Pah, and Jacumba mountains visible in the distance to the west, north, and east, respectively.

The Rugged site is located on relatively flat to gently sloping land, and the viewshed is enclosed by higher ridgeline elevations to the west, north, east, and south (see Figure 4, Project Viewshed Analysis/Landscape Character Units, of Appendix 2.1-2, Rugged Solar LLC Project Visual Resources Technical Study). The viewshed encompasses a relatively wide swath of land comprising the shallow bottom of McCain Valley and extends up to the surrounding ridgelines of the Tecate Divide and the In-Ko-Pah Mountains (see Figure 2.1-1, Project Viewsheds).

Visible development in the area disrupting the continuity of the natural landscape includes access roads traversing the site, fencing delineating private property, rural residences, ranching and grazing activities, the new U.S. Customs and Border Protection station located north of I-8 and accessible off of Ribbonwood Road, large steel lattice towers associated with the 500 kV Sunrise Powerlink and dispersed meteorological towers. Rural residences are generally located west and southwest of the Rugged site with access available from Ribbonwood Road and McCain Valley Road. Regional transportation infrastructure (I-8) and renewable energy development (wind turbines atop Tecate Divide and associated with the Kumeyaay Wind Farm on the Campo Native American reservation) are also visible from the Rugged site.

The 500 kV Sunrise Powerlink and the 50-megawatt (MW) Kumeyaay Wind Farm are visible to area residents and motorists and would be visible from the Rugged site. Traversing McCain Valley south to north on the east side of McCain Valley Road, the Sunrise Powerlink consists of tall, 500 kV lattice towers with three sets of transmission lines and insulators attached. Each tower is connected to the next by a graded access road, and a cleared area around each tower base is provided for fire management. The silver-colored steel lattice towers present a commanding presence to I-8 motorists. Approaching the McCain Valley Road overpass from the west and the east, steel lattice towers flank the freeway and multiple transmission lines cross overhead. Located on the Campo Native American reservation, the 50 MW Kumeyaay Wind Farm consists of 25 wind turbines situated on the western rim of McCain Valley and approximately 2.25 miles northwest of the Rugged site. Each turbine is approximately 400 feet tall measured from the ground surface to the tip of the blade, and their white color generally contrasts with brown and yellow hues of background mountains and the blue sky. Foreground, middle- and background views of these structures can be seen from the eastbound and westbound lanes of I-8, and background views can be seen from locations in the McCain Valley. Westbound motorists experience unobstructed views of the turbine structures for 1.7 minutes at distances from 1.9 miles to 0.1 mile. Similarly, eastbound traffic can view the turbines for 2.2 minutes at distances from 2.4 miles to 0.12 mile. The circular motion of the blades contrasts with the otherwise stationary landscape in which travelers move.

The community of Boulevard is located south of the Rugged site. Boulevard is primarily comprised of modest single-family residences on large lots, expansive natural and undeveloped areas, and a small commercial corridor along Old Highway 80. Electrical transmission and generation structures/facilities (i.e., the 500 kV Southwest Powerlink and the existing SDG&E Boulevard Substation) are also located in the Boulevard Subregional Plan area and contribute typical electrical infrastructure features to the existing visual environment. Lastly, the existing U.S. Customs and Border Protection Boulevard Station (located south of and adjacent to I-8 at Ribbonwood Road) and the new expanded station (partially constructed adjacent to Ribbonwood Road and north of I-8) are also visible in the landscape and contribute to the visual environment.

Visual Character

The Rugged site is undeveloped land located in the McCain Valley, which is characterized by chaparral hills dotted with light-colored and contrasting granitic boulders. The McCain Valley is bounded by the Laguna Mountains to the west, the In-Ko-Pah and Jacumba mountains to the north and east, and low hills to the south. The topography of these mountain ranges and nearby hills generally encloses the landscape and provides definition to the overall viewshed of the Rugged site. The southern portion of the McCain Valley is characterized by gentle slopes, open pasture lands, clustered oaks and shrubs, and granite boulders and rock outcrops. The patchwork of native and non-native vegetative cover and rocky, granite boulders and outcrops gives the majority of the landscape a vibrant green (pastures) to dull grey-green and tan/light grey color palette. Where visible, the more densely vegetated mountains are characterized by a more muted grey-green color compared to the valley. The landscape texture ranges from smooth pastures areas, to coarse clumped vegetation, boulders/rock outcrops. The east–southeast horizon of the viewshed is characterized by more jagged and pyramidal forms compared to the north and west, which are dominated by domed hills that are occasionally dotted with interesting rock outcrops. The overall visual environment should be thought of as a mosaic, or composite of several smaller portions of the viewshed (known as landscape units) that exhibit distinct visual character.

Viewer Groups

Land uses surrounding the Rugged site support a mixture of public and private lands, agricultural uses, rural uses, energy and infrastructure, and streets and roadways. These land uses yield the following viewer groups: motorists, recreationists, and residents. More specifically, I-8 (located south of the Rugged site) provides motorists with intermittent and partially obstructed views of the site. McCain Valley Road also provides local access for recreationists to BLM-managed lands, including the McCain Valley National Cooperative Land and Wildlife Management Area located north of the Rugged site, and draws hikers, sightseers, off-highway vehicle (OHV) users, and other recreational visitors and provides recreationists with foreground views of the site. Finally, private residential viewer groups scattered throughout the vicinity have open to partially obstructed foreground to middle-ground views of the Rugged site.

Residential Groups

Private residences in the immediate vicinity are generally located west and southwest of the Rugged site and would be afforded unobstructed views of the Rugged site. Although views from private residences are not analyzed under CEQA, local residents experience views of the site from public viewpoints in close proximity to their homes from the transition from private driveways to public streets. Therefore, residents are considered in the current analysis. Most residences are accessed via private roads that connect to a public ROW at McCain Valley Road and Ribbonwood Road. In addition, more distant residences are located in the viewshed and have

varying levels of the visibility to the site (topography, vegetation, and orientation factor in determining the visibility of the site from near and distant residential viewing locations).

Recreational Groups

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

Motorists (Mobile Groups)

The presence of local public roadways including McCain Valley Road and regional routes such as I-8 in the area viewshed suggests that mobile viewers (i.e., motorists) should be considered in the discussion of viewer groups. Motorists on McCain Valley Road with views of the Rugged site are anticipated to be comprised of recreationists because this road is the primary access route into the McCain Valley Cooperative Land and Wildlife Management Area and the Lark Canyon OHV area. Local residences are located off McCain Valley Road between I-8 and the McCain Valley Conservation Camp. These viewers are not anticipated to drive north of the conservation camp where Rugged site visibility begins on McCain Valley Road. Motorists on I-8 are comprised of residents, recreationists, and people passing through the region.

Viewer Sensitivity

Similar to the concerns expressed regarding the Tierra del Sol solar farm (see Section 2.1.3.3, above), concerns of residents in the area surrounding the Rugged solar farm are anticipated to include glare and degradation of existing views due to the removal of vegetation from the site, grading of the natural terrain, and construction and operation of a solar farm facility. Further, County policies included in local planning documents support the preservation of existing visual resources in the Mountain Empire Subregion and the Boulevard Subregional Plan area. Therefore, the visual sensitivity of rural residences located north of I-8 and east and south of the Rugged solar farm site is assessed as high.

As noted previously, motorists typically have a low sensitivity to visual changes in the environment because of the angle of observation, duration of view, previous visual experience,

and focus on the roadway. However, motorists on interstate highways and local roads are expected to have varying levels of sensitivity based on the purpose of travel. For example, McCain Valley Road provides access to the McCain Valley Cooperative Land and Wildlife Management Area that may attract visitors seeking scenic viewing opportunities with moderate sensitivity to visual change. The same road is used by off-road recreationists (for access to the Lark Canyon OHV area), who are considered to have a low sensitivity to visual change. Therefore, viewer sensitivity can be variable along the same travel routes.

The presence of prominent, skylined 150-foot-tall steel lattice structures associated with the 500 kV Sunrise Powerlink project and located adjacent to McCain Valley Road may, to a degree, desensitize viewers and lower the visual expectations of motorists along McCain Valley Road and I-8. Similarly, long duration views of the Kumeyaay Wind Farm and views of other planned renewable energy projects in the area such as the ECO Substation, the 138 kV ECO transmission line, the Rebuilt Boulevard Substation, and the Tule Wind project, from local roads and I-8, may have a future effect on viewer perception of changes in the landscape.

Viewer Exposure

Viewer exposure is typically assessed by gauging the number of viewers exposed to the visual change, the type of viewer group activity, the duration of view, the angle of view, the speed at which the viewer moves, and the position of the viewer. For example, although a greater volume of motorists travel along I-8 than on local area roadways such as McCain Valley Road, motorists on the interstate are afforded intermittent, brief, partially obstructed, and distant views of the Rugged site. And while a smaller volume of motorists travel on local area roadways, view exposure would slightly greater due to reduced speeds (increased view duration) and closer proximity. Given the concepts discussed earlier, it is anticipated that the largest proportion of daily viewers of the Rugged site would be exposed for the shortest duration based on their vantage point from and travel speed along I-8. In addition, intervening topography (i.e., road cuts, mounds, natural ridgeline, etc.) also reduce the availability of long-duration views and viewer exposure along I-8.

View duration for eastbound motorists on I-8 is limited to three windows that provide views of the project site for 3.5, 4, and 8 seconds based on a posted travel speed of 70 mph (aggregate viewing duration for eastbound motorists would be approximately 15.5 seconds). View duration is limited by intervening terrain (i.e., roadcuts) present along I-8 as the interstate descends from the Tecate Divide into the Boulevard area. Views to the Rugged site are experienced at a distance from the nearest tracker at 1.1 miles, 0.95 mile, and 1.4 miles, respectively. Westbound traffic will be exposed to the southernmost extension of the project on two view windows lasting 18 and 43 seconds at a distance of 0.6 mile and 0.8 to 1.1

miles, respectively (aggregate viewing duration for westbound motorists would be approximately 61 seconds).

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

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

Viewing distances from surrounding residences to the Rugged site range from 0.15 to 0.30 mile. These viewers are included in the group of motorists in determining impacts.

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

Lastly, as shown on Figure 2.1-1, the viewshed of the Rugged solar farm may extend to higher elevation areas and select roadways located south of I-8. These areas would include undeveloped and sparsely developed rural residential land along the Tecate Divide, rising, north-facing slopes of lands located immediately south of Old Highway 80 in the community of Boulevard, elevated and undeveloped boulder-strewn terrain generally located east of McCain Valley Road in the Bankhead Springs area, and segments of Old Highway 80 located east of Ribbonwood Road. Although views of the Rugged solar farm may extend to select areas south of the interstate, lands included in the viewshed tend to be sparsely developed and instead consist of natural, undeveloped terrain. Further, where views would extend to areas of rural residential

development, the presence of vegetation and structures may partially screen the solar farm facility from view. While the viewshed map suggests that views of the solar farm facility would not be visible from SR-94, motorists may be afforded views of the facility along a segment Old Highway 80 located east of Ribbonwood Road. However, as previously stated, the viewshed map does not consider view blockage associated with vegetation and due to the presence of tall, mature oak trees located immediately north of Old Highway 80 between approximately Ross Avenue and Ribbonwood Road, the solar farm facility would effectively be screened from view along this segment of the highway.

A summary of viewer exposure from I-8, McCain Valley Road, and Ribbonwood Road is provided in Table 2.1-3.

Viewer Awareness

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

Residences located east and south of the Rugged site would be afforded long-term, permanent views of the solar farm facility. East of Ribbonwood Road, residences are located as close as approximately 400 feet from the solar facility boundary and would therefore be highly aware of permanent changes to the existing landscape. In regards to the viewer exposure and potential effects to motorists, interstate motorists generally travel at high speeds, and motorists tend to be occupied with navigating the roadway and responding to the movement of surrounding traffic as opposed to focusing on natural or man-made elements in the surrounding landscape. As such, interstate motorists are considered to have a moderate awareness of landscape in which they are driving in. Motorists on local roads have moderate to high awareness of the landscape in which they are driving due to slower travel speed, longer view duration, and often foreground views of the Rugged site. Motorcycle riders on OHV trails have low awareness of their surroundings while navigating narrow sinuous trails through the landscape. The awareness of these riders increases to a moderate level when riders are stationary at viewpoints located north of the Rugged site. However, these stationary periods are likely to be of short duration before trail riding is resumed.

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

2.1.1.4 LanEast and LanWest

The LanEast and LanWest solar farm sites consist of relatively flat to gently sloping land currently used for intensive grazing. Vegetation communities and land cover located on site include (but are not limited to) semi-desert chaparral, granitic chamise chaparral, red shank chaparral, wildflower fields, big sagebrush scrub, southern willow scrub (disturbed), coast live oak woodland (disturbed), non-vegetated channel, and disturbed habitat (see Appendices 2.3-3 and 2.3-4). Slight variations within specific community types exist and portions of the project site have been grazed extensively (see Appendix 2.3-3). Shrubs and trees associated with on-site vegetation communities exhibit diverse forms; low grasses, short, spreading shrubs and tall, erect trees are represented on site with colors ranging from dark to light green and transitioning to more intense hues of yellow and brown during the dry season. On-site landscape textures range from smooth pastures areas to coarse, clumped shrub areas and boulders/rock outcrops.

Transportation and electrical infrastructure are present in the area and contribute to a general disruption of the continuous natural landscape. These modifications include dirt access roads and a low-voltage distribution line traversing the LanEast and LanWest sites, I-8 and Old Highway 80 to the north and south (respectively), existing post and wire fencing, an overhead telephone cable and wooden support poles adjacent to Old Highway 80, drainage ditches, and structural foundation remains. Lastly, the tall, vertical forms and smooth textures of steel lattice towers associated with the 500 kV Sunrise Powerlink are also visible from the LanEast and LanWest sites along the northeastern horizon defined in part by the southern extent of the In-Ko-Pah Mountains.

As measured from the intersection of Ribbonwood Road and SR-94/Old Highway 80, the unincorporated community of Boulevard is located approximately 1.4 and 1.2 miles west of the LanEast and LanWest sites, respectively. As mentioned previously in the context of the Rugged site, the visual environment of the Boulevard community is defined in large part by rural residential development on large lots, spacious natural and undeveloped areas, and a small, linear commercial corridor along Old Highway 80. Electrical infrastructure (low- and high-voltage transmission lines and a generation facility) also contribute to the local visual environment. Lastly, U.S. Customs and Border Protection has a relatively strong presence in the community. The current customs and border protection station is comprised of several single-story temporary buildings/trailers located south of Avenida de Robles Verdes and is visible from the eastbound lanes of I-8 and the Campo/Boulevard exit (exit 65). A new U.S. Customs and Border Protection station was recently constructed north of I-8 and along Ribbonwood Road and includes (among

other amenities) a modern main station building for 250 staff, a 160-foot communications tower, and an indoor firing range (Defense Video and Imagery Distribution System 2012).

Visual Character

The visual character of the LanEast and LanWest sites is considered natural and/or agricultural. The presence of transportation facilities (I-8 and Old Highway 80), low-voltage distribution lines, and telephone lines supported by wood poles in the vicinity of the LanEast and LanWest sites are common features in rural landscapes and are not generally viewed as distractions from local visual resources as these features are considered essential utilities for local residents.

Viewer Groups

In addition to local and regional transportation facilities, land uses surrounding the LanEast and LanWest sites support rural residential and agricultural (i.e., grazing) activity. Therefore, groups afforded views of the sites include motorists along I-8, Old Highway 80, and McCain Valley Road and residents in the Boulevard area, and limited use on public lands.

Recreational Groups

The BLM-managed Sacatone Overlook and other areas within the boundaries of the McCain Valley National Cooperative Land and Wildlife Management Area are located more than 2 miles to the north, and public viewing opportunities for hikers, sightseers, and off-highway vehicle users to the site are limited due to viewing distances and intervening topography. In addition, the Sunrise Powerlink located along McCain Valley Road and I-8 would be relatively constant components of the visual landscape and may result in reduced visual sensitivity. ~~Lastly, residential receptors scattered throughout the vicinity would have views of the LanEast and LanWest solar farm sites.~~

Residential Groups

The extent of the viewshed may be somewhat laterally limited due to the presence of local area topography to the west and southeast and on account of tall, mature oak trees. However, while boulder-strewn hills and the raised profile of I-8 (the interstate is constructed atop an elevated berm through the local project area) could limit the overall extent of off-site visibility to the LanEast and LanWest sites, the vertical profile of trackers and rising topography to the south and the north could effectively enlarge the viewshed and provide enhanced viewing opportunities of the LanEast and LanWest sites to these general areas.

The majority of residences within the viewshed would generally be located to the south of the sites and south of Old Highway 80 (private access is provided via Old Highway 80). A limited

number of residences to the north (approximately three) and east (one) may also be included within the viewshed and would be afforded views of the sites. Although views from private residences are not analyzed under CEQA, local residents experience views of the site from public viewpoints in close proximity to their homes from the transition from private driveways to public streets, primarily from Old Highway 80 and from McCain Valley Road. Therefore, residents are considered in the current analysis.

Motorists (Mobile Groups)

Old Highway 80 and I-8 run parallel along the southern and northern boundaries, respectively, of the sites, and provide motorists with unobstructed to partially screened views of the sites. McCain Valley Road bisects the LanEast site and is located approximately 0.40 mile east of the LanWest site. In addition east- and westbound I-8 motorists, Old Highway 80, and McCain Valley Road motorists would be afforded temporary, passing views of the LanEast and LanWest sites as they travel through the Boulevard area. Highway 80 and I-8 are considered County scenic highways.

Visual Sensitivity

As noted above in regards to visual sensitivity of the Rugged solar farm, the concerns of residents in the Boulevard area are anticipated to include new sources of glare and degradation of existing views and visual character of the LanEast and LanWest sites. Further, given the expressed concerns of residents for other renewable energy projects in southeastern San Diego County, the visual sensitivity of residents is anticipated to be high. While motorists generally have a low sensitivity to visual changes in the environment, motorists on interstate highways and local roads are expected to have varying levels of sensitivity based on the purpose of travel. For example, Old Highway 80 is the main surface road thoroughfare for residents in the area but it also receives sporadic use by non-local recreationists visiting BLM-managed public recreational lands in the McCain Valley. Therefore, viewer sensitivity can be variable along the same travel routes. Given the generally rural character of the LanEast and LanWest sites, the scenic designation of the roadways, concerns regarding visual impacts from the community, and because residents and motorists would be afforded foreground views of the solar farm development, visual sensitivity is assessed as high.

Viewer Exposure

Due to the long-term settlement patterns of residents (generally speaking), view exposure is assessed as long-term/permanent.

According to the viewshed map, views to the solar farm sites would not be available from the eastbound travel lanes of the interstate between the Tecate Divide and Ribbonwood Road. Views

of the solar farm sites would, however, be available to eastbound motorists along an approximate 1.4-mile segment of the interstate as measured from approximately 1 mile east of Ribbonwood Road to the eastern boundary of the LanEast site. Assuming a travel speed of 70 miles per hour, the solar farm sites would be within the viewshed of eastbound motorists for approximately 72 seconds but views may occasionally be interrupted by vegetation, terrain and rock outcrops located immediately south of the interstate. The viewshed map (Figure 2.1-1) indicates that views of the solar farms may be visible from the westbound travel lanes over an approximate 2.1-mile segment of the interstate as measured from the Rio Bend RV Resort billboard (located south of I-8) to the western boundary of the LanWest site. Assuming a travel speed of 70 miles per hour, the solar farm sites would be within the viewshed of westbound motorists for approximately 108 seconds. Further, from westbound travel lanes of I-8, the solar farms would be visible at an immediate foreground viewing distance from a superior viewing angle but would be occasionally screened by vegetation to the south and within the interstate median.

For eastbound Old Highway 80 motorists, the LanEast and LanWest sites would be located within the foreground viewing distance, and isolated gaps in visibility would occur due to the presence of tall, mature oak trees near Ross Avenue and Tule Jim Lane. Views of the sites from the westbound travel lanes of Old Highway 80 would generally be unobstructed. Views of the sites would also be available from the northbound and southbound travel lanes of McCain Valley Road.

Viewer Awareness

As stated above, residential groups are afforded long-term, permanent views of the LanEast and LanWest sites and would be sensitive to changes occurring within the existing landscape setting. Accordingly, the awareness of residents is considered high. View duration associated with I-8 motorists is anticipated to be somewhat limited due to high travel speeds and navigational focus on the roadway and traffic; however, views of the sites would be available from superior viewing angles and from a foreground viewing distance that would demand the attention of passing motorists. Therefore, visual awareness is assessed as high for interstate motorists. Lastly, motorists on local roads have high awareness of the landscape in which they are driving due to slower travel speed, longer view duration, and often foreground views.

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

2.1.2 Regulatory Setting

Federal Regulations

There are no federal regulations, plans, or standards related to aesthetics that are relevant to the Proposed Project.

State Regulations

The following state regulations pertaining to aesthetics would apply to the Proposed Project.

California Scenic Highway Program

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 a 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 2012a).

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, SR-94 and I-8 are eligible state scenic highways; however, neither has been officially designated by Caltrans (Caltrans 2012b).

California State Historic Routes

Old Highway 80 is a designated California State Historic Route. In 2006, the state legislature granted this designation in recognition of the highway's "outstanding natural, cultural, historic, and scenic qualities"; however, it also noted that the "designation does not influence the future

planning or development of adjacent public and private properties" (Assembly Concurrent Resolution (ACR) 123 (State of California Legislature 2006)).

Local Regulations

San Diego County General Plan

Updated and adopted in August 2011, the San Diego County General Plan guides future growth in the unincorporated areas of the County and considers projected growth anticipated to occur within various communities. The General Plan, through elements established to address the various issues accompanying planning and development, provides guidance for the protection of visual resources. Select policies within the Conservation and Open Space Element of the General Plan (County of San Diego 2011a) 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-12.2: Development Location on Ridges.** Require development to preserve the physical features by being located down and away from ridgelines so that structures are not silhouetted against the sky.
- **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 Boulevard Subregional Plan area boundary (each Proposed Project site would be located within the Boulevard Subregional Plan area boundary), I-8, SR-94, and Old Highway 80 are included within the County Scenic Highway System (County of San Diego 2011a).

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 comprise the Mountain Empire Subregion of southeastern San Diego County. The goals and policies of the Subregional Plan (County of San Diego 2011b) 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.
- **Policy and Recommendation 4:** The dark night sky is a significant resource for the Subregion and appropriate steps shall be taken to preserve it.
- **Policy and Recommendation 5:** Development shall not adversely affect the habitat of sensitive plant and wildlife species or those areas of significant scenic value.

Boulevard Subregional Plan Area

The Boulevard Subregional Plan area (County of San Diego 2011c) addresses issues and characteristics specific to the Boulevard Subregion which includes the communities of Boulevard, Manzanita, Live Oak Springs, Tierra del Sol, Crestwood, Jewel Valley, McCain Valley, Miller Valley, and a portion of Bankhead Springs (County of San Diego 2011c). Similar to the Mountain Empire Subregional Plan, the Boulevard Subregional Plan area is a supplement to the County General Plan, yet its goals and policies are intended to be more specific than those of the Mountain Empire Subregional Plan.

The following policies relate specifically to aesthetics and visual resources.

- **Policy LU 1.1.1:** Prohibit higher density, clustered subdivisions, or industrial-scale projects that induce growth and detract from or degrade the limited groundwater resources, water and air quality, visual and natural resources, abundant wildlife, and historic rural character of the Boulevard area. Renewable energy project, such as solar and wind projects, are not "industrial-scale projects or facilities" for purposes of this Community Plan.
- **Policy LU 1.1.2:** Encourage development to protect the quality and quantity of ground and surface water resources, air quality, dark skies, visual resources, and low ambient noise levels, as well as retain and protect the existing natural and historic features and characteristics of the community's landscape and natural environment.
- **Policy LU 1.1.4:** Require commercial and public development along scenic and historic routes to apply designs standards that will blend the development in with the terrain and rustic south western nature of the community character, while keeping outdoor lighting to an absolute and well shielded minimum.

- **Policy LU 1.3.2:** Require development, including regional infrastructure and public facilities, to comply and maintain a rural bulk and scale in accordance with Boulevard's community character. Renewable energy projects, such as wind and solar projects, are not "regional infrastructure or public facilities" for purposes of this policy.
- **Policy LU 3.1.1:** Encourage development to preserve dark skies with reduced lighting and increased shielding requirements.
- **Policy LU 3.1.2:** Encourage increased resources or methods for enforcement for the preservation of dark skies.
- **Policy LU 6.1.2:** Encourage commercial, industrial development, and large scale energy generation projects to create and maintain adequate buffers between residential areas and incompatible activities, which create heavy traffic, noise, infrasonic vibrations, lighting, odors, dust and unsightly views and impacts to groundwater quality and quantity.
- **Policy LU 6.1.3:** Encourage commercial, industrial development, and large scale energy generation projects to provide buffers from public roads, adjacent and surrounding properties and residences, recreational areas, and trails.

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, 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 Proposed Project include Scenic Area (S), Sections 5200–5212.

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

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

- Removal of existing vegetation shall be minimized;

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

County of San Diego Code of Regulatory Ordinances Sections 59.101–59.115, 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 2006).

While the Rugged solar farm is located in Zone A, the Tierra del Sol, LanEast, and LanWest solar farms are located in Zone B.

2.1.3 Analysis of Project Effects and Determination as to Significance

The Proposed Project consists of four renewable energy solar farms in southeastern San Diego County. The following impact analysis has been separated into discussions for each of the four solar farms: Tierra del Sol, Rugged, LanEast, and LanWest, as well as a combined discussion of the Proposed Project as a whole. For the purposes of this Program EIR, the Tierra del Sol and Rugged solar farms are analyzed at a project level, whereas the LanEast and LanWest solar farms are analyzed at a programmatic level as sufficient project-level data has not been developed at this time.

Methodology and Assumptions

Baseline information pertaining to regional aesthetics was obtained through a review of the *Final Environmental Impact Report (EIR)/Environmental Impact Statement (EIS) for the East County (ECO) Substation, Tule Wind, and Energia Sierra Juarez Gen-Tie Projects* (CPUC and BLM 2010). In addition, SDG&E's *Proponent's Environmental Assessment (PEA) for the East County*

(ECO) Substation Project (2009) and the County's General Plan Update Final EIR (2011) were reviewed to identify the existing visual resources in the area. For information pertaining to specific project sites, visual technical reports, as previously listed, were reviewed to better understand the existing site-specific visual environment and to inform the impact analysis included in Section 2.1.3. Additionally, the Boulevard Glare Study (provided as Appendix 2.1-3) was reviewed to determine the potential glare impacts associated with operation of the Proposed Project. The draft biological technical reports prepared for the project were reviewed in order to expand upon the discussion pertaining to the existing visual setting at each individual site.

The following discussion summarizes the methodology and assumptions pertaining to the analysis of visual character and quality, glare, and applicable policies and regulations.

Visual Character and Quality

For purposes of this analysis, aesthetic/visual resources are defined as the natural and man-made elements and features of the landscape that contribute to the visual character and quality of a setting. Influenced by geologic, hydrologic, botanical, and recreational features as well as by roads, structures, utilities, and other urban features, the perception of visual character can vary according to season and time of day as the atmospheric elements present in the viewshed (i.e., weather, light, and shadow) fluctuate over time and work to either obscure or highlight particular features. The fundamental pattern elements used to describe visual character are form (bulk, mass, size and shape), line, color, and texture and the appearance of a landscape is often described according to the dominance of these elements. Visual quality, on the other hand, is evaluated according to the vividness (visual power or memorability of landscape components), intactness (visual integrity of the natural and built landscape and its freedom from encroaching elements), and unity (visual coherence and compositional harmony of the landscape considered as a whole) present in the viewshed as modified by viewer response (a composite of viewer sensitivity and exposure) which predicts how affected viewers might react to changes in the visual environment. 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. Additional factors considered include the type of viewers (e.g., resident, motorist, etc.) potentially affected, viewing distances, and documented public concerns (including financial well-being and cultural/community values) associated with visual change.

As discussed previously in this document, visual sensitivity is informed by viewer exposure and the individual elements considered 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 versus 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). Lastly, viewer exposure also considers the duration of view based on viewer activity (e.g., travel route, residential, recreation) and often relates to modes of travel (pedestrian or vehicular) of nature of the view (mobile or stationary).

Key views of the Tierra del Sol solar farm, Tierra del Sol gen-tie line, and Rugged solar farm were selected that would typify the effects on visual resources as experienced by primary viewer groups in a dynamic experiential setting. Locations in the viewsheds from which views of the sites would be available were identified on aerial photography prior to the initial site visits. Once identified, candidate key view locations were field verified to confirm orientation and visibility to the sites. Initial locations were modified and/or new locations were established based on field conditions. Photos from each candidate key view location were taken, and the existing conditions including time of day, weather, vegetation, topography, visual character, quality, response, and exposure were noted and recorded. Key Views are identified and discussed further in Section 2.1.3. From these Key View locations, visual simulations were prepared and utilized computer aided design (CAD) information and geographic information systems (GIS) data for visual accuracy. The use of these tools allowed for life-size modeling within the three-dimensional (3D) computer model which translated to using real-world scale and coordinates to locate facilities, other site data, and digital camera locations corresponding to 3D photo simulation from the Key View locations. The simulations are daytime representations of full buildout of the Tierra del Sol solar farm, Tierra del Sol gen-tie, and Rugged solar farm. Construction-phase aesthetics impacts (including, but not limited to, visible dust, vehicles/materials/equipment, grading effects, and vegetation removal), glint and glare, and nighttime lighting are not represented in the simulations. Construction and decommissioning activities, as well as lighting and glare impacts are analyzed in Section 2.1-3.

Glare

Power Engineers prepared the Boulevard Glare Study to identify potential glare issues associated with operation of the proposed project. To identify potential receptors of glare, residences within 1 mile of the solar equipment at the proposed Tierra del Sol solar farm and the Rugged solar farm sites were identified. According to the Boulevard Glare Study, a distance of 1 mile is the threshold where glare from solar equipment is projected high enough above the terrain to avoid identified residences within the study area (i.e., at a distance of 1 mile, reflections are 370 feet above the solar equipment) (Appendix 2.1-3). 3D computer simulations were then developed to study glare based on the behavior of a two-axis tracker mounted module. Elements within the 3D simulations included a 3D terrain model, 3D solar equipment, and a 3D Sun system that was used to model lighting conditions and the variable angles of the trackers throughout the year. These elements were then assembled in a 3D computer program to create an accurate virtual

representation of the project. The 3D computer simulations also incorporated a precise solar algorithm based on the latitude and longitude of the sites, and all calculations pertaining to anticipated glare were performed using 3D software designed for calculating and animating solar cycles. Further, the spring and autumnal equinox and summer and winter solstice were analyzed (the Sun reaches its highest position in the sky at noon during the summer months and its lowest position in the sky at noon during the winter months) to establish seasonal trends and accurately predict the occurrence of glare throughout the year. More specifically, the following times of the year were analyzed:

- Spring Equinox (March 20, 2013): 12 hours 8 minutes of daylight, where the day and night are equal in length. Apparent sunrise at 6:49 a.m. and apparent sunset at 6:57 p.m.
- Summer Solstice (June 21, 2013): 14 hours 18 minutes of daylight, where the length of sunlight hours is at its peak, and the Sun has reached its northernmost extremes. Apparent sunrise at 5:38 a.m. and apparent sunset at 7:56 p.m.
- Autumnal Equinox (September 22, 2013): 12 hours 7 minutes of daylight, where the day and night are equal in length. Apparent sunrise at 6:34 a.m. and apparent sunset at 6:41 p.m.
- Winter Solstice (December 21, 2013): 10 hours of daylight, where the length of sunlight hours is at its lowest and the Sun has reached its southernmost extremes. Apparent sunrise at 6:44 a.m. and apparent sunset at 4:44 p.m.

Lastly, a 3D geometric analysis that took into account the position of the Sun in relation to the angle of the solar modules was used to characterize glare behavior and document where glare may be visible to off-site viewers. The 3D geometric analysis utilized project-specific CAD information for the Tierra del Sol and Rugged solar farms. Therefore, specific locations of CPV trackers on the Tierra del Sol and Rugged solar farm sites were used to determine the location and duration of glare exposure in the surrounding environment. Because project-level information has not yet been developed for the LanEast and LanWest solar farms and a site plan is not available, Power Engineers used general locations on the sites where CPV trackers may be constructed based on several factors including topography and presence/lack of sensitive biological resources. The ~~conceptual panel layout utilized by Power Engineers presents a worse-case scenario, and the~~ glare data presented for the LanEast and LanWest projects in Section 2.1.3.3 is an approximation of locations and durations of glare exposure based on a worse-case scenario.

Applicable Policies and Regulations

The Proposed Project's consistency with applicable goals, policies or requirements of an applicable Community Plan or Subregional Plan is fully addressed in Chapter 2.5, Land Use,

of this Program EIR (see Section 2.5.3.2, Conflict with Plans, Policies and Regulations). Because applicable goals and policies of local and regional plans (including those established for the protection of visual resources) are discussed elsewhere in this document, this section does not include an analysis of aesthetic policies and regulations. Therefore, while the County's Guidelines for Determining Significance, Report Format and Content Requirements: Visual Resources (July 2007) recommends consideration of goals, policies and requirements of applicable plans in the evaluation of whether a significant impact to visual resources will occur as a result of project implementation, that consideration and analysis is presented in Chapter 2.5, Land Use. Lastly, the County significance guidelines for visual resources also recommends consideration of applicable goals, policies or requirements of a Historic District's Zoning in the visual resources analysis however; there are no established Historic Districts in the project area (see Section 2.4, Cultural Resources, for additional detail) and thus the guidelines is not applicable.

2.1.3.1 Scenic Vistas

Guidelines for the Determination of Significance

For the purpose of this Program EIR, the County's *Guidelines for Determining Significance, Report Format and Content Requirements: Visual Resources* (County of San Diego 2007) applies to both the direct impact analysis and the cumulative impact analysis. As stated in the County guidelines, a significant scenic vista impact would occur if:

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

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

Analysis

The following analysis references Key View locations that were selected to analyze the potential visual resource impacts associated with construction and operation and maintenance of the Proposed Project. The location of Key Views selected to analyze the potential impacts of the Tierra del Sol solar farm and gen-tie and the Rugged solar farm are depicted on Figure 2.1-2. Because project-level information was not available for the LanEast and LanWest solar farms, as previously stated, key views were not identified or analyzed for these sites. Instead, the potential visual impacts of these projects are discussed qualitatively and generally.

Tierra del Sol

Solar Farm

The Tierra del Sol solar farm would be visible from Tierra del Sol Road (a public road) at varying levels of visibility based on distance and topography. While the majority of Key Views considered and analyzed for the Tierra del Sol solar farm are located on Tierra del Sol Road, there are no designated or known valued focal points on the roadway within the viewshed. Relatively wide, expansive, and continuous views of the project area are, however, available from the roadway (see Key Views 1, 4, and 5) but, as viewed from these locations, trackers would display largely horizontal forms and lines, and the introduction of these features would not substantially obstruct, interrupt, or detract from existing available views (see Figures 2.1-3, 2.1-6, and 2.1-7). The duration of the viewer experience of the Tierra del Sol solar farm from middle-ground viewing distances on Tierra del Sol Road (such as from Key Views 1 and 4) would generally last for approximately 1.3 minutes or less depending on intervening topography and vegetation. From foreground viewing distances on Tierra del Sol Road (i.e., Key Views 2 and 3), the duration of viewer experience would be longer (approximately 2.2 minutes) on account of increased proximity to solar farm components and general lack of intervening features in the landscape. However, because there are no designated or known valued focal and/or panoramic vistas available on the roadway, impacts to scenic vistas from a public road would be **less than significant**.

There are no recreational areas or designated scenic vistas or highways (including area roadways included in the County Scenic Highway System) located within the viewshed of the Tierra del Sol solar farm, and therefore, the Tierra del Sol solar farm would not affect these facilities. The site would be visible from several trails associated with the Boulevard Community Trails and Pathways Plan including the Shockey Truck, Lansing, Tierra del Sol, and San Diego and Arizona Eastern Railway trails; however, as stated in Section 2.1.1, these trails are existing unimproved access roads (or are located along roadway ROWs) that primarily traverse private lands. Therefore, as no public ROW has been established to-date and easements have not been acquired, these trails are not considered established recreational facilities, and they are not further discussed in this analysis.

Tierra del Sol Gen-Tie Line

The height of Tierra del Sol gen-tie structures would produce a relatively wide viewshed that would include portions of Tierra del Sol and Jewel Valley. Based on the local area topography and the approximate height (125 to 150 feet) of support poles, views of the gen-tie (lines and support structures) are anticipated to be limited from I-8, SR-94, and Old Highway 80. Interstate

8 and SR-94 are eligible state scenic highways and Old Highway 80 (as well as I-8 and SR-94) are included in the County's Scenic Highway System.

Views of Tierra del Sol gen-tie structures would be briefly available to east and westbound motorists on I-8. More specifically, views of gen-tie structures would be available to eastbound interstate motorists through two viewing windows. Near the Golden Acorn Casino, views would be intermittently available along a discontinuous and approximate 1.2-mile segment of the interstate, and between the Tecate Divide and Ribbonwood Road views would be available along a discontinuous and approximate 1.5-mile segment of the interstate. Westbound motorists would be afforded views of the gen-tie structures along a discontinuous 1.5-mile segment of the interstate between the large Rio Bend RV Resort billboard (located south of I-8) to Ribbonwood Road.

While viewing opportunities from the eastbound travel lanes would generally be greater due to the superior viewing angle and higher elevation location of motorists, views from the eastbound travel lanes as the interstate descends into the McCain Valley area are relatively expansive, stretching north to the Laguna Mountains and south into Mexico. In addition, at the closest point, Tierra del Sol gen-tie structures in Jewel Valley would be located approximately 1.5 miles to the interstate, and the distance, as well as intervening topography, would diminish the visibility of structures in the landscape. Further, intervening topography would limit the visible portion of Tierra del Sol gen-tie structures in Jewel Valley such that only those structures located on higher elevation areas (such as that traversing terrain near Rattlesnake Mountain) may be viewed in their entirety. These structures would however be located nearly 3 miles from the interstate, would be partially backscreened by the distant Sierra Juarez mountains, and would not be visually prominent. Views of Tierra del Sol gen-tie structures may also be visible to westbound interstate motorists; however, the structures would be located nearly 2 miles from the westbound travels lanes near McCain Valley Road. Several structures in the Jewel Valley area would be located atop a high elevation ridgeline and would be skylined. However, the Tierra del Sol gen-tie structures would appear distant (distance would reduce the apparent size of structures); and road cuts limit the availability of continuous southerly views from the interstate. Because the Tierra del Sol gen-tie structures would be distant features in the landscape and because views would be brief and broken by the presence of existing topographical features, the Tierra del Sol gen-tie line would not substantially obstruct or interrupt from a valued focal point or panoramic vista along I-8, and impacts would be **less than significant.**

Based on the proposed height of structures and local topography, the Tierra del Sol gen-tie viewshed may also extend to segments of Old Highway 80 located north and east of the gen-tie alignment. According to the viewshed map, views of Tierra del Sol gen-tie structures may be available to eastbound motorists along an approximate 0.80 mile segment of the highway to the north between Tierra Heights Road and SR-94, and an approximate 0.35 mile segment of the

highway to the east between Starship Gate and Starship Lane. As viewed from the segment of the highway to the north, gen-tie structures would be distant features in the landscape (the nearest structure would be located approximately 1.3 miles to the southeast), and intervening topography and vegetation would partially screen structures from view. From the eastern segment of the highway, views of the Tierra del Sol gen-tie structures may be available to westbound motorists between a series of tall, boulder-covered hills located west of the highway; however, views would be brief and made in passing and structures would be located more than 3 miles from the highway. As such, the apparent size of structures would be reduced and the screening effects of local topographical features would reduce the overall visibility of the Tierra del Sol gen-tie line. Further, the screening effect would be dynamic and would remain relatively consistent due to the presence of multiple tall topographical features. Therefore, because views would be made in passing and would not be constant along the highway, the Tierra del Sol gen-tie line would not substantially obstruct or interrupt from a valued focal point or panoramic vista, and impacts would be **less than significant.**

According to the viewshed map (see Figure 2.1-1), the Tierra del Sol gen-tie line may be visible along an approximately 1 mile long segment of SR-94, generally between Tierra del Sol Road and Old Highway 80. Along this segment the nearest structure would be located approximately 1 mile from the roadway and southerly views of the Tierra del Sol gen-tie line would generally be screened by existing vegetation. In addition, southerly views along the identified segment of the SR-94 includes sloping terrain covered in dense chaparral vegetation and while natural, the southern landscape lacks particularly bold focal points. On the other hand, the view to the east includes the undulating ridgelines of the distant Sierra Juarez mountains, and therefore, the easterly views from the roadway are assumed to be the focal point of visual interest for motorists. Therefore, the Tierra del Sol gen-tie line would not obstruct or interrupt from a valued focal point or panoramic vista on the roadway, and impacts would be **less than significant**.

In addition to scenic highways, the Tierra del Sol gen-tie line viewshed would extend to segments of public roads in the project area, most notably, Tierra del Sol Road and Jewel Valley Road. According to the viewshed map, the visibility of the Tierra del Sol gen-tie would be intermittent along the Tierra del Sol Road between SR-94 and into Tierra del Sol proper and views would be partially screened by existing vegetation south of Tierra Real Road. It should be noted however that oak trees and other vegetation adjacent to Tierra del Sol Road through the community recently burned during the September 2012 Shockey Fire, and the screening effect of mature trees has been affected. Still, the local topography may partially screen views of structures along the southbound lanes of the roadway such that a portion of structures may be visible. Visual effects associated with the Tierra del Sol gen-tie line as viewed from the northbound travel lanes of Tierra del Sol Road are analyzed in Section 2.1.3.2~~3~~ (see Key Views 6 and 7) and, due to the introduction of disparate forms and lines to the landscape, the Tierra del Sol gen-tie line could negatively affect the visual character of the landscape as viewed from the

roadway. However, despite the relatively broad composition of the existing landscape, the middle ground ridgeline limits the physical extent of the view (see Key View 6), and therefore, the view is not considered overly panoramic. Lastly views of the characteristic ridge and valley landscape including the prominent form of Rattlesnake Mountain of the Jewel Valley area are available from Jewel Valley Road (see Key Views 8 and 9). However, as viewed from Key View 8, the structures would not be overly prominent or bold features in the landscape and existing oak trees would create gaps in the visibility of structures. In addition, as viewed from Key View 9, the vertical profile of most structures would not pierce the horizon line and structures would not obstruct or screen views of Rattlesnake Mountain, a focal point in the existing landscape. Further, the landscapes of Key Views 8 and 9 are relatively limited in extent by local area ridgelines located in the foreground viewing distance; thus, these views are not considered panoramic. Therefore, the Tierra del Sol gen-tie line would not detract from a visual focal point available along local areas roadways and would not detract or obstruct available panoramic views. As such, impacts would be **less than significant.**

Rugged

Wide, panoramic views of the McCain Valley, In-Ko-Pah, and Sierra de Juarez mountains are available to eastbound I-8 motorists as they traverse the Tecate Divide and descend into McCain Valley (see Key View 11). Views of the Rugged solar farm would be available to motorists, however, the presence of road cuts (which effectively enclose the environment visible from the interstate) as well as wide panoramic views to the southeast and south may limit the potential for scenic vista impacts and draw viewer attention away from McCain Valley. In addition to I-8, the Rugged solar farm would be intermittently visible along short segments of Old Highway 80 generally east of McCain Valley Road. Both I-8 and Old Highway 80 are included in the County Scenic Highway System. As discussed above in Section 2.1.1, the Rugged solar farm would be partially visible to eastbound I-8 motorists for approximately 15.5 seconds and for approximately 61 seconds for westbound I-8 motorists. In addition, as discussed in greater detail below in Section 2.1.3.3, the details of solar farm components would not be overly discernible when viewed from the eastbound travel lanes of I-8. Due to motorist movement and speed, the form of individual trackers would be difficult to detect, and visibility of the tracker fields edges would be obscured and relatively vague (approximately 40% of the overall trackers would be visible to eastbound I-8 motorists). As shown on Figure 2.1-13, the scale of the solar farm development and the lightly colored surfaces of trackers in the McCain Valley would however, be visible to motorists.

While motorists would be afforded views of the Rugged solar farm site, the resulting visual contrast between the solar farm facility and the surrounding landscape would be muted by a limited view duration. In addition, the distance between eastbound travel lanes and the project site would reduce the apparent scale of individual solar farm components (see Key View 11) and

intervening topography would occasionally screen the project site from view. Further, where views are available, eastbound motorists would experience the Rugged solar farm in close temporal proximity to the Kumeyaay Wind Farm, which could reduce their overall visual sensitivity to changes in the landscape. Therefore, while the lightly colored surfaces of trackers would be momentarily visible to eastbound interstate motorists, the solar farm would display a largely horizontal form on the McCain Valley floor and views would be of a limited duration and partially screened by intervening topography. In addition, views of the dominant ridgeline of the In-Ko-Pah Mountains to the east would be maintained following project implementation and long, broad views to the south and southeast would also be available to motorists as they pass the Tecate Divide and descend into the McCain Valley area. Therefore, the Rugged solar farm would not obstruct or interrupt from a valued focal point or panoramic vista as viewed from eastbound I-8, and impacts would be **less than significant**.

Views of the Rugged site would be available to westbound interstate motorists near the McCain Valley Road overpass and extending to two view windows for 43 seconds followed by an additional 18-second view duration. The trackers would appear in a low saddle in the natural topography at a distance from 1.5 miles (background view) to 0.6 mile (foreground view), respectively, as motorists move through the area (see Key View 14). The addition of trackers and the effects of vegetation removal and grading would be apparent: trackers would break the existing horizon line and at times, the "new" horizon line would appear as a serrated edge that contrasts with the existing flowing line created by the merging of vegetated land and sky. While only a small portion of the total solar farm features would be visible from the westbound travel lanes of I-8, the alteration of the low saddle area and the installation of trackers to the horizon line would be apparent to passing motorists. Therefore, due to the anticipated visibility of trackers to westbound interstate motorists, the implementation of the Rugged solar farm may result in a visual contrast between trackers; the graded, denuded site; and existing topography and vegetation in the area.

The following project design feature (PDF), as listed in Table 1-10 of Section 1.0, Project Description, would be implemented during construction activities for the Rugged solar farm in order to reduce scenic vista impacts associated with existing views available from the westbound travel lanes of I-8. With implementation of PDF-AE-1, CPV trackers and the visual effects of grading and vegetation removal associated with the Rugged solar farm would not be visible from the westbound travel lanes of I-8, and existing views of the landscape located north of the interstate would be maintained. Additional detail regarding PDF-AE-1 is provided in Appendix 2.1-4, Landscape Screening Design for the Soitec Solar Development Program EIR.

PDF-AE-1 In the southernmost parcel of the Rugged site, pull back project grading and remove trackers from the natural saddle that occurs on the southern parcel and would likely be visible to westbound Interstate 8 motorists. In-place existing natural vegetation shall be protected to act as a low screen and provide

topographic and vegetative continuity across the saddle area ~~as much as possible in~~ complying~~iance~~ with the Fire Protection Plan ~~to act as a low screen and provide topographic and vegetative continuity across the saddle area~~. Additional shrub plantings (fire resistant and a maximum height 6 feet) shall also be included in the area to reinforce vegetation line across the saddle.

Additional detail regarding PDF-AE-1 is provided in Appendix 2.1-2, Rugged Solar LLC Project, Visual Resources Technical Report (see Figure 10). Broad, panoramic views of the McCain Valley are briefly available to motorists along McCain Valley Road. Upon exiting public lands managed by the BLM and transitioning from the dirt surface of McCain Valley Road to the County-maintained paved portion, southbound motorists are afforded broad views of the McCain Valley along an approximate 0.2-mile segment of the road. West-oriented views are available and then are quickly interrupted by a short earthen berm populated with oak trees. A similar view is afforded to northbound motorists as the valley landscape framed by the Tecate Divide and an expansive sky is briefly revealed upon passing the vegetated earthen berm located west of McCain Valley Road. Implementation of the Rugged solar farm would entail the construction and operation of a 34.5 kV overhead collection system supported by steel poles (between 50 and 75 feet in height) some of which would span McCain Valley Road north of the aforementioned berm area. Steel support structures would also be located to the west of McCain Valley Road and within the solar farm boundary. Lastly, as they travel through the viewing windows discussed above, motorists would be afforded views of the site's perimeter fencing and the graded and leveled solar farm populated with repetitive rows of trackers. The O&M building (approximately 24 feet in height) would be surrounded by rows of taller trackers, and therefore, the facility may be somewhat obscured.

While the installation of trackers and associated solar farm facilities would be visible to motorists along segments of McCain Valley Road, viewing opportunities to the solar farm and the McCain Valley would be relatively limited and brief. In addition and as discussed above, broad views of the McCain Valley and solar farm facilities from McCain Valley Road would be intermittently screened by intervening landform and vegetation. Further, and as viewed from southbound McCain Valley Road (see Key View 13), trackers on the Rugged solar farm would display a relatively horizontal form and line, and as shown on Figure 2.1-15, trackers would not rise above the western horizon line and obstruct views of the Tecate Divide and the expansive desert sky. Trackers located east of McCain Valley Road would also be visible to north and southbound motorists as they gaze towards Mt. Tule and the In-Ko-Pah Mountains however; trackers would not rise above the mountainous ridgeline (approximate elevation of Mt. Tule is 4,647 feet) and would not fully conceal higher elevation terrain from view. In addition, views to the east are rather limited in extent and therefore, they are not considered to be panoramic. Further, due to the limited extent of eastern oriented views, longer and broader views to the west encompassing McCain Valley and the Tecate Divide are assumed to engage

the focus of the majority of passing motorists. Therefore, as viewed from McCain Valley Road, the Rugged Solar Farm would not obstruct or interrupt from a valued focal point or panoramic vista, and impacts would be **less than significant**.

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

As shown on the Project Viewshed Map (Figure 2.1-1), views of the project site may be available to motorists on the eastbound SR-94 between Tierra del Sol Road and the confluence of Old Highway 80 and the state route. Along this approximate 1-mile segment of SR-94, rising terrain and dense chaparral vegetation partially obscure northeasterly views to the Rugged solar farm site. Where brief, passing views would be available, distance would decrease the apparent scale of project components (the project site is located approximately 2 miles to the northeast), and trackers would not interrupt or obstruct northeasterly and easterly scenic views of the In-Ko-Pah Mountains and other prominent landforms in the background viewing distance. Because the western boundary of the Rugged solar farm would be located approximately 1.75 miles northeast of the confluence of SR-94 and Old Highway 80, the Rugged solar farm site and project components would not be located in the field of vision of westbound motorists, and therefore, views of the project are not available from the western travel lane of SR-94. As such, focal and/or panoramic vista impacts from SR-94 would be **less than significant**.

The inclusion of tall, rectangular trackers featuring straight, repetitious lines, and smooth, manufactured textures associated with the Rugged solar farm could potentially detract from the overall scenic quality of the site; however, it would not diminish the scenic value of designated focal points or panoramic vistas available from recreation areas. Designated focal points within the BLM-managed McCain Valley Conservation Area include the Sacatone Overlook (approximately 2 miles northeast of the project site) and the Carrizo Overlook (approximately 5 miles north of the project site). Due to intervening topography associated with the southern extent of the In-Ko-Pah Mountains, the Rugged solar farm would be effectively screened from view from these locations (see Figure 2.1-1, Project Viewshed Map, which indicates the location of the BLM overlooks). As shown on Figure 2.1-1, the Rugged solar farm may also be visible to recreationists at BLM-managed lands within the McCain Valley Conservation Area; however, OHV users would be afforded brief, passing views of the site from a limited number of trails and dispersed recreationists would be afforded intermittent views of solar farm due to intervening topography. In addition, from elevated viewing locations to the north, solar farm components would not substantially obstruct or interrupt views of prominent background features such as distant mountainous terrain and would not obstruct views of the wide, expansive sky. Also, views of the project from atop Mt. Tule (located approximately 2 miles east of McCain Valley Road) would be available; however, solar farm development would comprise a small percentage of the land area within the viewshed. Views from Mt. Tule are panoramic in nature, and although the Rugged solar farm would be visible in a portion of the valley landscape to the west, views of mountainous terrain to the north and long, broad views of the desert landscape to the east and south are also available. Further, due to the superior angle of view afforded to viewers atop Mt. Tule, components of the Rugged solar farm would appear as relatively horizontal features on the valley floor and would not obstruct the long, scenic views to the western horizon and the Tecate Divide. In addition, the lack of trailhead or parking area signage for trails to the summit at the entrance to the BLM McCain Valley Conservation Area or along McCain Valley Road and the generally rough/poor condition of the narrow, dirt road leading towards the base of Mt. Tule from McCain Valley Road suggests that Mt. Tule and any trail(s) to the summit are not widely used by recreationists. Therefore, for the reasons discussed above, Rugged solar farm impacts to panoramic vistas available from recreational areas would be **less than significant**.

LanEast and LanWest

The LanEast and LanWest solar farms may be visible from prominent ridgelines located south of Tule Canyon (east of Tule Lake); however, there are no established trails to these possible viewpoints generally located within the southern extent of the BLM-managed Carrizo Gorge Wilderness. Therefore, because access to the area is limited, recreational usage is assumed to be low/limited, and impacts would be **less than significant**.

The LanEast and LanWest solar farms are also likely to be visible from atop Mt. Tule (located approximately 3 miles northeast of the LanEast site); however, solar farm development would comprise a small percentage of land visible within the viewshed, and solar farm components would not substantially obstruct available broad, westward-orientated views. From atop Mt. Tule, project components would appear as relatively horizontal features in the landscape located south of Interstate 8 and would not screen or obstruct views of the western horizon line and the expansive desert sky. The superior viewing angle available atop Mt. Tule also suggests that ridgelines and terrain to the south and southeast would remain visible following project implementation and that available views of the southern extent of Jewell Valley, the Tierra del Sol area and long distant views into Mexico would not be substantially obstructed by project components. In addition, given the remote location of Mt. Tule and the lack of trailhead or parking area signage at the entrance to the BLM McCain Valley Conservation Area or along McCain Valley Road and the generally rough/poor condition of the narrow, dirt road leading towards the base of Mt. Tule from McCain Valley Road, it is assumed that Mt. Tule and any trail(s) to the summit are not widely used by recreationists.

The sites may be visible from the east and westbound travel lanes of I-8. As discussed earlier for the Rugged solar farm, the view for eastbound motorists as they pass the Tecate Divide and begin the descent into the McCain Valley is particularly scenic, and wide, panoramic views of the valley and the In-Ko-Pah and Sierra Juarez mountains (which define the eastern horizon) are available. According to the viewshed map, views to the solar farm sites would not be available from the eastbound travel lanes of the interstate between the Tecate Divide and Ribbonwood Road. Views of the solar farm sites would, however, be available to eastbound motorists along an approximate 1.4-mile segment of the interstate as measured from approximately 1 mile east of Ribbonwood Road to the eastern boundary of the LanEast site. Assuming a travel speed of 70 miles per hour, the solar farm sites would be within the viewshed of eastbound motorists for approximately 72 seconds. The viewshed map (Figure 2.1-1) indicates that views of the solar farms may be visible from the westbound travel lanes over an approximate 2.1-mile long segment of the interstate as measured from the Rio Bend RV Resort billboard (located south of I-8) to the western boundary of the LanWest site. Assuming a travel speed of 70 miles per hour, the solar farm sites would be within the viewshed of westbound motorists for approximately 108 seconds. From the I-8 corridor the solar farms would be visible at an immediate foreground viewing distance and from a superior viewing angle, but would be occasionally screened by vegetation to the south and within the interstate median. In addition, from this location, the landscape to the south is panoramic with focal areas comprised of the middle-ground ridgelines and the expansive desert sky.

Power generated by the LanEast and LanWest solar farms would be delivered to the Rebuilt Boulevard Substation (located approximately 1,000 feet southwest of the LanWest boundary) by way of a dedicated overhead 12 kV distribution line. While the specifications of support

structures for the distribution line are not known at this time, given the voltage of the gen-tie line, wood pole structures exhibiting a maximum height of 40 feet are assumed for this analysis. Installation of 40-foot-tall wood poles adjacent to the sites and Old Highway 80 would not substantially affect views in the immediate vicinity. Existing wood poles supporting telephone cable and low voltage transmission lines are located adjacent to McCain Valley Road and Old Highway 80, and transmission line and telephone cable is currently strung across Old Highway 80 at several locations in the immediate vicinity (an existing line traverses Old Highway 80 from south to north to deliver power generated at the Rebuilt Boulevard Substation to the existing transmission network). Therefore, the introduction of additional electrical infrastructure to the Old Highway 80 corridor where vertical elements displaying similar characteristics currently exist would not substantially obstruct or interfere with existing views available from the highway.

Overall, the operation of trackers in the low-lying pasture and meadow areas located immediately south of the interstate could interrupt and degrade existing views available to east- and westbound interstate motorists. Trackers would briefly dominate southerly oriented views over approximate 1.4-mile and 2.1-mile segments of the interstate through McCain Valley, and motorists could be drawn visually to the solar farm sites given their close proximity to the interstate. Similarly, from Old Highway 80, the sites would be visible from an immediate foreground viewing distance at a normal viewing angle, and solar farm development could obstruct and interrupt existing views of the In-Ko-Pah Mountains ridgelines. Lastly, the vertical profile and angle of trackers could create a serrated horizon line visible to passing motorists that would obstruct and degrade available views from the highway. As such, scenic impacts as viewed from I-8 and Old Highway 80 could be **potentially significant (AE-LE-LW-1)**.

Proposed Project

As described above, the Proposed Project, which includes all four solar farms, would be visible from I-8, public roadways, and limited areas within BLM-managed public lands in McCain Valley. From public roadways and I-8, views of trackers and other project components would be intermittently available and made in passing. While the Tierra del Sol solar farm would not be visible from I-8 (the local topography surrounding the Tierra del Sol site would effectively conceal the site from interstate motorists – see Figure 2.1-1), the Rugged, LanEast, and LanWest solar farms would be visible from the interstate. Combined views of the solar farm facilities may overlap along the segment of the interstate located adjacent to the LanEast and LanWest sites however, with implementation of PDF-AE-1, project components on the Rugged site would be pulled back such that they would not be visible from the westbound travel lanes of the interstate. Combined views of the Proposed Project and more specifically, views of the Rugged, LanEast and LanWest solar farms, may also be available along a 1-mile segment of westbound Old Highway 80 between the community of Bankhead Springs and the eastern boundary of the

LanEast site. The superior viewing angle available along this segment of the highway and the availability of views to the north beyond Interstate 8 and towards the Rugged project site suggests that views of trackers may be available to highway motorists following project implementation. From the eastbound lane of Old Highway 80, the vertical scale of trackers on the LanEast and LanWest sites would limit the possibility of combined views of the Rugged, LanEast and LanWest solar farms. Lastly, along an approximate 1-mile segment of eastbound SR-94 between Tierra del Sol Road and the confluence of Old Highway 80 and SR-94, distant views of the Rugged solar farm to the northeast and views of Tierra Del Sol gen-tie monopoles in Jewell Valley to the southeast may be intermittently available to motorists. Views to the Rugged site would be distant and Proposed Project components would not substantially obstruct views of prominent ridgelines and terrain to the east and southeast.

Combined views of the Rugged, LanEast, and LanWest solar farms from BLM-managed public lands in McCain Valley to the north would be limited due to intervening topography located south and east of the Rugged site. The Proposed Project would not likely be visible from either of the scenic overlooks managed by the BLM in the area (the Sacatone and the Carrizo overlooks) due to intervening topography and vegetation (see Figure 2.1-1, Project Viewshed Map). In addition and as discussed in Section 2.1.3.3 below, the valued focal point/panoramic vista from the overlooks is to the east and includes views of the Jacumba Mountains, Colorado Desert, and the Imperial Valley. Therefore, while construction and operation of the Proposed Project would not result in a substantial adverse effect on a scenic vista as viewed from a recreational trail or area, the vertical profile and contrasting character of project components at the LanEast and LanWest solar farms sites could obstruct, interfere, and detract from existing panoramic and focal vistas available from I-8 and Old Highway 80 (both facilities are public and included in the County Scenic Highway System). The panoramic landscape visible from the interstate to the south attracts the attention of motorists and the Proposed Project may affect existing views by permanently altering the character of the foreground landscape. For example, as viewed from the eastbound travel lanes of I-8, the LanEast and LanWest solar farms would be located in the foreground viewing distance and the volume and vertical scale of trackers could substantially obstruct and detract from available valued views of terrain and ridgelines. Further, from the westbound lanes of I-8 near McCain Valley Road, views of the LanEast and LanWest solar farms would be available and the contrasting form, line, and color of trackers could interrupt or obstruct existing panoramic and/or distant views of the McCain Valley area. Therefore, the the Proposed Project (and more specifically, the LanEast and LanWest solar farms) could substantially obstruct or interrupt from a valued view available from I-8 and Old Highway 80 and as such, impacts are considered **potentially significant** (**AE-PP-1**).

2.1.3.2 Visual Character or Quality

Guidelines for the Determination of Significance

For the purpose of this EIR, the County's *Guidelines for Determining Significance, Report Format and Content Requirements: Visual Resources* (County of San Diego 2007) applies to the direct and indirect impact analysis, as well as the cumulative impact analysis. A significant impact would result if:

a. 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.

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

Tierra del Sol

Key views from which to assess effects to visual character or quality resulting from development of the Tierra del Sol solar farm and gen-tie line were selected in collaboration with County staff and encompass characteristic and sensitive viewpoints encountered in the existing landscape and special project and landscape features that are critical to evaluating the overall visual effect of the Tierra del Sol solar farm and gen-tie line. The locations of the ten Key Views chosen for the analysis are identified in Figure 2.1-2, and the characteristics of each Key View are summarized in Table 2.1-4, below. Also, the location, orientation, and existing visual character of each Key View landscape are discussed below.

While key views were not established south of the Tierra del Sol site in the small community of Ejido Jardines Del Rincon, residences there would be afforded direct and unobscured foreground views of the solar farm facility. While the views afforded to residents of Mexico would be permanent and long-term in nature and due to proximity, the anticipated visual change and effects would be similar to the visual change and effects anticipated to occur at foreground key view locations along Tierra del Sol Road. In providing a range of viewing distances and elevations, the four key views and associated visual simulations located on Tierra del Sol Road can be used to approximate the visual changes and effects to the existing landscape that would be experienced from the community of Ejido Jardines Del Rincon.

Key View 1

Key View 1 provides a representative view for eastbound motorists on Tierra del Sol Road (see Figure 2.1-3). The key view is at an approximate elevation of 3,515 feet, and from this location the project site rises 135 to 230 feet (high point of the Tierra del Sol site is approximately 3,745 feet) along an approximate 5% slope gradient.

From this particular vantage point, the roadway appears to bisect a relatively consistent visual pattern featuring the granular and gritty white colored soils of the adjacent ROW and the moderately textured, rolling form of light to dark green chaparral vegetation. The road and native vegetation are viewed in the foreground and middle-ground viewing zones. A grove of ornamental trees associated with an old homestead are prominent at the ridgetop on the Tierra del Sol site, and these trees break the otherwise dominant horizontal horizon line. High voltage transmission lines and lattice structures are visible in the foreground and middle-ground, and the large metallic structures contrast with the bright blue color of the expansive background sky. Lower wooden power or telephone poles parallel the roadway; however, because these poles do not break the horizon line, they are less visually intrusive than the larger lattice structures.

Key View 2

Similar to Key View 1, Key View 2 (Figure 2.1-4) provides a representative view for eastbound motorists on Tierra del Sol Road and residents located adjacent to the western boundary of the proposed project site (see Figure 2.1-2 for key view location). The Key View faces east and is at an approximate elevation of 3,640 feet.

The landscape from Key View 2 is nearly dominated by the curvature of the asphalt surface of Tierra del Sol Road; the adjacent, relatively wide sand-colored and granular textured road shoulder; and native vegetation. The short, rusted posts and branches supporting the inconspicuous barbed wire fence are visible beyond the ROW and somewhat blend in with the grey-green color of dry, knee-high shrubs and taller chaparral vegetation. The variable height of vegetation in the landscape creates a flowing, soft, and irregular horizon line against a characteristically clear blue sky. The rustic barbed-wire fence, although dilapidated, adds to the rural character of this view.

Key View 3

Key View 3 provides a representative view for westbound motorists of Tierra del Sol Road as well as residents located immediately north of the Tierra del Sol site (see Figure 2.1-5). The key view is located at an approximate elevation of 3,615 feet, and the view faces west–southwest to the site.

As shown on Figure 2.1-5, the view from Key View 3 contains two primary visual focal points: the terminus of Tierra del Sol Road at the western horizon line and the small grouping of pine trees and a lattice transmission tower grouped near the western ridgeline on the site. Native vegetation dominates the view to the southwest line where the clumped texture and dark-green color of pine trees and a lattice tower break the otherwise uniform horizon line. The chaparral vegetation visible across the site creates a rugged, relatively continuous visual form across the landscape that is typical of the surrounding area. However, Tierra del Sol Road, as well as the distant 500 kV Southwest Powerlink transmission structure and distribution line structures adjacent to Tierra del Sol Road, create breaks in the continuity of the visual environment. While the visible lines from this view are largely horizontal, the vertical lines created by trees, and electrical infrastructure create some level of variety in the landscape.

Key View 4

Key View 4 provides a representative view of southbound motorists on Tierra del Sol Road. The Key View location is at an approximate elevation of 3,650 feet which is similar to the elevations across the Tierra del Sol site.

The Key View 4 landscape consists of a wide, relatively expansive view of the distant site and the surrounding Tierra del Sol community (see Figure 2.1-6). The specific lighting conditions represented in Figure 2.1-6 render the Tierra del Sol solar farm in a backlit condition that reduces discernible landscape detail in the distance. The rolling form of Tierra del Sol Road is visible in the immediate foreground and proceeds south towards the site and distant mountainous terrain located beyond the solar farm site in Mexico. Vegetation in the immediate foreground is clumped and of moderate height with relatively flat openings of fine textured short grasses on which a modest, tan-colored residential structure is located. Beyond the structure, scrub oak woodlands dot the landscape, and the dark green color and rough texture of trees and shrubs is relatively consistent to the Tierra del Sol site when viewed at this low angle. The tall, angular forms of distant 500kV Southwest Powerlink transmission structures, telephone poles, and clumped pine trees on the horizon line contribute vertical interest to the skyline but do not upset the dominant horizontal line of the landscape at the horizon line. The gently undulating landform that is characteristic of the Tierra del Sol area is evident in this Key View.

Key View 5

Key View 5 provides a representative view of residents located near the western terminus of Tierra Estrella to the Tierra del Sol site. Key View 5 is east–southeast facing and is situated at an approximate elevation of 3,580 feet.

The Key View 5 landscape is characterized as primarily natural and characteristic of the Tierra del Sol community. The juxtaposition of natural and man-made elements is evident in the landscape;

however, the prominence of chaparral vegetation in the foreground and overall weak contrast created by residential development and distant transmission infrastructure creates a largely natural setting. As shown in Figure 2.1-7, the visual pattern of head-high shrubs in the foreground is broken by the wide, sand-colored linear form of a wide access road. Beyond the access road, vegetation is tall and relatively constant into the valley and the far slopes leading up to the Tierra del Sol site. Vegetation colors are a mix of olive green and dark green with tinges of greys and browns. Residential development is sporadically visible throughout the landscape, interspersed with relatively dense cover of chaparral vegetation that screens some structures from view.

From the Key View location, the topography of the area slopes downward into a shallow valley before climbing toward the site, which is demarcated by the presence of a clustering of pine trees along the central horizon line. Four high-voltage transmission structures decrease in visibility as the elevation of the valley decreases to the west. Lastly, the rugged terrain of a distant mountain range in Mexico contributes a relatively noticeable feature on the skyline. Overall, the horizon line is an unbroken undulating, horizontal line punctuated by occasional trees and transmission towers.

Key View 6

Key View 6 provides a representative view of northbound Tierra del Sol motorists and is located approximately 600 feet north of the Tierra del Sol site. The orientation of the Key View is to the north–northeast towards the Tierra del Sol gen-tie line alignment and is located at an approximate elevation of 3,600 feet.

From Key View 6, the juxtaposition of the valley landscape characterized by agricultural uses, low-density rural residential development, and oak tree clusters and the chaparral and boulder covered ridgeline landscape is apparent yet forms an otherwise coherent and harmonious rural visual pattern (see Figure 2.1-8). Local electrical and communication infrastructure and fencing installed adjacent to Tierra del Sol Road display a particularly rural character and are constructed at a rural scale, and these elements further contextualize the character of the project area. The tan color of exposed soils in the foreground contrast slightly with the green hues of vegetation; however, cleared lands for agricultural and ranching uses are commonplace in the surrounding area.

Key View 7

Key View 7 provides a representative view afforded to northbound motorists on Tierra del Sol Road. The orientation of the key view is to the north and east towards the proposed overhead Tierra del Sol gen-tie line alignment and is located at an approximate elevation of 3,655 feet.

The vertical form and straight line of local communication infrastructure, crossing signage, and to a lesser extent, distant electrical infrastructure, creates slight visual contrast when viewed

against the characteristic pattern elements of vegetation and terrain in the surrounding landscape. These features, however, are located alongside Tierra del Sol Road for the most part, and visible man-made development is largely limited to the roadway corridor (see Figure 2.1-9). The weakly defined horizon line is not bold or striking, and the slightly mounded and spreading form of vegetation lacks distinctness and particularly interesting visual patterns. The distant mounded form of Rattlesnake Mountain does provide some visual interest in the landscape; however, as viewed from Key View 7, the apparent size of the mountain is reduced, and the feature is not visually prominent.

Key View 8

Key View 8 provides a representative view afforded to northbound motorists along the southern extent of Jewel Valley Road. The orientation of the Key View is from southwest to northwest towards the proposed overhead Tierra del Sol gen-tie line alignment and is located at an approximate elevation of 3,570 feet.

From Key View 8, the tall form and straight, vertical line of the lone support pole produces slight visual contrast when viewed in the context of the surrounding valley landscape, and in particular, with the forms and lines displayed by oak trees and the distant ridgeline (see Figure 2.1-10). While the western horizon is somewhat obscured by the tall, upright form of oak trees, a major component of the existing view is the sky which is relatively wide and expansive. A portion of the tall infrastructure support pole and to a lesser extent, the crowns of several large oak trees, pierce the horizon and are skylined. However, despite the silhouette created by the support structure against the backdrop of the expansive sky, man-made development is relatively limited, and the juxtaposition of short grasses and the tall oak trees creates a relatively distinct visual pattern. In addition, with the exception of the lone support structure, the Key View 8 landscape contains very few visual elements that contrast with the rural character of the surrounding area.

Key View 9

Key View 9 provides a representative view afforded to southbound motorists on Jewel Valley Road. The orientation of the key view is to the south and west towards the proposed overhead gen-tie line alignment and is located at an approximate elevation of 3,600 feet.

As viewed from Key View 9, vertical man-made development is limited to the Jewel Valley Road corridor, and the adjacent valley landscape displays a relatively distinct visual pattern of short grasses viewed against the tall, mounded form of oak trees on slightly rolling terrain (see Figure 2.1-11). Ridgelines to the south and west create a relatively strong horizon line that is interrupted by a limited number of man-made features including a wooden support pole and a segment of an overhead communication line. Occurrences of man-made development in the landscape (communication infrastructure, fencing, Jewel Valley Road) exhibit a rural scale and

character that, in association with the characteristic pattern elements of the valley and ridge landscape, creates a coherent assemblage of landscape features. In addition, as viewed from Key View 9, the mounded, slightly pyramidal form of Rattlesnake Mountain and, to a lesser extent, adjacent terrain to the north, creates visual interest.

Key View 10

Key View 10 provides a representative view afforded to northbound motorists on Jewel Valley Road as they climb out of the valley and travel towards Boulevard. The orientation of the Key View is to the west–northwest towards the proposed overhead gen-tie alignment and is located at an approximate elevation of 3600 feet.

As viewed from Key View 10, brown and short ranch rail fencing runs parallel to the tan soils of the wide Jewel Valley Road ROW, and undeveloped yet disturbed rising terrain is visible in the foreground viewing distance (see Figure 2.1-12). Oak trees dotting the valley floor are visible to the west as are chaparral-covered hills featuring occasional rural residential homes. Short grasses are visible on undeveloped ranch lands beyond the fencing and the mounded form and green color of chaparral vegetation can be seen near a small rock outcropping to the northwest. Distant electrical poles are slightly visible near the rock outcrop but due to their short form, these features are not visually prominent in the landscape. Similar to the ranch rail fencing, tall wooden poles supporting a single black communication line run parallel to Jewel Valley Road, and the rectangular form and green color of utility boxes are occasionally visible along the roadway.

Impact Analysis – Tierra del Sol Solar Farm

During the anticipated 14-month construction phase of the Tierra del Sol solar farm, short-term visual impacts including the presence of construction vehicles, equipment, materials, and laborers, and the generation of dust during vegetation removal and site grading, would occur. Construction activities would take place during an 8-hour period between the hours and on the days permitted by the County Noise Ordinance ~~of~~ (7 a.m. and 7 p.m., Monday through Saturday)~~,~~ and therefore, during autumn and winter months, nighttime illumination of the Tierra del Sol site may be required. Visual impacts from construction activities would primarily be experienced by residents located in the viewshed and afforded clear, unobstructed views of the Tierra del Sol site and by motorists on Tierra del Sol Road and smaller local roads such as Tierra Estrella and Tierra Del Road that provide motorists views of the site. Construction activities and resulting visual effects would be noticeable to residents and motorists during the 14-month period.

The following PDF, as listed in Table 1-10 of Section 1.0, Project Description, would be implemented during construction of the Tierra del Sol solar farm in order to reduce aesthetic impacts associated with the visibility of construction activities.

PDF-AE-2 Staging material and equipment storage areas, including storage sites for excavated materials, visible from nearby roads, residences, and recreational areas shall be visually screened using temporary screening fencing. Fencing shall be of an appropriate design and color for the Proposed Project location.

Once constructed**,** the Tierra del Sol solar farm would create strong visual contrast in form, line, and color with existing elements in the landscape, and effects to the existing visual character of the area would be most evident when viewed from a foreground viewing distance. For example, from Key View 2, strong visual contrast in form, line, and color resulting from the removal of rugged, olive green to grey chaparral vegetation and the exposure of underlying light sand-colored soils would be visible. As shown on Figure 2.1-4, the rectangular form and horizontal yet broken lines of trackers and the vertical tubular form of tracker components would dominate the foreground view as the closest tracker would be installed approximately 200 feet east of Key View 2.

Similarly, from Key View 3, development of the Tierra del Sol site would replace the rugged, amorphous form of existing green-colored vegetation with the tubular form and grayish color of tracker components; the boxy, horizontal form and lightly colored surface of trackers; and a stark expanse of light sand-colored soil that would dominate the view and become the focal point in the visual landscape (see Figure 2.1-5). Due to the vertical form and visual prominence of trackers, the on-site collector substation and O&M annex would likely be screened from view; however, the tall form and straight line of overhead collection cable support structures (approximately 50–75 feet in height) would be skylined and may be visible from Key View 2 and Key View 3 (collection cable support structures are not depicted in Figures 2.1-4 or 2.1-5). Figures 2.1-4 and 2.1-5 show that at a foreground viewing distance, trackers would be visually prominent, would demand the attention of Tierra del Sol motorists, and would effectively alter the quality of the site by removing natural elements (i.e., chaparral vegetation, rock outcrops, topographical variation) and installing and operating a solar farm. A contrasting visual pattern of little unity between solar farm components and the form, line, color, and texture of natural elements in the landscape would result.

While the resulting visual contrast associated with operation and maintenance of the Tierra del Sol solar farm would be apparent when viewed from a middle-ground viewing distance (i.e., Key Views 1, 4, and 5), the details of solar farm components would be mildly discernible. For example, when viewed from Key Views 1 and 4 (both of which are situated approximately 0.6 mile from the Tierra del Sol site – see Figures 2.1-3 and 2.1-6), the individual rectangular trackers would be somewhat more difficult to detect. However, the horizontal line of trackers, the color contrast between surfaces, the light sand-color of exposed soils and the olive to drab green of surrounding chaparral vegetation would be discernible. The mounded form of numerous trackers would create a regular, slightly rolling line that would raise and redefine the horizon line

(see Figures 2.1-3, 2.1-6, and 2.1-7). Other visible development in the landscape disrupting the continuity of vegetation across the Tierra del Sol solar farm site includes the Southwest Powerlink transmission structures, and the vertical lines and large, geometric form of the structures slightly disrupt and create breaks in the visual landscape. The existing structures also contribute bold and prominent geometric forms to the local viewshed that are primarily skylined.

The following PDF, as listed in Table 1-10 of Section 1.0, Project Description, would be implemented for the Tierra del Sol solar farm order to reduce aesthetic impacts.

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

Implementation of **PDF-AE-2** and **PDF-AE-3** may help reduce the potentially significant impact to existing visual character and quality of the site and surroundings identified above. The installation of temporary fencing around staging material and equipment storage areas could partially screen these areas from nearby roads, residences and recreational areas. In addition, the use of muted earth-tone colors and materials and coatings displaying little to no reflectivity at the the O&M building would help the facility to blend in with the existing landscape to the extent practicable. Further, non-specular overhead conductors on the collector system would reduce opportunities for project-generated glare from these features and could reduce the anticipated visual contrast resulting from project implementation. However, even with implementation of **PDF-AE-3,** the replacement 420 contiguous acres of native vegetation with uniformly lightly colored CPV trackers placed in uniform rows and the alteration of the horizon line resulting from the introduction of tall CPV trackers would constitute a **potentially significant impact** (**AE-TDS-1**) pursuant to significance guidelines A and B above.

Impact Analysis – Tierra del Sol Gen-Tie

The 6-mile long Tierra del Sol gen-tie line would be supported by approximately 20 to 25 regularly spaced tubular steel poles (approximately 125 to 150 feet tall) that would traverse the ridge and valley landscapes located between the underground transition locations east of Tierra del Sol Road and west of Jewel Valley Road (see Figures 1-7a and 1-7d). From the transition point west of Jewel Valley Road, the Tierra del Sol gen-tie would proceed in a northeasterly direction within an underground duct bank to the Rebuilt Boulevard Substation. The landscape along the proposed overhead alignment displays a similar visual character as that surrounding the Tierra del Sol site. Construction of the Tierra del Sol gen-tie would entail the introduction of approximately 20 to 25 steel poles exhibiting large, narrow forms, vertical lines, and dull gray colors to the existing visual environment. The Tierra del Sol gen-tie line would traverse elevated

terrain, with the exception of descending chaparral and boulder covered terrain that would partially backscreen several gen-tie structures located north of Rattlesnake Mountain in the Jewel Valley area (see Key Views 8 and 9, Figures 2.1-10 and 2.1-11, respectively).

As viewed from Key View 8, the visual contrast associated with the Tierra del Sol gen-tie line would be very low. The visual prominence of the Tierra del Sol gen-tie structures would be minimal due to the distance (approximately 1 to 1.4 miles) from this observation point to the gen-tie poles on the western ridgeline. Further, the overall visibility of the Tierra del Sol gen-tie line would be reduced by the partial back-screening of several structures by the ridge, and the screening effect of intervening oak trees located in the foreground. While the vertical form of several gen-tie poles would be skylined and these features would be slightly visible in the westward oriented views of passing motorists, the anticipated visual contrast and impact would be diminished by the presence of existing skylined vertical features in the landscape that currently break the continuity of the western horizon line. In addition, the presence of tall oak trees that dynamically screen the western ridgeline from the view of passing motorists reduces the visual contrast associated with form and line by avoiding the introduction of regular lines displaying consistent height on the western ridgeline. As such, visual impacts at Key View 8 would be less than significant**.**

From Key View 9 the visual impact resulting from introduction of the Tierra del Sol gen-tie line to the Jewel Valley landscape would be moderate. As shown in Figure 2.1-11, the majority of visible structures would be back-screened by the dark green to brown color of vegetation and local terrain; however, the solid form, and dull grayish color of structures would be noticeable. The uppermost portion of three of the visible structures would be skylined. However, existing electrical and communication infrastructure is present in the landscape along Jewel Valley Road and within the valley. The anticipated visual contrast and impact of the Tierra del Sol gen-tie line would be diminished by the presence of the existing skylined vertical features in the landscape that currently break the continuity of the horizon line. However, the Tierra del Sol gen-tie structures may contrast with the existing character.

Contrary to the superior viewing angle afforded to motorists at Key View 9, an inferior viewing angle is available at Key View 10 as Jewel Valley Road climbs out of the valley and proceeds towards the Boulevard area. The inferior viewing angle available at Key View 10 (see Figure 2.1-12) limits opportunities for topographical and vegetation back-screening, and as a result, vertical project features would largely be skylined as viewed from this location. As shown on Figure 2.1-12, the lower portion of the proposed gen-tie structure located closest to Jewel Valley Road (approximately 530 feet west of the roadway) would be obscured by rising terrain; however, the vast majority of the proposed structure would rise above the distant low horizon line and would be silhouetted against the sky. In addition, the undeveloped nature of and lack of vegetation on ranch lands located immediately west of wood rail fencing visible in

Figure 2.1-12 increases the visibility of the proposed structure, conductors, and dark colored gen-tie lines. The lack of intervening vegetation would also enhance the visual contrast between proposed and existing infrastructure in the visual landscape and more specifically, the contrast between the profile (wide), color (grey), and material (steel) of the gen-tie structure and the profile (narrow), color (dark), and material (wood) of existing support poles installed along Jewel Valley Road would be apparent. While the distance between Key View 10 and the proposed gen-tie structure slightly reduces the apparent scale of the feature in the landscape, the scale and mass of the proposed support pole would remain visibly larger than that of existing communication infrastructure along Jewel Valley Road, and angular conductors and the stringing of multiple lines between proposed structures is uncharacteristic of existing overhead electrical infrastructure in Jewel Valley.

From the ridge north of Rattlesnake Mountain, the overhead portion of the Tierra del Sol gen-tie would proceed in a southwesterly direction to the underground transition point east of Tierra del Sol Road. Views of this portion of the overhead gen-tie can be seen from Tierra del Road. Although the landscape and visual setting generally displays a rural character and scale, the 500 kV Southwest Powerlink transmission line that traverses the Tierra del Sol site to the south of the overhead portion of the gen-tie line, as well as existing vertical structures in the landscape (local electrical and communication infrastructure) contribute to the visual setting. As viewed from Key Views 6 and 7, the introduction of the Tierra del Sol gen-tie line would create visual contrast with existing natural and man-made features in the Tierra del Sol landscape (see Figures 2.1-8 and 2.1-9). More specifically, the introduction of the tall, vertical form, regular line, and dullish gray color of the Tierra del Sol gen-tie structures to the composite valley and ridgeline landscape would produce noticeable visual contrast with the short form, rugged line, and green to brown hues of surrounding vegetation. While the apparent size/scale of distant Tierra del Sol gen-tie structure would be diminished by distance, the skylined effect of structures would remain apparent to passing motorists and local residents, and the bulk and scale of the transition pole would remain prominent in the landscape (see Key Views 6 and 7, Figures 2.1-8 and 2.1-9). Moreover, the tall, bold form of the transition structure would appear abruptly in the landscape and would display short, horizontal, and metallic crossarms not currently exhibited in the surrounding area by existing infrastructure. Further, the disparity between the rural character of existing vertical infrastructure and the metallic, industrial character of proposed gen-tie structures would be evident. Also, as depicted in Key View 6, the placement of gen-tie structures through the valley would be exhibit a zig-zag organization as opposed to a straight linear arrangement displayed by existing support poles alongside Tierra del Sol Road. The jumbled arrangement of visible gen-tie structures and multiple crisscrossing and sagging transmission lines would produce slight visual chaos and would not resemble the straight, horizontal lines displayed by existing infrastructure in the landscape. Lastly, the skylined effect of multiple gen-tie structures piercing the distant horizon line would interrupt the existing open, broad and

natural composition of the view and the existing vividness, intactness and unity of the visible landscape would be affected.

As listed in Table 1-10 of Section 1.0, Project Description, the following PDF would be implemented for the Tierra del Sol gen-tie to reduce aesthetic impacts.

PDF-AE-4 Weathered or cor-ten steel shall be used for gen-tie monopoles to reduce the potential for color contrast between structures and existing vegetation and terrain.

The use of weathered or cor-ten steel could reduce the anticipated color contrast of the gen-tie line where new steel poles are back-screened by existing vegetation and terrain. The weathered or cor-ten finish could help structures to visually blend in with existing background elements in the landscape. In addition, implementation of **PDF-AE-3** could reduce project-generated glare associated with the introduction of gen-tie line conductors to the visual environment. While **PDF-AE-4** would help to reduce visual contrast resulting from introduction of the gen-tie, several gen-tie poles visible from Tierra del Sol Road and Jewel Valley Road would rise above the horizon line and would be skylined. In these instances, use of weathered steel, cor-ten steel, or neutral paint palettes would not reduce the visual contrast associated with tall, skylined gen-tie structures viewed against the expansive desert sky; however, the weathered, brown finished would be consistent with the color displayed by existing electrical and communication infrastructure along Tierra del Sol Road and Jewel Valley Road-. As such, the Tierra del Sol gen-tie alignment could result in **potentially significant** impacts to the visual character and quality of the area (**AE-TDS-2**).

Rugged

For the Rugged solar farm, four Key Views were selected, and locations encompass characteristic and sensitive viewpoints encountered in the existing surrounding area landscape. The four key views locations are identified in Figure 2.1-2, and the location and characteristics of each key view is summarized in Table 2.1-2. A summary of existing Key View characteristics and features and analysis of project effects to the landscape visible from each Key View location is provided below.

Key View 11

Key View 11 (see Figure 2.1-13) provides a representative view of the Rugged solar farm for eastbound motorists on I-8. Located at an elevation of approximately 3,823 feet, the elevated position of Key View 11 provides direct, easterly views of the McCain Valley and the Rugged site.

An expansive view of the McCain Valley is afforded to viewers at Key View 11. The I-8 corridor and other cultural modifications (e.g., cleared land, transmission lines, surface roads, and existing expanses of exposed soil, etc.) create visible breaks in the natural vegetation of the

valley. As viewed from Key View 11, vegetation of the McCain Valley is characterized by varied patterns of low, matted, green shrubs intermittently interrupted by larger, darker green oak trees. The northern portion (i.e., north of I-8) of the valley, including the Rugged site, has low to moderately undulating hills with periodic washes (Tule Creek) and occasional large boulders and rock outcrops that add texture and contrast to the landscape. Domed hills and well-defined mountain ridgelines serve as a backdrop to the lower, more gently sloped valley bottom that is generally visible along I-8.

Key View 12

Key View 12 (see Figure 2.1-14) provides representative views of the Rugged solar farm for northbound motorists on McCain Valley Road. From this location motorists would have clear and generally unobstructed foreground views of the easternmost portion of the Rugged site as they travel north along the road. The orientation of Key View 12 directs viewer attention to the east; the portion of the Rugged solar farm located west of McCain Valley Road would be partially screened from view by intervening topography (i.e., an elevated berm) supporting a large stand of oaks located west of McCain Valley Road.

The landscape seen in Key View 12 includes the eastern extent of the McCain Valley where it abuts the western slopes of the In-Ko-Pah Mountains. The area is characterized as high desert/open range land with occasional occurrences of light sand-colored exposed soil and rock, the low form and rough texture of grasses and shrubs exuding colors of white, olive to drab green, and red/orange and the mounded form and clumped texture of larger shrubs/trees on the Rugged site. Slopes descending from the southern extent of the In-Ko-Pah Mountains are evident to the east and create a low horizon line over the visible landscape. Cultural modifications (which tend to intrude upon the visual landscape) include the large, vertical form of steel lattice towers, cylindrical concrete pedestals, and the downward-sweeping distribution lines of energy infrastructure. Lastly, local power/telephone poles/lines parallel the ROW on the west side of McCain Valley Road and disappear towards the northern horizon.

Key View 13

Key View 13 (see Figure 2.1-15) provides representative views of the Rugged solar farm to southbound McCain Valley Road motorists and area recreationists. Located approximately 500 feet north of the paved terminus of McCain Valley, Key View 13 is situated on the public gravel driveway providing access to Rough Acres Ranch. While the orientation of this Key View directs views to the south and southwest, the eastern component of the Rugged site would also be visible east of McCain Valley Road (views would be similar to those discussed above for Key View 12). Key View 13 is situated at an elevation of approximately 3,600 feet.

As shown in this Key View, the existing Sunrise Powerlink infrastructure is routed along the east side of McCain Valley Road. A local pole/telephone line and low profile barbed-wire fence are present on the west side of McCain Valley Road. The Kumeyaay Wind Farm turbines are barely visible in the background views atop the Tecate Divide at the western edge of the McCain Valley viewshed (in the far right of the photo). The larger viewshed is dominated by low, rolling hills; generally low desert vegetation that is interspersed with boulders and rock outcrops; and Tule Wash, which cuts across the northern portion of the McCain Valley from the northwest to the southeast. Domed hills, distant mountains, and low ridgelines form the southern horizon line. The sky is as dominant of a unifying visual feature as the low-lying land because of the low horizon line.

Key View 14

Key View 14 provides representative views of the Rugged solar farm to westbound I-8 motorists. From this location, motorists would be provided partially obstructed middle-ground views of trackers in the southern extent of the project boundary within a natural saddle that occurs between two small hills in the landscape (see Figure 2.1-16). The orientation of Key View 14 directs viewer attention to the north, away from I-8 and towards the project site. Key View 14 is situated at an elevation of approximately 3,450 feet.

As shown in this Key View, north of I-8 the chaparral-covered terrain abruptly drops and transitions to slightly rolling topography supporting moderately dense vegetative cover interspersed with exposed tan soils and rock. Elevated chaparral-covered topography is visible to the west and slowly descends to the northwest creating the first of two small topographical saddles. Small rock outcrops separate the two saddle areas, and vegetation including mounded, low-growing shrubs and taller, spreading oak trees between Key View 14 and the wider topographical saddle is relatively dense. As shown on Figure 2.1-16, oak trees in the foreground to middle-ground distance barely break the northwestly horizon line. With the exception of I-8 and information signage and marker installed along the interstate ROW, the Key View 14 landscape contains very little development.

Impact Analysis

The aesthetic impacts anticipated during construction of the Rugged solar farm would be similar to those previously discussed for the Tierra del Sol solar farm. Also, due to the geographical extent of the viewshed (see Figure 2.1-1), construction activities and effects would be visible to several viewer groups including McCain Valley residents (the majority of which are located west of the Rugged site), several residents located south of I-8 and Old Highway 80 in the Boulevard area, recreationists in the higher elevation areas of the public recreation lands to the north, and motorists on I-8 and project area roadways primarily located north of the interstate. Increased

activity and movement on the Rugged site and on surrounding roadways and the transformation of the existing landscape by vegetation removal and mass grading would produce noticeable visual contrast with the surrounding area. Further, grading and earth-moving activities could generate fugitive dust that could affect the existing views of sensitive receptors in the surrounding area. Construction activities would be experienced daily by residents during the 12-month construction schedule and motorists and recreationists would be afforded views of construction vehicles and equipment as these viewer groups pass through or recreate in the area.

As previously described, **PDF-AE-2** would reduce the visibility of construction equipment by screening staging materials and equipment storage area using temporary screening fences. Temporary fencing installed during construction could partially screen areas of activity from the view of residents, motorists, and recreationists. While fencing could be erected around individual storage areas such that areas are screened from view, the clearing and grading of native vegetation and grazing lands comprising the Rugged solar farm site would be apparent to viewers in the area, and the denuded site would contrast with the surrounding vegetation and terrain of the McCain Valley area.

Once constructed, operation and maintenance of the Rugged solar farm could potentially create visual contrast in form, line, and color that would be evident when viewed from a foreground viewing distance. For example, as viewed from Key View 11, the rectangular form and lightly colored surface of the trackers and the flat form and smooth texture of the graded site would attract the attention of passing motorists and the repetition in form, line and color would create visible contrast with the variable forms and colors of existing vegetation (see Figure 2.1-13). In addition, due to proximity of McCain Valley Road to the Rugged site, repeating tracker rows and the movement of passing cars would create a visual pattern akin to driving alongside orchards or row crops. Also, the vertical scale of trackers would cause these components to break the horizon line (see Figure 2.1-14), and at times throughout the day, modules would create a serrated, broken horizon line that would be incongruent with the existing "soft," slightly curving horizon created by the intersection of vegetated land and sky.

From Key View 12, the Rugged solar farm would be viewed with a highly modified valley in the foreground where trackers, the O&M building, and two water tanks (the O&M building and water tanks are not included in the Figure 2.1-14 visual simulation) would be visible from this viewing location, and the substantial mass and volume across an expanse of valley floor would result in high contrast with its surroundings. In addition, while not depicted on Figure 2.1-14, the 34.5 kV overhead collection cable system (34.5 kV line and steel support structures) would be visible from Key View 12, and these facilities would traverse the landscape from west to east.

The Rugged solar farm components would be mildly discernible when viewed from the middle-ground viewing distance at Key View 11 (see Figure 2.1-13). The scale of development and the

lightly colored surfaces of numerous trackers would create a moderately low visual contrast with the existing site and its surroundings. Due to motorist movement and speed, the form of individual trackers would be difficult to detect, and visibility of the tracker fields edges would be obscured and relatively vague (approximately 40% of the overall trackers would be visible to eastbound I-8 motorists). The Rugged solar farm would constitute a noticeable change from the red, brown, and yellow colors and rough, patchy texture of existing vegetation to light, cool colors and smooth textures of the solar farm in the visible landscape. It would constitute a significant change in the visual setting and character from the view of motorists in Key View 11. However, the change would be somewhat muted by the limited view duration, and distance to solar farm components. In addition, eastbound motorists would view the solar farm in close temporal proximity to the industrial Kumeyaay Wind Farm which would tend to reduce their sensitivity to changes in the existing landscape.

Views of the Rugged site would be available to westbound interstate motorists near the McCain Valley Road overpass and extending in two view windows for 43 seconds followed by an additional 18-second view duration (see Key View 14, Figure 2.1-16). Trackers would appear in a low saddle in the natural topography at a distance from 1.5 miles (background view) to 0.6 mile (foreground view), respectively, as motorists pass through the area. The visual experience of the solar farm project from the 43-second view window and the 18-second view window would be unique due to distance and angle of view. For example, when viewed from the background distance viewing window, visual contrast associated with vegetation removal and grading would be apparent as the southern project boundary would likely be viewed in-line from the interstate and would create noticeable line and color contrast when viewed against surrounding terrain and vegetation. On the other hand, when experienced from the foreground distance-viewing window, the apparent scale of CPV trackers would appear larger and would be framed within the low topographical saddle which would tend to attract the attention of passing motorists.

Overall, the construction, operation, and maintenance of the trackers and ancillary solar farm components would produce strong visual contrast with the existing vegetation and terrain of the McCain Valley. Vegetation removal and grading would create a large, denuded site, and exposed tan soils would be visible against native vegetation and pasture lands. Further, site grading could create new horizontal lines in the landscape demarcating the extent of project disturbance that may be visible to area residents, motorists, and recreationists. Once constructed, the operation of numerous rows of tall trackers in the McCain Valley would create visible contrast in form and color with existing vegetation and rural residential development. As previously described, **PDF-AE-1** would pull back project grading and would avoid the installation of trackers in the low topographical saddle occurring in the southernmost extent of the Rugged solar farm site. With implementation of **PDF-AE-1**, it is anticipated that the Rugged solar farm site would not be visible to westbound interstate motorists. In addition, implementation of **PDF-AE-3** would reduce anticipated color contrast of the O&M building and natural features in the surrounding

landscape. However, even with implementation of these project design features, impacts related to the construction, operation, and maintenance of the Rugged solar farm would remain **potentially significant (AE-R-1)**.

LanEast and LanWest

As stated previously, because sufficient project information, such as details of the location and placement of trackers, is not available for LanEast and LanWest solar farms at this time, a program-level analysis has been prepared. Key views have not yet been selected from which to assess the anticipated visual effects of these solar farms. A general discussion pertaining to potential construction, operation, and maintenance aesthetic impacts is provided below. Similar construction activities, methods and hours of operation, and solar farm technology as previously discussed for the Tierra del Sol and Rugged solar farms is assumed.

Impact Analysis

While construction details for the LanEast and LanWest solar farms is not known at this time, this analysis assumes that similar activities, methods, and hours of operations as described above for the Tierra del Sol and Rugged solar farms would be required. Therefore, construction of the LanEast and LanWest solar farms would result in a temporary influx of personnel, equipment, and vehicles on site and into the Boulevard community, and the increased activity in the community would be noticeable to Boulevard residents, motorists on local area roadways including Old Highway 80 and McCain Valley Road, and eastbound and westbound motorists on I-8 in the immediate vicinity of the sites. Aesthetic impacts anticipated to occur during construction include the physical presence of construction personal and equipment in the area, the visible transformation of the sites resulting from vegetation removal and grading (and the subsequent generation of dust). While construction impacts would be short-term and intermittent, construction activities would occur in close proximity to residents and motorists, and therefore, activities and aesthetic effects would be highly visible to the primary viewer groups in the area. In addition, increased on-site activity during site preparation would entail the introduction of contrasting forms and colors associated with construction equipment and subsequent alteration of the existing color and texture of the sites.

As previously described, **PDF-AE-2** would be implemented during construction and would reduce the visibility of construction areas as viewed from nearby public roads and residences.

Similar to construction impacts, aesthetic impacts resulting from operation and maintenance of the LanEast and LanWest solar farms would primarily be experienced by nearby residents and motorists on local roadways and I-8 in the immediate vicinity. As viewed from these locations, the introduction of rectangular tracker surfaces, tubular and metallic tracker components, and associated solar farm components (components would primarily be located within a foreground

viewing distance from residents and roadways located in the viewshed of the sites) would create visible contrast in form, line, color, and texture with the open pasture; the rugged, short form and green-yellow-red color of existing shrubs; and the tall, spherical form of mature oak trees. In addition, the strong horizontal and vertical lines and smooth textures of solar farm components (i.e., trackers, O&M facilities) would also contrast with the existing semi-natural landscape comprised primarily of rural and desert vegetation.

In addition to trackers and ancillary solar farm facilities, a dedicated 12 kV distribution line supported by wood poles would be installed and would deliver power to the Rebuilt Boulevard Substation. Operation and maintenance of 40-foot tall wood poles adjacent to the LanEast and LanWest sites and alongside Old Highway 80 is not anticipated to substantially degrade the existing visual character of the distribution line corridor as existing wood poles of similar scale, color, and texture supporting telephone cable and low voltage distribution lines are currently located in the vicinity and adjacent to McCain Valley Road and Old Highway 80. In addition, distribution line and telephone cable is currently strung across Old Highway 80 at several locations, and therefore, the crossing of Old Highway 80 by the dedicated 12 kV distribution line in order to interconnect to the Rebuilt Boulevard Substation would not result in strong visual contrast or degradation of visual quality. Therefore, the dedicated 12 kV distribution line is anticipated to result in low visual contrast in the existing landscape.

When viewed from local area roadways, the tall form and scale of trackers would likely obscure views of rock outcrops, oak trees, topography, and other natural features that contribute to the existing visual character of the Boulevard community. Further, as viewed from local area roadways, the project sites display a rural character embodied by undeveloped, mostly flat terrain, upland and wetland vegetation, rock outcrops, post and wire fencing, and visible grazing operations. Proposed development would contrast with the existing character as the sites would be graded, and tall and rectangular trackers would blanket previously undeveloped natural lands and grazing lands. The project sites are also visible from I-8, and while views of the project sites from the westbound travel lanes are partially screened by the slightly elevated eastbound travel lanes, eastbound traffic, and by the vegetation and topography of the interstate median, unobstructed, superior angle views of the sites are available to eastbound interstate motorists as the interstate travels parallel to the proposed LanWest and LanEast project boundaries. From the eastbound travel lanes of I-8, the complete transformation of the sites from mostly undeveloped rural lands supporting limited grazing activities to a seemingly continuous solar energy facility featuring tall, rectangular and dark-colored trackers would be visible and would alter the existing visual character of the project sites. **PDF-AE-2** and **PDF-AE-3** would be implemented to reduce visual impacts to the existing character and quality of the site and surroundings; however, impacts would remain **potentially significant (AE-LE -LW-2).**

Proposed Project

The temporary influx of construction personnel, equipment, and vehicles, increased construction activity including vegetation removal and grading within a primarily rural residential region featuring expanses of chaparral vegetation and pasture areas, the generation of dust, and intermittent nighttime lighting during winter months would result in removal of, or substantial adverse changes to rural landscape features that contribute to the valued visual character of the communities of Boulevard and Tierra del Sol. Construction activities and resulting aesthetic effects would be visible to several viewer groups including motorists on local area roadways and I-8, residents and recreationists on County trails and on public lands managed by the BLM. Due to the largely natural and rural character of the sites and surroundings, construction of the Proposed Project would produce strong visual contrast that would degrade the visual character and quality of the larger Boulevard area. The visual effects of site development (i.e., vegetation removal, grading, etc.) would produce contrasting flat forms, light colors, and smooth textures that would be inharmonious with the surrounding setting.

The alteration of lands in the Boulevard area resulting from operation and maintenance of the Proposed Project would produce strong visual contrast. The Proposed Project includes vegetation removal, grading, and development of over 1,200 acres of land with over 6,000 trackers (trackers are approximately 48 feet across by 30 feet tall), two private collector substations, O&M facilities, two new gen-tie lines (138 kV and 69 kV), and a dedicated 12 kV distribution line. Solar farm development would be visible to area residents, recreationists, and motorists on local area roadways and I-8. A large portion of the McCain Valley would be transformed from an expansive pasture/grazing area to an industrial solar farm exhibiting repeating elements of form, line, color, and texture that would contrast with the existing character of the surrounding McCain Valley area. And while visual contrast would be most apparent when Proposed Project components are viewed from within a foreground viewing distance, contrast in form and color would also be visible when viewed from middle-ground and background viewing distances. Therefore, operation and maintenance of the Proposed Project would introduce features that detract from or contrast with the existing visual character of the Tierra del Sol and Boulevard communities by conflicting with existing visual elements in the landscape.

As previously described, implementation of **PDF-AE-2** would reduce the visibility of construction areas by erecting temporary screening fencing around staging material and equipment storage areas, including storage sites for excavated materials. In addition, implementation of **PDF-AE-3** would help to reduce anticipated visual character and quality impacts associated with the operation and maintenance of the Tierra del Sol, Rugged, LanEast, and LanWest solar farms, but not to a less-than-significant level. Similarly, implementation of

PDF-AE-1 would reduce the individual impacts attributed to the Rugged solar farm and **PDF-AE-4** would reduce the individual impacts attributed to the Tierra del Sol gen-tie alignment regarding visual character and quality of the site and its surroundings. Because the project viewshed limits visibility of the project to an approximate 2-mile radius around the site, composite views of the Tierra del Sol, Rugged, LanEast, and LanWest solar farms would not be available; however, implementation of the solar farm would incrementally contribute to the changing visual character of the greater Boulevard area. Therefore, even with implementation of **PDF-AE-1** through **PDF-AE-4,** impacts associated with the Proposed Project would be **potentially significant** (**AE-PP-2**).

2.1.3.3 Light and Glare

Guidelines for the Determination of Significance

For the purpose of this Program EIR, the CEQA Appendix G Threshold for light and glare was utilized in lieu of the County of San Diego *Guidelines for Determining Significance, Report Format and Content Requirements: Dark Skies and Glare* (County of San Diego 2009) as the lamp type and shielding requirements, operational characteristics of lighting, and reflectivity of project components are discussed within the standard light and glare threshold. Therefore, a significant impact would result if:

a. The project would create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area.

Additionally, the County's *Guidelines for Determining Significance, Report Format and Content Requirements: Dark Skies and Glare* (County of San Diego 2009) applies to the impact analysis. A significant impact would result if:

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

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

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

d. 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.

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

Analysis

The operational characteristics of trackers at the Proposed Project sites would be similar and therefore, the general behavior of the two-axis solar trackers is briefly summarized below.

Under normal operating conditions, the trackers would be engaged in one of three operational cycles: wake procedure, tracking mode, and sleep procedure. During wake procedure, solar trackers would rotate into an east-facing position prior to sunrise. Once the Sun reaches an elevation of 5 degrees, the trackers would follow the Sun until it reaches a vertical position facing west 5 degrees (see Appendix 2.1-3). Throughout the tracking procedure, the position of the tracker would be directly perpendicular to the Sun's rays and in a perfect scenario reflections would bounce directly back to the sun. However, to account for slight deviations in panel tracking movement and surface light scattering, the Boulevard Glare Study assumed a 1 degree light spread from the face of the panel resulting in reflections never lower than 4 degrees off horizon (see Appendix 2.1-3). Once the trackers reach a vertical position facing west 5 degrees the evening sleep procedure would commence. During the sleep procedure trackers would assume a fixed, near-vertical position and would remain in this position until just before sunrise when the wake procedure commences (see Appendix 2.1-3). Trackers would also remain in a near-vertical position when the modules undergo cleaning or maintenance.

Tierra del Sol

Lighting

Construction is anticipated to occur during hours permitted by the County, and therefore, nighttime lighting to accommodate construction activities would not normally be required. However, during autumn and winter months when sunset would occur prior to 7 p.m., lighting during nighttime hours may be required. Although lighting would be briefly operational, nighttime lighting could affect the views of residents in the surrounding area (residents are located in close proximity north and west of the Tierra del Sol site) which is generally devoid of significant nighttime lighting sources. To minimize the potential for significant lighting impacts, all lighting at the site would comply with the County of San Diego Light Pollution Code Section 59.101 et seq. in regards to both general requirements (i.e., use of low-pressure sodium lamps, shielded light fixtures, hours of operation limitations) and lamp type and shielding requirements for Class I and II lighting in Zone B (areas outside of a 15 mile radius centered on the Mount Laguna Observatory). Implementation of M-BI-PP-12 would also minimize potential nighttime construction lighting impacts by restricting the use of lighting adjacent to native habitat.

Class II security and general nighttime lighting for O&M personnel would be installed at the project site. Outdoor lighting would be installed inside the on-site private substation yard to allow for inspection and maintenance that may be required during the evening hours during emergency conditions, next to the entrance door to the substation control house, and mounted atop entrance gates at the primary access point to allow for safe entry. Nighttime activities at the operations and maintenance annex and collector substation would be limited and the lights installed at these facilities for maintenance purposes would be turned off when not in use. In the event that emergency conditions warranted nighttime activities and lighting, impacts would be minimal as all lighting would be less than 100 watts and would be shielded and directed downward. Tracker washing would occur during evening hours when modules are in sleep procedure and facing the eastern horizon and would require temporary illumination of the module surface. Lighting used during the washing process would be transient (trucks would visit each individual module to wash and would not illuminate any one area for a prolonged duration), and lighting would be focused onto the modules as opposed to into the nighttime sky. Compliance with Zone B standards would ensure consistency with the County of San Diego Light Pollution Code and therefore impacts would be less than significant. Although no further action is required, the applicant has agreed to voluntarily implement **PDF-AE-5** which would further minimize the potential for nighttime lighting impacts:

PDF-AE-5 Outdoor lighting at the solar farm site shall conform to County of San Diego Light Pollution Code Zone A standards for lamp type and shielding requirements. More specifically, Zone A standards shall be applicable for all Class I (i.e., lighting for assembly areas where color rendition is important) and Class II (i.e., lighting for general illumination and security) lighting at the solar farm site and all outdoor lighting fixtures shall be fully shielded and directed downward. Further, fully shielded motion sensor lighting shall be installed at the on-site private substation yard, next to the entrance door to the substation control house, and mounted atop entrance gates and shall be turned off when no one is on site. When possible, tracker washing shall occur during evening and morning hours to reduce occurrences of dark sky illumination. Regarding operation of security measures, motion sensor infrared cameras shall be installed at the project site to avoid illumination of the site and surrounding area during nighttime hours.

Therefore, nighttime lighting impacts during construction and operation of the Tierra del Sol solar farm would be **less than significant**.

~~Class II security lighting and general nighttime lighting for O&M personnel would be installed at the project site. Specifically, outdoor lighting would be installed inside the on-site private substation yard to allow for inspection and maintenance that may be required during the evening hours during emergency conditions, next to the entrance door to the substation control house, and~~

~~mounted atop entrance gates at the primary access point to allow for safe entry. Nighttime activities at the operations and maintenance annex and collector substation would be limited, and the lights installed at these facilities for maintenance purposes would typically be turned off when not in use. In the event that emergency conditions warranted nighttime lighting, impacts would be minimal as all light bulbs would be less than 100 watts and would be shielded and directed downward. As stated above, all lighting at the site would comply with the County of San Diego Light Pollution Code Section 59.101 et seq. in regards to both general requirements (i.e., use of low-pressure sodium lamps, shielded light fixtures, hours of operation limitation) and lamp type and shielding requirements for Class II lighting in Zone B (areas outside of a 15-mile radius centered on the Mount Laguna Observatory). Tracker washing would occur during evening hours when modules are in sleep procedure and facing the western horizon and would require temporary illumination of the module surface. Lighting used during the washing process would be transient (trucks would visit each individual module to wash and would not illuminate any one area for a prolonged duration), and lighting would be focused onto the modules as opposed to into the nighttime sky. Therefore, nighttime lighting associated with operational activities at the Tierra del Sol solar farm would be **less than significant**.~~

Glare

The Boulevard Glare Study identified seven residences located within 1 mile of the proposed solar equipment at the Tierra del Sol site as having potential to receive project-generated glare. Two of the identified residences are located west of the solar farm site and the remaining five residences are located to the north. The general location of the identified residences, as well as the approximate distances between residences and solar equipment and the approximate height of the elevated view above the Tierra del Sol site afforded to each residence, is listed below in Table 2.1-6.

In addition to residences located west and north of the Tierra del Sol site, motorists on Tierra del Sol Road would also be afforded views of the site and may receive project-generated glare. Due to distance and glare angle, glare would be almost 2,000 feet up in the air when passing over I-8, and therefore, interstate motorists would not be exposed to project glare. The anticipated glare impacts to residents and motorists are discussed below.

Residents

As shown in Table 2.1-7, residents located west and north of the Tierra del Sol site and within 1 mile of solar equipment would likely receive glare generated by the Tierra del Sol solar farm. Glare reflection heights at a distance of 1 mile from solar equipment are approximately 370 feet above the elevation of solar equipment. Therefore, because the Boulevard Glare Study determined that there are no residences located 370 feet or higher in elevation in comparison to

the project site and solar equipment, the 1-mile distance was used to determine potential recipients of glare in the project vicinity. According to the Boulevard Glare Study, glare would be received throughout the year at two residences located west of the solar farm site and glare exposure would be limited to summer months at five residences located north of the solar farm (See Figure 6c of the Glare Study, Appendix 2.1-3). A worst-case scenario regarding glare received throughout the year at the seven identified residences is provided below. This scenario represents the anticipated daily duration of glare exposure during each season of the year and does not consider potential screening effects associated with existing vegetation.

As shown in Table 2.1-7, the daily duration of glare exposure throughout the year would be 1 hour or less at the two identified residences located west of the solar farm site, and during summer months, the daily duration of glare exposure at the five identified residences located north of the site would be less than 35 minutes. According to the Boulevard Glare Study, glare would not be received at the five identified residences located north of the solar farm during summer, autumn, and winter months. During summer months, project-generated glare would pass over residences located north of the project site as a result of several factors including proximity to trackers and elevation change. The intensity of glare produced by trackers would be lower than that of man-made surfaces (metal roofs, glass, etc.) and water. In addition, the generated reflection values are not considered hazardous to vision (see Appendix 2.1-3). The project would, however, create daytime glare that would be visible from adjacent residential properties and at areas presumably used for private outdoor activities on those properties and therefore, according to the County of San Diego glare significance guidelines, glare impacts would be **potentially significant (AE-TDS-3)**.

Motorists

According to the Boulevard Glare Study, motorists on Tierra Del Sol Road would receive glare throughout the year along the segment of the roadway that abuts the western and northern solar farm boundary. Further, project-generated glare was recorded along this approximate 1-mile segment of the roadway with daily duration not exceeding 2 hours. The anticipated daily duration of glare exposure along Tierra Del Sol Road by season is provided in Table 2.1-8 below.

As shown in Table 2.1-8, the daily duration of glare exposure would be longest during the summer months, and glare would be received on the roadway following sunrise and prior to sunset. Tierra del Sol Road motorists would experience both focus glare (glare received within the 60-degree angle of the cone of vision) and peripheral glare (glare experienced outside of the 60-degree angle of the cone of vision) as they pass the project site. For example, during summer, focus glare would be received by motorists following sunrise and during the last hour leading up to sunset (see Appendix 2.1-3 for approximate times during which motorists would receive glare). Throughout the remainder of the year, peripheral glare would be received by motorists passing the solar farm farm site and would be less pronounced than focal glare.

Further, during spring, fall, and winter months, the daily duration of glare exposure would be 40 minutes or less (daily exposure during winter would be 26 minutes or less) and glare would be received by eastbound Tierra del Sol Road motorists approaching the project site prior to sunset. Although the generated glare reflection values are not considered hazardous to vision, the project would create daytime glare that would be visible from a nearby local public roadways. Therefore, according to the County of San Diego glare significance guidelines, impacts would be **potentially significant (AE-TDS-4)**.

Rugged

Lighting

The construction and operational lighting associated with the Rugged solar farm would be similar to that discussed above for the Tierra del Sol solar farm. Nighttime lighting may be required for construction activities occurring in autumn and winter months when sunset would occur prior to 7 p.m.; however, all lighting would comply with the County of San Diego Light Pollution Code Section 59.101 et seq. in regards to both general requirements and lamp type and shielding requirements for Class I and II lighting in Zone A (areas inside of a 15-mile radius centered on the Mount Laguna Observatory). Implementation of M~~M~~-BI~~O~~-PP-12 would also minimize potential nighttime construction lighting impacts by restricting the use of lighting adjacent to native habitat. Therefore, during construction of the Rugged solar farm, nighttime lighting impacts would be **less than significant**.

Class II security lighting and general nighttime lighting would be installed at the on-site private substation yard, next to the entrance door to the substation control house, and at site access gates during the operational phase of the Rugged solar farm. Class I lighting for repair areas may also be installed on the project site. All outdoor lighting would comply with the County of San Diego Light Pollution Code Section 59.101 et seq. In addition, implementation of **PDF-AE-5** including ~~,~~the installation of outdoor fully shielded motion sensor lighting at project facilities, limiting tracker washing to evening and morning hours when possible, installation of motion sensor infrared security cameras and implementation of other measures would ensure that~~and would be shielded and directed downward (lighting would also comply with the general requirements of the Light Pollution Code). Lastly, lighting used during tracker washing would be transient (trucks would visit each individual module to wash and would not illuminate any one area for a prolonged duration) and lighting would be focused onto the modules as opposed to into the nighttime sky. Therefore,~~ nighttime lighting associated with operational activities at the ~~Tierra del Sol~~Rugged solar farm would be **less than significant**.

Glare

The Boulevard Glare Study identified five residences located within 1 mile of the proposed solar equipment at the Rugged site as having potential to receive project-generated glare (see Appendix 2.1-3). All five residences are located between Ribbonwood Road and the westernmost portion of the solar farm (see Figure 6a of the Glare Study, Appendix 2.1-3). Additional residences to the west are located within 1 mile of solar equipment; however, they would not receive glare as a result of distance and/or terrain obstruction. More specifically, as distance from the project site increases, so does the elevation of glare that would pass above a given residence, and in this instance, project-generated glare would pass over several residences located to the west.

The general location of the identified residences having potential to receive project-generated glare, as well as the approximate distance between residences and solar equipment and the approximate height of the elevated view above the Rugged site afforded to each residence, is listed below in Table 2.1-9.

In addition to residents, recreationists on nearby public lands and motorists on McCain Valley Road and Ribbonwood Road would also be afforded views of the Rugged site and may receive project-generated glare. According to the Boulevard Glare Study, glare passes over I-8 in the evening hours due to the distance from the project site and the trajectory of glare rising as it gets farther away from its source. As such, glare is not anticipated to be received by motorists on I-8. The anticipated glare impacts to residents, recreationists, and motorists is discussed below.

Residents

As shown in Table 2.1-9, residents located west of the Rugged site and within 1 mile of solar equipment would likely receive glare generated by the Rugged solar farm. According to the Boulevard Glare Study, noticeable glare would be received by five residences located directly west of the Rugged site (more specifically, west of the Vista Oaks property and east of Ribbonwood Road) during the hour leading up to sunset with duration of daily glare exposure less than 45 minutes (Appendix 2.1-3). Two of the five residences (Residences 3 through 4) would receive glare throughout the year and the remaining three residences (Residences 1, 2 and 5) would receive glare seasonally. Table 2.1-10 presents a worst-case glare scenario for the five identified residences throughout the year and represents the anticipated daily duration of glare exposure during each season.

As shown in Table 2.1-10, the duration of glare throughout the year would be relatively brief. During the spring, summer, and autumn months, the average daily duration of glare exposure at Residences 1, 2, 3, and 4 would be less than 35 minutes, and Residence 5 would not be exposed to glare during these seasons. During the winter months, the average daily duration of the glare exposure at

Residences 3, 4, and 5 would be less than 45 minutes, and Residences 1 and 2 would not be exposed to glare during this season. While the intensity of glare produced by CPV modules would be lower than that of glare produced by man-made surfaces (metal roofs, glass etc.) and water and the generated reflection values are not considered hazardous to vision (see Appendix 2.1-3), the project would create daytime glare that would be received at five residences located directly west of the Rugged site. Therefore, according to the County of San Diego glare significance guidelines, impacts would be **potentially significant (AE-R-2).**

Recreationists

At sunrise, glare generated by the Rugged solar farm would be most pronounced on the eastern horizon when trackers would be oriented towards the rising sun. The BLM-managed Sacatone Overlook is located approximately 2 miles east of the Rugged site, and reflected light from trackers would not likely be visible to recreationists at the overlook due to intervening mountainous topography associated with the southern extent of the In-Ko-Pah Mountains (see Figure 2.1-1, Project Viewshed Map). In addition, the valued focal point/panoramic vista from the overlook is to the east which includes foreground views of the Jacumba Mountains, middle-ground views of the Colorado Desert, and background views of the Imperial Valley. Project-generated glare may be received by recreationists atop the Mt. Tule summit (elevation of approximately 1,416 feet); however, as discussed in Section 2.1.3.1, views from Mt. Tule are panoramic in nature and the lack of trailhead or parking area signage for summit trails, and the generally rough/poor condition of the narrow, dirt road leading towards the base of Mt. Tule from McCain Valley Road suggests the summit (and trails) are not widely used by recreationists. As such, glare-related affects to recreationists are not anticipated to be substantial.

Motorists

According to the Boulevard Glare Study, motorists on Ribbonwood Road and McCain Valley Road would receive glare as they travel along these roadways during the hour prior to sunset. Motorists on McCain Valley Road would not receive glare in the early morning hours following sunrise because trackers would be angled towards the eastern horizon line (i.e., the In-Ko-Pah Mountains), and generated glare would pass over the roadway. No glare is anticipated to be received by motorists on I-8 as a result of proximity to solar equipment, elevation and orientation of trackers, and screening provided by intervening terrain. On Ribbonwood Road, glare would be received along a 0.5-mile segment of the roadway (milemarker 1.2-1.7) as measured south from the intersection of Opalocka Road and McCain Valley Road; glare would also be received along a 0.2-mile segment of Ribbonwood Road (milemarker 1.4-1.6) located adjacent to the easternmost portion of the solar farm site (i.e., the Waterstone property). The anticipated daily duration of glare exposure along Ribbonwood Road and McCain Valley Road by season is provided in Table 2.1-11.

As shown in Table 2.1-11, glare would be received throughout the year by motorists on Ribbonwood Road over an approximate 0.5-mile segment of the road. As stated previously, the daily duration of glare exposure throughout the year would be no more than 40 minutes a day, and because the solar farm would be located east of Ribbonwood Road, project-generated glare would be received in the peripheral field of vision of passing motorists. Further, assuming a travel speed of 35 miles per hour, passing motorists would receive glare for a duration of less than 1 minute, and glare may be periodically screened by intervening terrain and roadside vegetation. On McCain Valley Road, motorists would also receive glare in their peripheral field of vision along an approximate 0.2-mile segment of the road as they pass the easternmost portion of the solar farm during spring and fall months prior to sunset. Assuming a travel speed of 35 miles per hour, the duration of glare exposure on McCain Valley Road would be brief (approximately 20 seconds). While the duration of glare exposure would be brief, and glare would be received in the peripheral field of vision of passing motorists on Ribbonwood Road and McCain Valley Road, the project would create daytime glare that would be visible from nearby local public roadways. Therefore, according to the significance guidelines established by the County of San Diego, potential glare impacts to motorists would be **potentially significant (AE-R-3).**

LanEast and LanWest

Lighting

Similar construction lighting impacts as previously discussed for the Tierra del Sol and Rugged solar farms would be anticipated to occur at the LanEast and LanWest sites. Construction activities would comply with the County hours of operations, and therefore, during autumn and winter months use of nighttime lighting may be required as sunset would occur prior to the 7 p.m. nighttime construction operational limit. Class II security lighting would be installed at several project facilities for safe nighttime entry and would be turned off when not in use. All lighting would comply with the County of San Diego Light Pollution Code Section 59.101 et seq., and with implementation of **PDF-AE-5**, lighting impacts associated with construction and operation of the LanEast and LanWest solar farms would be ~~in regards to both general requirements and lamp type and shielding requirements for Class II lighting in Zone B (areas outside of a 15-mile radius centered on the Mount Laguna Observatory). Class II security lighting would be installed at several project facilities for safe nighttime entry but maintenance lighting would only be turned on if needed. As with construction lighting, all operational lighting would comply with the County of San Diego Light Pollution Code Section 59.101 et seq. and would be shielded and directed downward so as to minimize light trespass onto surrounding properties. Lastly, lighting required to wash trackers at night would be transient and directed onto trackers surface (as opposed to the nighttime sky). Therefore, lighting impacts associated with construction and operation of the LanEast and LanWest solar farms would be~~ **less than significant**.

Glare

Residents

During operations of the LanEast and LanWest solar farms project-generated glare would be received by existing residences located southwest of the project sites and motorists on I-8, Old Highway 80, and McCain Valley Road. Glare may also be received by recreationists on higher elevation terrain to the northeast of the project sites including the summit of Mt. Tule. As shown on Table 2.1-12, residences located southwest of the solar farm sites and within 1 mile of solar farm equipment could potentially receive glare generated by the LanEast and LanWest solar farms. More specifically, residences within approximate 2,500 feet of solar equipment and afforded superior viewing angles to the solar farm sites would potentially receive glare. According to the Boulevard Glare Study, glare would be received by four residences located southwest of the solar farm sites (and south of Old Highway 80) during winter months in the hour leading up to sunset with duration of daily glare exposure less than 35 minutes (Appendix 2.1-3). Glare would not be received at the four residences during spring, summer, or autumn (Appendix 2.1-3). In addition to off-site residences, the Boulevard Glare Study identifies two existing residences on the LanEast project site that would receive glare. Table 2.1-13 presents a worst-case glare scenario for the residences throughout the year and represents the anticipated daily duration of glare exposure during each season.

Recreationists

As discussed in Section 2.1.3.1, the LanEast and LanWest solar farms may be visible from prominent ridgelines located south of Tule Canyon (east of Tule Lake); however, there are no established trails to these possible viewpoints generally located within the southern extent of the BLM-managed Carrizo Gorge Wilderness. Therefore, because access to the area is limited, recreational usage is assumed to be low/limited, and impacts would be **less than significant**. Project-generated glare may be received by recreationists atop the Mt. Tule summit; however, views from Mt. Tule are panoramic in nature and the lack of trailhead or parking area signage for summit trails, and the generally rough/poor condition of the narrow, dirt road leading towards the base of Mt. Tule from McCain Valley Road suggests the summit (and trails) are not widely used by recreationists. As such, glare-related affects to recreationists are not anticipated to be substantial.

Motorists

As stated earlier, motorists on I-8, Old Highway 80, and McCain Valley Road would receive glare generated by the LanEast and LanWest solar farms. On I-8, motorists on an approximate 2-mile segment of the interstate (see Appendix 2.1-3 for applicable milemaker locations) would receive glare during spring, summer, and autumn months. According to the Boulevard Glare

Study, daily exposure of glare on interstate travel lanes is not anticipated to exceed 10 minutes of focal glare during spring, 70 minutes of focal and peripheral glare during summer, and 10 minutes of focal glare during autumn. Further, with the exception of afternoon glare received by motorists during summer months, glare would primarily be received by motorists in the morning hour following sunrise. On Old Highway 80, motorists on an approximate 1-mile segment of the highway (see Appendix 2.1-3 for applicable milemaker locations) would intermittently receive focal glare during spring and autumn and peripheral glare during winter months. Glare exposure on Old Highway 80 would generally occur over 0.1-mile segments of the roadway, and daily exposure would not exceed 35 minutes during spring and fall and 60 minutes during winter. Lastly, on an approximate 0.3-mile segment of McCain Valley Road, motorists would receive morning and afternoon peripheral glare during spring, summer, autumn, and winter months. During spring, daily glare exposure on McCain Valley Road would not exceed 80 minutes, and during summer, daily glare exposure would not exceed 125 minutes. Daily autumn and winter glare exposure would not exceed 80 and 89 minutes, respectively.

~~Because a conceptual site layout was used to conceptualize potential glare impacts that may occur during operation of the LanEast and LanWest solar farms, the~~ The following PDF ~~would be implemented~~is provided to reduce anticipated glare impacts that may occur during operation of the LanEast and LanWest solar farms:

PDF-AE-~~5~~6 A Glare Study utilizing project-level information shall be prepared and approved by the County Department of Planning and Development Services (DPS) for the LanEast and LanWest solar farms. The glare study shall consider potential effects to sensitive receptors in the area including residents, recreationists, and motorists on Interstate 8, Old Highway 80, and McCain Valley Road. If potential visual resource impacts associated with project-generated glare are identified, then measures such as landscape screening and/or increased setbacks shall be ~~identified~~ required to reduce impacts.

Although the glare generated by trackers is not anticipated to result in hazardous conditions for nearby residents, trackers at the LanEast and LanWest sites would create daytime glare that would be visible from adjacent properties where private outdoor activities may occur. In addition, glare would be visible from McCain Valley Road (an unclassified two-lane road serving local residents), Old Highway 80 (a two-lane Light Collector with average daily traffic volumes of approximately 1,000 vehicles) and I-8 (a four lane regional interstate) near the project site. Therefore, based on the County of San Diego significance guidelines concerning glare and because there is no guarantee at this time that measures implemented as part of **PDF-AE-6** would reduce impacts to a level less than significant, ~~even with implementation of **PDF-AE-5,**~~ potential glare impacts to residents and motorists would be **potentially significant (AE-LE-LW-3)**.

Proposed Project

Lighting

Construction activities of the Proposed Project would occur during an 8-hour period between ~~be limited to those~~ the hours and on the days permitted by the County of San Diego (Monday through Saturday, 7 a.m. to 7 p.m.) and therefore, throughout much of the year, new sources of nighttime lighting are not anticipated during construction. However, construction of the Proposed Project would entail construction schedules in excess of 12 months, and therefore, construction activities occurring during autumn and winter months could require the use of lighting after sunset and up to the 7 p.m. Construction lighting would not however result substantial lighting of the nighttime sky that would result in degraded nighttime views as lighting would be limited to several hours immediately following sunset, and lighting would be focused downward onto the Proposed Project sites. In addition, all lighting would comply with the County of San Diego Light Pollution Code Section 59.101 et seq. in regards to both general requirements and lamp type and shielding requirements for Class II lighting. Also, implementation of **M-BI-PP-12** (see Section 2.3, Biological Resources) and **PDF-AE-5** would further reduce potentially impacts associated with nighttime lighting. Therefore, the use of lighting during construction of the Proposed Project would not substantially affect nighttime views in the area, and impacts would be **less than significant**.

Operational lighting scenarios at the Proposed Project sites would be similar. Lighting would be installed inside the substation yard and outside the substation control house (at the Tierra del Sol and Rugged sites), and atop entrance gates at access points (at all Proposed Project sites) to allow for safe entry. Since maintenance activities are not anticipated to be completed during the evening hours, lights would only be turned on if needed. All lighting associated with operation of and maintenance of the Proposed Project would comply with the County of San Diego Light Pollution Code Section 59.101 and would be shielded and directed downward so as to minimize light trespass onto surrounding properties and illumination of the nighttime sky. Lighting required to facilitate nighttime washing of trackers would be transient and directed onto trackers and would not substantially affect nighttime views in the surrounding area. Therefore, lighting impacts associated with operation of the Proposed Project would be **less than significant.**

Glare

As stated above, the operation of trackers would produce glare. However, the severity of glare impacts would be determined by the angle of reflected glare and glare reflection height. Glare produced by the Tierra del Sol solar farm would be received by seven residences and by motorists on Tierra del Sol Road in the immediate vicinity of the project site. Glare produced by the Rugged solar farm would be received by five residences located directly west of the Rugged site and by

motorists on segments of Ribbonwood Road and McCain Valley Road. While the daily duration of glare exposure would be relatively brief, and the generated reflection values of flare produced by trackers are not considered hazardous to vision, the Tierra del Sol and Rugged solar farms would create daytime glare that would be visible from adjacent properties and nearby local two-lane roadways. Although project-level information has not been developed at this time, glare generated during operation of the LanEast and LanWest solar farms would likely be received at four nearby residences and on local and regional roadways including McCain Valley Road, Old Highway 80, and I-8. Therefore, for purposes of this analysis, glare impacts associated with operation of the Proposed Project would be **potentially significant (AE-PP-3)**.

2.1.4 Cumulative Impact Analysis

Geographic Extent

For purposes of this cumulative impact analysis, the Boulevard Subregional Plan Area will be used as the physical boundary from which to determine cumulative visual effects. Use of the subregional group area is appropriate given the type and extent of the Proposed Project's visual impacts and given the nature of the local topography which generally limits the extent of the individual viewsheds of the Tierra del Sol, Rugged, LanEast, and LanWest solar farms (the Tecate Divide and the In-Ko-Pah Mountains effectively limit the extent of off-site views outside of the Subregional Group Area). In addition, this cumulative boundary is appropriate and was selected as it would include projects that would have the potential to change the visual character of the Boulevard and Tierra del Sol communities.

The impacts of an individual project may be cumulatively considerable when added to those of other closely related past, present, and reasonable foreseeable future projects. The term "reasonably foreseeable" refers to projects that federal, state, or local agency representatives have knowledge of either from pre-application meetings or from the formal application process. The projects in the cumulative scenario are primarily renewable energy generation projects (similar to the Proposed Project); however, several communication towers, as well as the Boulevard U.S. Customs and Border Protection Station and Boulevard Fire Station, are also considered.

2.1.4.1 Scenic Vistas

Although man-made elements (i.e., rural residences, transportation facilities, and regional and local electrical infrastructure) are present, the existing project area landscape is primarily natural in character and is comprised of gently rolling hills juxtaposed against rugged, steep mountainous terrain, exposed granitic boulders, and chaparral dotted lands. Panoramic vistas and long, scenic views are generally available to passing motorists on I-8, public local roadways, and from public BLM-managed lands in the McCain Valley. As stated above in Section 2.1.3.1, with the exception of the Tierra del Sol solar farm, the Proposed Project would be visible from I-8 and

from limited areas within BLM-managed public lands in McCain Valley, and all projects would be visible from various public roadways. Scenic vista impacts associated with the Proposed Project would generally occur along roadways from which solar farm development would be viewed as a prominent visual element in the landscape such that they would be difficult to ignore and would substantially obstruct or interrupt the broad, horizontal composition of existing available views.

Renewable energy development planned in the cumulative study area would result in the introduction of numerous and prominent industrial elements to the McCain Valley area landscape. Several wind energy development projects including the Tule, Manzanita, and EGP Jewel Valley Wind Energy projects are proposed and would be located atop prominent ridgelines visible from I-8, local public roadways, and from BLM-managed lands in the McCain Valley. From these elevated locations, the tall form, bold line, and white color associated with wind turbine towers (as well as movement associated with rotors) would be sky-lined, thereby partially defining the horizon from viewing locations at an inferior viewing angle. In addition, due to the tall, vertical form and visual prominence of wind turbines, the individual viewsheds of the wind energy development in the area would likely overlap and would envelop the visual experience along several segments of the interstate and public roadways (including eligible state scenic highways and facilities included within the County Scenic Highway System). In addition, the viewsheds of the Tule, Manzanita and the existing Kumeyaay wind energy facility would likely overlap with the viewshed of the Rugged solar farm and would create a visual environment in McCain Valley in which views of renewable energy development would be constant and difficult to avoid. The sheer volume of wind turbines, trackers, gen-tie lines, ancillary facilities, reflective surfaces, and mechanical moving components would obstruct, interrupt and detract from existing panoramic vistas and long, scenic views available to motorists on public roads, eligible state scenic highways, and roadways included in the County Scenic Highway System (i.e., I-8, SR-94, and Old Highway 80), and from public BLM-managed lands in the McCain Valley area, resulting in a **potentially significant cumulative impact**. Components of the Proposed Project, including large areas of CPV trackers, mass grading, and vegetation removal, would have a **significant cumulative contribution** to the detraction and interruption of available focal points and panoramic views from I-8 and Old Highway 80 **(AE-CUM-PP-1)**.

2.1.4.2 Visual Character or Quality

While the Major Use Permit for the Tule Wind project was granted in August 2012, subsequent project delays and the typical duration of construction activities normally associated with wind farm development (up to and routinely exceeding 12 months) warrant the consideration of this project in the cumulative analysis of short-term construction impacts to visual resources. Although detailed project information is not yet known, the Manzanita Wind Energy project would be located in the McCain Valley area, and therefore, it is also considered in the

cumulative analysis. The closed status of the EGP Jewel Valley project suggests that this project would likely not be in construction coincidentally with the wind projects discussed above and the Proposed Project, and therefore, it is not discussed further in this section. If construction schedules were to overlap, composite views of the construction activities of three wind projects and the Proposed Project could be available within the I-8 viewshed (activity would be visible north and south of I-8) and from local area roadways, and the influx of construction personnel, equipment and vehicles on project sites would be readily apparent. In addition, the resulting effect of necessary vegetation removal for site preparation and subsequent grading would produce noticeable visual contrast in form, line, and color with surrounding natural vegetation, large granitic boulders, and the gently rolling topography of the McCain Valley area. While the presence of road cuts and elevated berms adjacent to I-8 would obscure views of less visually prominent features in the landscape (i.e., trackers), wind farm development would be situated adjacent to the interstate and the tall, tubular form of wind turbine towers would create bold, dominant forms in the landscape. Assuming construction activities occur during the same time frame, renewable energy development would be visible for an approximate 5.5-mile segment of I-8 (from the Tecate Divide to Walker Canyon), and assuming travel speeds of 70 miles per hour, renewable energy development would remain in the I-8 corridor viewshed for approximately 5 minutes. While the full extent of short-term visual impacts occurring on all renewable energy project sites would not be visible from individual sites comprising the Proposed Project, given the primarily natural appearance of the McCain Valley and Boulevard area and given the presence of the Rugged, LanEast, and LanWest sites in the I-8 corridor viewshed, the Proposed Project **would contribute to a cumulatively considerable impact (AE-CUM-PP-2)**.

In addition to the Proposed Project, the Tule Wind and Manzanita Wind Energy projects express bold, vertical forms and lines, smooth metallic textures, and bright colors that would be at odds with the rural residential scale and character of the surrounding area. Once constructed, these projects would alter the existing rural character and would increase the prominence of industrial components in the landscape. Further, as the viewshed becomes increasingly industrial and decreasingly rural, the existing visual quality would be degraded by the addition of numerous CPV trackers and wind turbines. Visual contrast with existing conditions would increase as the form, line, color, and texture which, due their vertical profile, would detract from and comprise a collectively wide viewshed. Overall, the Proposed Project's contribution to long-term visual contrast would be significant because the Proposed Project would trigger a fundamental shift in the existing visual character and quality of the area. Therefore, the Proposed Project **would contribute to a cumulatively considerable impact (AE-CUM-PP-2).**

2.1.4.3 Light and Glare

As stated in Section 2.1.3.1, construction of the Proposed Project ~~is anticipated to~~ would occur during hours permitted by the County of San Diego, and therefore, during autumn and winter

months when sunset would occur prior to 7 p.m. (construction activities are permitted between 7 a.m. and 7 p.m., Monday to Saturday by the County), nighttime lighting may be required. In addition, operation of the Proposed Project would entail the installation of security and maintenance lighting for select solar farm project components which, with the exception of security lighting, would normally be turned off during nighttime hours when not in use. All lighting at the sites would comply with the County of San Diego Light Pollution Code Section 59.101 et seq. in regards to both general requirements (i.e., use of low-pressure sodium lamps, shielded light fixtures, hours of operation limitations) and lamp type and shielding requirements for Class II lighting the appropriate Zone area. Implementation of **M-BI-PP-12** (see Section 2.3, Biological Resources) would also minimize night construction lighting adjacent to native habitats by requiring that only minimal, low-illumination lighting necessary for personnel safety be utilized in these areas (**M-BI-PP-12** addresses impacts to wildlife and native habitat; however, the restriction of night lighting resulting from this measure would also address potential aesthetics impacts to residents). Voluntary implementation of **PDF-AE-5** would further minimize the potential for nighttime lighting impacts through adherence to the more restrictive County of San Diego Light Pollution Code Zone A standards at all solar farm sites and installation of fully shielded and downward directed outdoor lighting fixtures and motion sensor lighting. In addition, **PDF-AE-5** entails the implementation of other measures designed to avoid unnecessary illumination of the nighttime sky. Therefore, through compliance with existing regulations and with implementation of **M-BI-PP-12** and **PDF-AE-5**, lighting impacts during construction and operation of the Proposed Project would be **less than significant**.

New sources of lighting at both the Proposed Project substation and O&M facilities and at similar facilities associated with planned renewable energy development in the cumulative study area would be added to the project area; however, compliance with the shielding and lamp type requirements of the County of San Diego Light Pollution Code would limit the extent of nighttime lighting effects and would render impacts less than significant. In addition, compliance with County of San Diego construction activity hours of operation would minimize the need for nighttime lighting, however, lighting may be required during select seasons. Impacts associated with nighttime construction lighting are anticipated to be less than significant due to the temporary nature of construction activities, the brief time frame during which nighttime lighting could potentially be required, and because projects would be required to comply with the County Light Pollution Code in regards to the shielding and lamp type requirements. As such, construction lighting impacts during nighttime hours is not anticipated to result significant visual impacts; therefore, the Proposed Project would **not contribute to a significant cumulative impact**.

Pursuant to Federal Aviation Administration obstruction marking and lighting regulations, renewable wind energy projects including the Tule Wind and Manzanita Wind Energy projects would require the installation of red or white obstruction light systems atop turbine towers that would flash during nighttime hours to increase conspicuity of towers to aircraft. Turbine

obstruction lighting would represent a constant new source of nighttime lighting in the cumulative geographic extent; however, CPV trackers and associated facilities of the Proposed Project would not be subject to Federal Aviation Administration obstruction marking and lighting requirements. Therefore, the Proposed Project would not contribute to this potential cumulative impact associated with nighttime lighting.

As stated previously in Section 2.1.3.4, the potential glare effects associated with the Proposed Project would primarily be limited to the reflectivity of inbound light off trackers. This potential source of glare is unique to renewable solar energy development and according to the Boulevard Glare Study, glare effects to residences and motorists would be localized to a distance of one mile from the Proposed Project sites. Beyond one mile, reflections from trackers would project high enough above the terrain to avoid KOPs within the study area (see Appendix 2.1-3). In addition, as ~~because~~ there are no solar renewable energy projects ~~considered in the~~within the cumulative ~~scenario~~ study area for aesthetic impacts, no other projects would generate similar glare impacts as the Proposed Project. Cumulative renewable energy projects would, however, include private substations, O&M facilities, and overhead transmission infrastructure that could employ reflective surfaces, components, and building materials. The resulting visual contrast between project facilities and the surrounding rural landscape setting could be noticeable and strong; however, similar to the Proposed Project, projects considered in the cumulative scenario would be expected to consider treatment of structures (i.e., use of earth-tone paints and stains, use of cor-ten steel, treating wood for self-weathering, selecting paint finishes and building materials with low levels of reflectivity, etc.) and use of nonspecular conductors to minimize structure and component contrast. Structure treatment is considered an appropriate design consideration and mitigation measure by the County of San Diego and the general treatments discussed above are standard considerations according to the County. Therefore, with implementation of standard design considerations and mitigation measures, the Proposed Project and projects considered in the cumulative scenario **would not result in a cumulative impact** associated with glare.

2.1.5 Significance of Impacts Prior to Mitigation

Scenic Vistas

No impacts to scenic resources within the viewshed of a designated state scenic highway system would occur (there are no designated state scenic highways located in the composite viewshed of the Proposed Project); however, I-8 is an eligible state scenic highway, and both I-8 and Old Highway 80 are included in the County Scenic Highway System. Therefore, any impacts to valued focal and/or panoramic vistas along these routes could be potentially significant. The Tierra del Sol solar farm and gen-tie alignment would result in **less-than-significant** impacts to valued focal and/or panoramic vistas from I-8 and Old Highway 80. With incorporation of **PDF-AE-1**, the Rugged solar farm would result in **less–than-significant**

impacts to valued focal and/or panoramic vistas from I-8 and Old Highway 80. Because LanEast and LanWest would be located adjacent to and within the foreground of views from I-8 and Old Highway 80, implementation of the LanEast and LanWest solar farms could result in **potentially significant** impacts to valued focal and/or panoramic vistas available from I-8 and Old Highway 80 (**AE-LE-LW-1, AE-PP-1, and AE-CUM-PP-1**).

Visual Character or Quality

Operation of the Proposed Project, including the Tierra del Sol, Rugged, LanEast, and LanWest solar farms would result in a **potentially significant** impact due to the removal or substantial adverse change in one or more features that contribute to the valued visual character of the community, and from the introduction of features that detract from or contrast with the existing visual character of the community (**AE-TDS-1, AE-TDS-2, AE-R-1, AE-LE-LW-2, AE-PP-2, and AE-CUM-PP-2**).

Light and Glare

Construction and operation of the Proposed Project would not generate substantial new sources of light and therefore, potential impacts would be **less than significant**. Operation of the Proposed Project ~~, including the Tierra del Sol, Rugged, LanEast, and LanWest solar farms,~~ would create daytime glare that would be visible from adjacent properties and nearby local and regional roadways. Therefore, implementation of the Proposed Project would result in **potentially significant impacts (AE-TDS-3, AE-TDS-4, AE-R-2, AE-R-3, AE-LE-LW-3, AE-PP-3)** associated with glare.

2.1.6 Mitigation Measures

The following mitigation measure is required to reduce potential impacts associated with the Proposed Project.

2.1.6.1 Scenic Vistas

Due to the proximity of the LanEast and LanWest sites to I-8 and Old Highway 80, views of trackers would dominate the visual environment of motorists on these roadways near McCain Valley Road. In addition, the vertical, prominent form and dark color of trackers sprawled across the sites would obstruct and interrupt long, distant views available from the roadways and could create new serrated horizon lines. The LanEast and LanWest solar farms could result in a potentially significant impact to scenic vistas; therefore, Mitigation Measure **M-AE-PP-1** is provided.

M-AE-PP-1 The applicant shall install landscape screens as specified in Appendix 2.1-4, Landscape Screening Design for the Soitec Solar Development Program EIR. Features of the solar facility to be screened include the 50-foot-wide fire buffer

with 6-foot-tall perimeter fence, concentrator photovoltaic (CPV) solar panels, and other associated features that exceed the height of the fencing installed around the perimeter of the solar facility.

The applicant shall also be responsible for continued maintenance of the landscape screens, including installation and maintenance of a drip irrigation system and implementation of and consistency with plant installation and maintenance standards identified in the Landscape Screening Design report. Periodic monitoring and reporting to observe and assess the maintenance regime and implementation of appropriate measures to promote plant survival, growth, overall health, and vigor shall also be required. If necessary, adaptive measures shall be implemented in the subsequent spring season to address project deficiencies as they relate to the desired landscape screening effect. Additional details regarding recommended plants and materials for landscape screens, project-specific designs, irrigation systems, water demand calculations, and maintenance and monitoring activities are included in the Landscape Screening Design Report.

2.1.6.2 Visual Character or Quality

The Proposed Project would entail the construction of four solar farms (Tierra del Sol (including both the solar farm and the gen-tie alignment), Rugged, LanEast, and LanWest) that would have significant adverse effects on the existing rural and primarily natural visual character and quality of the individual solar farms sites and the surrounding Boulevard community. Potential impacts to visual character and quality would be reduced through implementation of Mitigation Measure **M-AE-PP-1**.

Mitigation measures to further reduce the anticipated visual contrast associated with operation of the Tierra del Sol solar farms were considered but determined to be infeasible. Minor site grading at the Tierra del Sol site could be implemented to reduce the stature of individual trackers relative to surrounding ground elevations in select locations however, this selective approach would create additional impacts associated with hydrology and water quality and would affect access to trackers. In addition, this approach would entail greater construction impacts due to a longer overall construction schedule. Triangular spacing of CPV trackers in select areas was identified as a design measure that could be employed to eliminate the visual effect of continuous CPV rows however, clustering of trackers along the project boundaries would largely be screened from view by off-site motorists by landscape screens. The installation of oak trees within the non-developed portions of the central and western subareas of the Rugged site could reduce the apparent mass and scale of the project and the anticipated visual contrast between project components and natural vegetation when viewed from off-site locations. However, the incorporation of additional vegetation in these

areas would conflict with required fire buffers and would entail impacts to sensitive habitat lands and potentially, jurisdictional resources.

Mitigation measures to reduce the visual contrast associated with new transmission poles and the background desert sky were considered but determined to be infeasible. The application of color treatments or the selection of other materials for gen-tie structures would not decrease the resulting contrast in form, the visibility of the components, or the resulting overall visual contrast. The color of the sky is regularly subject to change due to the localized weather conditions, the presence of clouds, and other variables. The application of a single static color treatment would be unable to respond to changes in landscape as they relate to the color of the sky and therefore, additional measures that may decrease the anticipated level of visual contrast were not included.

2.1.6.3 Light and Glare

The Proposed Project would entail the operation of four solar farms (Tierra del Sol (including both the solar farm and the gen-tie alignment), Rugged, LanEast, and LanWest) that would create daytime glare visible from adjacent properties and nearby local roadways. In addition, the LanEast and LanWest solar farms would create daytime glare visible from regional roadways including Old Highway 80 and I-8. Potential impacts associated with new sources of daytime glare would be slightly reduced through implementation of Mitigation Measure **M-AE-PP-1** but the installation of landscape screens would be incapable of fully screening glare exposure at nearby properties and roadways. Additional landscape screening and increased property line setbacks to further screen and/or obscure views of the solar facilities were considered however, as discussed in the landscape screen design report (Appendix 2.1-4), complete screening of views from public viewpoints to the proposed solar facilities is not possible due to the plant density limitation required to achieve wildfire protection standards. As such, no additional mitigation measures were identified that would further reduce anticipated glare impacts.

2.1.7 Conclusion

The following discussion provides a synopsis of the conclusion reached in each of the above impact analyses and the level of impact that would occur after mitigation measures are implemented.

Scenic Vistas

Implementation of the Tierra del Sol solar farm and gen-tie alignment and the Rugged solar farm would result in less-than-significant impacts to valued focal and/or panoramic vistas.

Due the proximity of the LanEast and LanWest sites to I-8, McCain Valley Road, and Old Highway 80, and the superior viewing location afforded to interstate motorists, views of trackers would dominate the visual environment and could obstruct and interrupt long, distant views and

create new serrated horizon lines. Mitigation Measure **M-AE-PP-1** has been identified for these sites; however, direct and cumulative impacts to scenic and panoramic vistas as a result of the LanEast and LanWest solar farms (**AE-LE-LW-1, AE-PP-1, AE-CUM-PP-1**) are considered **significant and unmitigable**, even though future project-level analysis will required to understand and accurately characterize the extent of potential impacts to valued focal and/or panoramic vistas resulting from the LanEast and LanWest sites. Because LanEast and LanWest result in **significant and unmitigable** impacts to scenic vistas, the impacts of the Proposed Project are also considered **significant and unmitigable**. Additional design considerations, including reducing the number of trackers installed on site and reducing surface disturbance, could lessen the impact; these are discussed in Chapter 4.0, Alternatives.

Visual Character or Quality

Implementation of landscape screens running the length of Tierra del Sol Road where the road is adjacent to the Tierra del Sol solar farm site and along the outer edge of the Rugged solar farm site east and west of McCain Valley Road (Mitigation Measure **M-AE-PP-1**) as specified in Appendix 2.1-4, Landscape Screen Design for the Soitec Solar Development Program EIR, would reduce anticipated impacts to visual character and quality for the Tierra del Sol and Rugged solar farms. More specifically, landscape screens would break up the mass and scale of trackers, block views of trackers and other project component from critical mobile and stationary viewpoints, and create visual interest to divert attention away from trackers. While the installation and maintenance of screening elements along the project boundaries would partially screen views of CPV trackers from passing motorists and local residents, the complete screening of views from public viewpoints to the proposed solar farms is not possible. CPV trackers (approximate height of 30 feet above ground surface) would rise above the estimated height of recommended trees and shrubs (see Appendix 2.1-4) and plant density limitations required to achieve wildfire protection standards would limit opportunities to maintain a dense landscape screen. Therefore, even with implementation of **PDF-AE-2**, **PDF-AE-3,** and **M-AE-PP-1**, direct impact **AE-TDS-1** and **AE-R-1** would remain **significant and unmitigable**.

Implementation of landscape screens along Old Highway 80 and McCain Valley Road where the LanEast and LanWest project sites are located adjacent to the roadways would tend to break up the mass and scale of trackers and would block views of trackers and other project components from mobile viewpoints. However, because sufficient project information including the location of individual trackers is not available for LanEast and LanWest solar farms at this time, specifics regarding the exact placement and elements of potential landscape screens have not yet been determined. This information would be identified during forthcoming project-level environmental analysis. In addition, while Mitigation Measure **M-AE-PP-1** would be implemented at the LanEast and LanWest solar farms to reduce anticipated impacts to existing visual character and quality, landscape screens would be unable to fully screen views of trackers

from nearby local roads and from I-8. More specifically, CPV trackers would rise above the height of recommended trees and shrubs (see Appendix 2.1-4) and would remain partially visible beyond the landscape screen due to the plant density limitation required to achieve wildfire protection standards. Further, the superior viewing angle afforded to interstate motorists and the near lack of physical separation between the interstate ROW and the northern boundary of the solar farm sites may limit the overall effectiveness of vertical screening elements and other opportunities to screen project facilities from view. Therefore, even with implementation of **PDF-AE-2**, **PDF-AE-3,** and **M-AE-PP-1**, direct impacts **AE-R-1** and **AE-LE-LW-2** would remain **significant and unmitigable**.

Implementation of **PDF-AE-4** would reduce impacts to visual character and quality as a result of operation and maintenance of Tierra del Sol gen-tie. While **PDF-AE-4** would reduce the anticipated color contrast where new steel transmission poles are entirely back-screened by existing vegetation and terrain, however, from several viewpoints, transmission poles would rise above the height of nearby vegetation and the distant horizon line and would be silhouetted against the background sky. No feasible mitigation measures have been identified to reduce this impact to a less-than-significant level. Therefore, direct impact **AE-TDS-2** would remain **significant and unmitigable**.

For the reasons discussed above for the individual solar farm sites, the direct and cumulative impacts of the Proposed Project (**AE-PP-2, AE-CUM-PP-2)** would also be **significant and unmitigable**.

Additional design considerations, including reducing the number of trackers installed on site and reducing surface disturbance, as well as an underground gen-tie option for Tierra del Sol are discussed in Chapter 4.0, Alternatives.

Light and Glare

The lighting impacts associated with construction, operation, and maintenance of the Proposed Project are anticipated to be less than significant.

During operation of the Tierra del Sol solar farm, glare would be received by 2 residences to the west, 5 residences to the north, and by motorists along an approximate 1-mile segment of Tierra del Sol Road located adjacent to the northern and western project boundary. The intensity of glare produced by the trackers would be less than that of metal, glass, and water, and the generated reflection values are not considered hazardous to vision. Implementation of **M-AE-PP-1** would entail the installation and maintenance of landscape screens along the length of Tierra del Sol Road located adjacent to the northern and western project boundary that would partially block views of trackers from identified residences and motorists within a foreground viewing distance of the solar farm. While screens would partially block views of trackers, project glare would be received by

residents in the immediate area and by motorists on Tierra del Sol Road, and therefore, even with implementation of **M-AE-PP-1**, direct impacts **AE-TDS-3** and **AE-TDS-4** would remain **significant and unmitigable**.

During operation of the Rugged solar farm, glare would be received prior to sunset by 5 residences located west of the project site, motorists along a 0.5-mile segment of Ribbonwood Road, and motorists along a 0.2-mile segment of McCain Valley Road. The duration of daily glare exposure at residences would range from 31 minutes to 43 minutes, and motorists would receive glare in their peripheral field of vision as they pass the solar farm sites. As stated above, the intensity of glare produced by the trackers would be less than that of metal, glass, and water, and the generated reflection values are not considered hazardous to vision. While implementation of **M-AE-PP-1** would entail the installation and maintenance of a landscape screen along along the outer edge of the project site boundary east and west of McCain Valley Road, landscaping would not screen glare received by residents located west of the project site and would not fully screen glare received by motorists on McCain Valley Road. As such, even with implementation of **M-AE-PP-1**, direct impacts **AE-R-2 and AE-R-3** would remain **significant and unmitigable.**

Preparation of project-specific glare studies which accurately characterize potential impacts associated with operation of the LanEast and LanWest solar farms and identify appropriate glare-reduction measures (**PDF-AE-~~5~~6**) may reduce potential glare impacts~~.; however, p~~Project-generated glare would be received by residents located southwest of the project site and by motorists on I-8, Old Highway 80, and McCain Valley Road. While the glare generated by the trackers is not anticipated to result in hazardous conditions for nearby residents, the trackers at the LanEast and LanWest sites would create daytime glare that would be visible from adjacent properties where private outdoor activities may occur and from local and regional roadways. Implementation of **M-AE-PP-1** may partially block views of trackers from off-site locations; however, glare is likely to remain visible to motorists on I-8 due to the superior viewing angle afforded to passing motorists. I-8 is an eligible state scenic highway with average daily traffic volumes of approximately 13,575 vehicles. Glare would also remain visible to passing motorists on Old Highway 80 and McCain Valley Road. Therefore, for purposes of this analysis and even with ~~with~~ implementation of **PDF-AE-~~5~~6 and M-AE-PP-1**, direct impact **AE-LE-LW-3** associated with construction, operation, and maintenance of the LanEast and LanWest solar farms would remain **significant and unmitigable**.

For the reasons discussed above for the individual solar farm sites, the direct glare impact of the Proposed Project (**AE-PP-3)** would also be **significant and unmitigable**.

Table 2.1-1
Summary of Viewer Exposure – Tierra del Sol Solar Farm

Key View	View Zone	View Distance	Assumed Travel Speed	View Duration	Skylined View
1	Foreground/Middle-ground	0.25–1.0 mile	35 mph	1.3 minutes (77 seconds)	Yes
2–3	Foreground	<0.25 mile	35 mph	2.2 minutes (133 seconds)	No
4	Foreground/Middle-ground	0.25–1.0 mile	35 mph	0.7 minute (42 seconds)	Yes
5	Middle-ground	0.25–1.0 mile	10 mph	Intermittent, < 10 seconds	Yes

Table 2.1-2
Summary of Viewer Exposure – Tierra del Sol Gen-Tie Line

Road	View Zone	Assumed Travel Speed	Potential View Duration	
			SB/EB	*NB/WB*
Tierra del Sol Road	Foreground/Middle-ground	35 mph	3.3 minutes (199 seconds)	2 minutes (123 seconds)
Jewel Valley Road	Foreground/Middle-ground	35 mph	2.3 minutes (136 seconds)	3.9 minutes (235 seconds)

Note: Potential view duration reflects consideration of the topographic viewshed and does not consider potential screening effects of existing structures and vegetation along roadway segments or at viewpoint locations. Rather, the topographic viewshed is a function of the assigned height of the gen-tie structures and the existing topography in the area.

Table 2.1-3
Summary of Viewer Exposure – Rugged Solar Farm

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

Note: Visual simulations of the Rugged solar farm as viewed from I-8 and McCain Valley Road have been prepared. Please refer to Section 2.1.3.2, Visual Character or Quality, and more specifically, Key Views 11 through 14 (Figures 2.1-13 through 2.1-16).

Table 2.1-4
Location and Characteristics of Selected Key Views – Tierra del Sol Solar Farm

Key View	Representative Viewer Group	View Description/Distance to Tierra del Sol Site	Visual Exposure to Tierra del Sol Site[1]
1	Motorists	View from eastbound Tierra del Sol Road, approximately 0.6 mile west of the solar farm site	Short to long[2] duration views, middle-ground viewing distance and inferior viewing angle, off-site vegetation and unobstructed views of western portion of solar farm site
2	Motorists	View from eastbound Tierra del Sol Road, approximately 160 feet west of the solar farm site	Short to long duration views, foreground viewing distance and inferior viewing angle, unobstructed views of western portion of solar farm site
3	Motorists	View from southbound Tierra del Sol Road, approximately 80 feet north of the solar farm site	Short to long duration views, foreground viewing distance and normal to slightly inferior viewing angle, unobstructed views of solar farm site
4	Motorists/ Recreationists	View from southbound Tierra del Sol Road, approximately 0.68 mile north of the solar farm site	Short to long duration views, middle-ground viewing distance and inferior viewing angle, intervening vegetation partially obstructs distant views of solar farm site
5	Residents/Motorists	View from access road near western terminus of Tierra Estrella, approximately 1 mile northwest of solar farm site	Short to long duration views, middle-ground viewing distance and inferior viewing angle, largely unobstructed albeit distant views of the solar farm site
6	Motorists	View from northbound Tierra del Sol Road, approximately 2,500 feet southwest of the gen-tie alignment	Short to long duration views, foreground viewing distance and normal to inferior viewing angle, partially obstructed view of gen-tie alignment
7	Residents/Motorists	View from northbound Tierra del Sol Road, approximately 0.3 mile west of the gen-tie alignment	Short to long duration view, foreground viewing distance, inferior viewing angle, unobstructed views of gen-tie alignment
8	Residents/Motorists	View from northbound Jewel Valley Road, approximately 0.40 mile east of the gen-tie line	Short to long duration views, inferior viewing angle, unobstructed to partially obstructed views of gen-tie alignment
9	Residents/Motorists	View from southbound Jewel Valley Road, approximately 0.27 mile from nearest gen-tie structure	Short to long duration views, normal to superior viewing angle, unobstructed views of gen-tie alignment
10	Residents/Motorists	View from northbound Jewel Valley Road, approximately 0.10 mile from nearest gen-tie structure	Short to long duration views, inferior viewing angle, partially obstructed views of gen-tie alignment

Notes:

1 For purposes of this analysis, distance categories are defined as follows: foreground – less than 0.5 mile from key view location; middle-ground – between 0.5 and 3 miles from key view location; background – more than 3 miles from key view location.

2 Short duration views are temporary in nature and are made in passing. Viewer groups associated with these views include motorists and recreationists unfamiliar with the area and passing through. Long duration views are primarily those available to residents; however, local motorists and recreationists may travel a particular road segment regularly or may visit local recreational facilities frequently, and therefore, the view duration for a local motorist and recreationists could be considered a multiple of a single pass experience where the view duration is long even though a single pass is short in duration.

Table 2.1-5
Location and Characteristics of Selected Key Views – Rugged Solar Farm Project

Key View	Representative Viewer Group	View Description/Distance to Rugged Site	Visual Exposure to Rugged Site
11	Motorists	View from eastbound I-8, approximately 1.4 mile west of the western project boundary	Short duration and intermittent views, middle-ground viewing distance and superior viewing angle, vegetation and distance reduces visibility of project site, expansive landscape creates visual diversity
12	Motorist/ Recreationists	View from northbound McCain Valley Road, approximately 0.04 mile (220 feet) west of the eastern solar farm site boundary	Short duration views, foreground viewing distance and normal to slightly inferior viewing angle, slightly obstructed views due to vegetation and transmission structures but altogether unimpeded views to project site (trackers) available
13	Motorist/ Recreationists	View from southbound McCain Valley Road, approximately 0.05 mile (240 feet) east of the western solar farm site boundary	Short duration views, foreground viewing distance and normal to slightly superior viewing angle, unobstructed views of project site (trackers) on both sides of the road
14	Motorists	View from westbound I-8, approximately 0.55 mile south of the southern solar farm site boundary	Short duration views, middle-ground viewing distance and normal to slightly inferior angle, partially obstructed views of trackers

Table 2.1-6
Identified Residences within 1 Mile of Solar Equipment – Tierra del Sol

Residence[1]	Location	Proximity to Solar Equipment	Elevated View Above the Tierra del Sol Site[2]
1	West of project site	221 feet	0 feet
2	West of project site	300 feet	0 feet
3	North of project site	375 feet	10 feet
4	North of project site	445 feet	10 feet
5	North of project site	390 feet	22 feet
6	North of project site	615 feet	25 feet
7	North of project site	541 feet	27 feet

Source: Appendix 2.1-3 (Boulevard Glare Study).

1 For location of residences please refer to the Boulevard Glare Study (Appendix 2.1-3).

2 North of the solar farm site the terrain rises in elevation. As such, residences to the north of the site identified as having potential to receive glare are located at a higher elevation than the project site and proposed trackers.

Table 2.1-7
Maximum Anticipated Glare by Season – Tierra del Sol (Residences)

Residence	Season[1]			
	Spring	*Summer*	*Autumn*	*Winter*
1	53 minutes (6:04 p.m. to sunset)	60 minutes (6:56 p.m. to sunset)	53 minutes (5:48 p.m. to sunset)	46 minutes (3:58 p.m. to sunset)
2	53 minutes (6:04 p.m. to sunset)	60 minutes (6:56 p.m. to sunset)	53 minutes (5:48 p.m. to sunset)	46 minutes (3:58 p.m. to sunset)

Table 2.1-7
Maximum Anticipated Glare by Season – Tierra del Sol (Residences)

Residence	Season[1]			
	Spring	*Summer*	*Autumn*	*Winter*
3	No glare	33 minutes (7:23 p.m. to sunset)	No glare	No glare
4	No glare	30 minutes (7:26 p.m. to sunset)	No glare	No glare
5	No glare	29 minutes (7:27 p.m. to sunset)	No glare	No glare
6	No glare	30 minutes (7:26 p.m. to sunset)	No glare	No glare
7	No glare	30 minutes (7:26 p.m. to sunset)	No glare	No glare

Source: Appendix 2.1-3 (Boulevard Glare Study)
Note:
1 Spring Equinox (March 20, 2013, sunset 6:57 p.m.), Summer Solstice (June 21, 2013, sunset 7:56 p.m.), Autumnal Equinox (September 22, 2013, sunset 6:41 p.m.), and Winter Solstice (December 21, 2013, sunset 4:44 p.m.) were analyzed to establish seasonal trends to predict the occurrence of glare throughout the year.

Table 2.1-8
Maximum Anticipated Glare by Season – Tierra del Sol (Motorists)

Milemarker[1]	Season[2, 3]			
	Spring	*Summer*	*Autumn*	*Winter*
Tierra del Sol Road				
M 1-1.1	38 minutes	47 minutes	36 minutes	17 minutes
M 1.1-1.2	40 minutes	55 minutes	40 minutes	26 minutes
M 1.2-1.3	31 minutes	96 minutes	31 minutes	No glare
M 1.3-1.4	No glare	107 minutes	No glare	No glare
M 1.4-1.5	No glare	120 minutes	No glare	No glare
M 1.5-1.6	No glare	99 minutes	No glare	No glare
M 1.6-1.7	No glare	99 minutes	No glare	No glare
M 1.7-1.8	No glare	109 minutes	No glare	No glare
M 1.8-1.9	No glare	115 minutes	No glare	No glare
M 1.9-2	No glare	113 minutes	No glare	No glare

Source: Appendix 2.1-3 (Boulevard Glare Study)
Notes:
1 M = milemarker. The Boulevard Glare Study (Appendix 2.1-3) provides the anticipated daily duration of glare received by motorists over the approximate 1-mile segment of Tierra del Sol Road (as measured from west to east) exposed to project-generated glare in 0.10-mile increments. Milemarker 1 is located along the western project boundary where the road abuts the project site, and milemarker 2 is located along the northern project boundary where Tierra del Sol turns and proceeds northwards toward the SD&AE railroad.
2 Spring Equinox (sunrise 6:49 a.m., sunset 6:57 p.m.), Summer Solstice (sunrise 5:38 a.m., sunset 7:56 p.m.), Autumnal Equinox (6:34 a.m., sunset 6:41 p.m.), and Winter Solstice (6:44 a.m., sunset 4:44 p.m.) were analyzed to establish seasonal trends to predict the occurrence of glare throughout the year.
3 During spring, glare was recorded in the evening hours between 6 p.m. and sunset, and during summer glare was recorded in both morning hours between sunrise and 7 a.m. and evening hours between 7 p.m. and sunset. During fall, glare was recorded in the evening hours between 6 p.m. and sunset and in the winter between 4 p.m. and sunset. The duration of glare exposure presented in Table 2.1-8 is the total duration exposure over a day.

Table 2.1-9
Identified Residences within 1 Mile of Solar Equipment – Rugged

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

Source: Appendix 2.1-3 (Boulevard Glare Study)
Notes:
1 For location of residences, please refer to the Boulevard Glare Study (Appendix 2.1-3).
2 West of the westernmost portion of the project site (i.e., the Vista Oaks property) the terrain rises in elevation. As such, residences identified as having potential to receive glare are located at a higher elevation than the project site and proposed trackers.

Table 2.1-10
Maximum Anticipated Glare by Season – Rugged

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

Source: Appendix 2.1-3 (Boulevard Glare Study)
Note:
1 Spring Equinox (March 20, 2013, sunset 6:57 p.m.), Summer Solstice (June 21, 2013, sunset 7:56 p.m.), Autumnal Equinox (September 22, 2013, sunset 6:41 p.m.), and Winter Solstice (December 21, 2013, sunset 4:44 p.m.) were analyzed to establish seasonal trends to predict the occurrence of glare throughout the year.

Table 2.1-11
Maximum Anticipated Glare by Season – Rugged (Motorists)

Milemarker[1]	Season[2, 3]			
	Spring	*Summer*	*Autumn*	*Winter*
Ribbonwood Road				
M 1-1.1	No glare	No glare	No glare	No glare
M 1.1-1.2	No glare	No glare	No glare	No glare
M 1.2-1.3	No glare	20 minutes	No glare	No glare
M 1.3-1.4	29 minutes	20 minutes	29 minutes	39 minutes
M 1.4-1.5	No glare	26 minutes	No glare	39 minutes
M 1.5-1.6	23 minutes	31 minutes	23 minutes	39 minutes

Table 2.1-11
Maximum Anticipated Glare by Season – Rugged (Motorists)

Milemarker[1]	Season[2, 3]			
	Spring	*Summer*	*Autumn*	*Winter*
M 1.6-1.7	23 minutes	20 minutes	23 minutes	39 minutes
M 1.7-1.8	No glare	No glare	No glare	No glare
M 1.8-1.9	No glare	No glare	No glare	No glare
M 1.9-2	No glare	No glare	No glare	No glare
McCain Valley Road				
M 1-1.1	No glare	No glare	No glare	No glare
M 1.1-1.2	No glare	No glare	No glare	No glare
M 1.2-1.3	No glare	No glare	No glare	No glare
M 1.3-1.4	No glare	No glare	No glare	No glare
M 1.4-1.5	37 minutes	No glare	37 minutes	No glare
M 1.5-1.6	37 minutes	No glare	37 minutes	No glare
M 1.6-1.7	No glare	No glare	No glare	No glare
M 1.7-1.8	No glare	No glare	No glare	No glare
M 1.8-1.9	No glare	No glare	No glare	No glare
M 1.9-2	No glare	No glare	No glare	No glare

Source: Appendix 2.1-3 (Boulevard Glare Study)

Notes:

1 M = milemarker. The Boulevard Glare Study provides the anticipated daily duration of glare received by motorists in 0.10-mile increments. See Appendix 2.1-3 for milemarker locations.

2 Spring Equinox (sunrise 6:49 a.m., sunset 6:57 p.m.), Summer Solstice (sunrise 5:38 a.m., sunset 7:56 p.m.), Autumnal Equinox (6:34 a.m., sunset 6:41 p.m.), and Winter Solstice (6:44 a.m., sunset 4:44 p.m.) were analyzed to establish seasonal trends to predict the occurrence of glare throughout the year. For Ribbonwood Road, glare was recorded in spring and autumn between 6 p.m. and sunset, in summer between 7 p.m. and sunset, and in winter between 4 p.m. and sunset. For McCain Valley Road, glare was recorded in spring and autumn between 6 p.m. and sunset.

3 The duration of glare exposure presented in Table 2.1-11 is the total duration exposure over a day.

Table 2.1-12
Identified Residences within One-Mile of Solar Equipment – LanWest/LanEast

Residence[1]	Location	Proximity to Solar Equipment	Elevated View Above the Rugged Site[2]
LanWest			
1	Southwest of project site	2,520 feet	166 feet
2	Southwest of project site	1,674 feet	111 feet
3	Southwest of project site	1,064 feet	72 feet
4	Southwest of project site	1,131 feet	72 feet
LanEast			
5	North of Old Highway 80	221 feet	-
6	East of McCain Valley Road	110 feet	-

Source: Appendix 2.1-3 (Boulevard Glare Study)

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

2 Southwest of the project site the terrain rises in elevation. As such, residences identified as having potential to receive glare are located at a higher elevation than the project site and proposed CPV trackers.

Table 2.1-13
Maximum Anticipated Glare by Season –LanWest/LanEast

Residence	Season[1]			
	Spring	*Summer*	*Autumn*	*Winter*
LanWest				
1	No glare	No glare	No glare	27 minutes (4:17 p.m. to sunset)
2	No glare	No glare	No glare	30 minutes (4:14 p.m. to sunset)
3	No glare	No glare	No glare	35 minutes (4:09 p.m. to sunset)
4	No glare	No glare	No glare	29 minutes (4:15 p.m. to sunset)
LanEast				
5	82 minutes (5:35 p.m. to sunset)	11 minutes (7:04 a.m. to 7:15 a.m.)	81 minutes (5:20 p.m. to sunset)	No glare
6	92 minutes (5:25 p.m. to sunset)	46 minutes (sunrise to 6:24 a.m.) 113 minutes (6:03 p.m. to sunset)	91 minutes (5:10 p.m. to sunset)	23 minutes (4:21 p.m. to sunset)

Source: Appendix 2.1-3 (Boulevard Glare Study)

1. Spring Equinox (March 20, 2013, sunset 6:57 p.m.), Summer Solstice (June 21, 2013, sunrise 5:38 a.m., sunset 7:56 p.m.), Autumnal Equinox (September 22, 2013, sunset 6:41 p.m.), and Winter Solstice (December 21, 2013, sunset 4:44 p.m.) were analyzed to establish seasonal trends to predict the occurrence of glare throughout the year.

Table 2.1-14
Maximum Anticipated Glare by Season – LanWest/LanEast (Motorists)

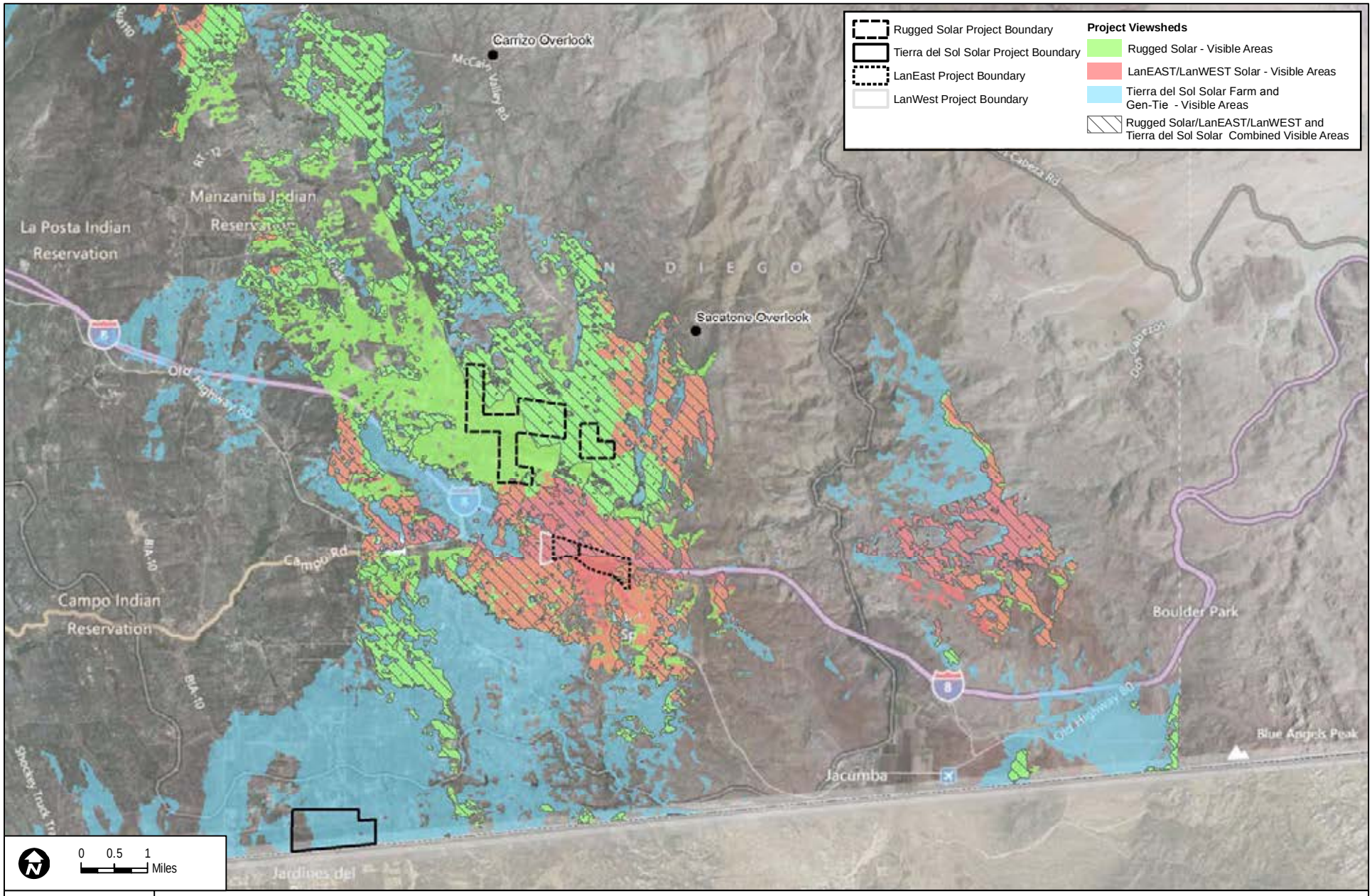
Milemarker[1]	Season[2,3]			
	Spring	*Summer*	*Autumn*	*Winter*
Interstate 8				
M 1-1.1	No glare	15 minutes	No glare	No glare
M 1.1-1.2	No glare	15 minutes	No glare	No glare
M 1.2-1.3	No glare	No glare	No glare	No glare
M 1.3-1.4	No glare	No glare	No glare	No glare
M 1.4-1.5	No glare	No glare	No glare	No glare
M 1.5-1.6	No glare	45 minutes	No glare	No glare
M 1.6-1.7	No glare	55 minutes	No glare	No glare
M 1.7-1.8	10 minutes	55 minutes	10 minutes	No glare
M 1.8-1.9	10 minutes	55 minutes	10 minutes	No glare
M 1.9-2	10 minutes	55 minutes	10 minutes	No glare
M 2-2.1	5 minutes	65 minutes	5 minutes	No glare
M 2.1-2.2	5 minutes	70 minutes	5 minutes	No glare
M 2.2-2.3	5 minutes	60 minutes	5 minutes	No glare
M 2.3-2.4	5 minutes	60 minutes	5 minutes	No glare
M 2.4-2.5	5 minutes	50 minutes	5 minutes	No glare
M 2.5-2.6	5 minutes	30 minutes	5 minutes	No glare
M 2.6-2.7	5 minutes	15 minutes	5 minutes	No glare
M 2.7-2.8	5 minutes	20 minutes	5 minutes	No glare
M 2.8-2.9	5 minutes	No glare	5 minutes	No glare

Table 2.1-14
Maximum Anticipated Glare by Season – LanWest/LanEast (Motorists)

Milemarker[1]	Season[2,3]			
	Spring	*Summer*	*Autumn*	*Winter*
Old Highway 80				
M 0-0.1	No glare	No glare	No glare	No glare
M 0.1-0.2	No glare	No glare	No glare	No glare
M 0.2-0.3	18 minutes	No glare	18 minutes	48 minutes
M 0.3-0.4	No glare	No glare	No glare	48 minutes
M 0.4-0.5	No glare	No glare	No glare	No glare
M 0.5-0.6	No glare	No glare	No glare	No glare
M 0.6-0.7	No glare	No glare	No glare	No glare
M 0.7-0.8	No glare	No glare	No glare	No glare
M 0.8-0.9	No glare	No glare	No glare	60 minutes
M 0.9-1.0	35 minutes	No glare	35 minutes	60 minutes
McCain Valley Road				
M 0-0.1	46 minutes	55 minutes	46 minutes	10 minutes
M 0.1-0.2	80 minutes	125 minutes	80 minutes	89 minutes
M 0.2-0.3	70 minutes	117 minutes	70 minutes	79 minutes

Source: Appendix 2.1-3 (Boulevard Glare Study)

1. M = mile marker. The Boulevard Glare Study provides the anticipated daily duration of glare received by motorists in 0.10-mile increments. See Appendix 2.1-3 for milemarker locations.
2. Spring Equinox (sunrise 6:49 a.m., sunset 6:57 p.m.), Summer Solstice (sunrise 5:38 a.m., sunset 7:56 p.m.), Autumnal Equinox (6:34 a.m., sunset 6:41 p.m.), and Winter Solstice (6:44 a.m., sunset 4:44 p.m.) were analyzed to establish seasonal trends to predict the occurrence of glare throughout the year.
3. The duration of glare exposure presented in Table 2.1-14 is the total duration exposure over a day.



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SOURCE: SANDAG; Bing Maps

FIGURE 2.1-1

Project Viewshed Map

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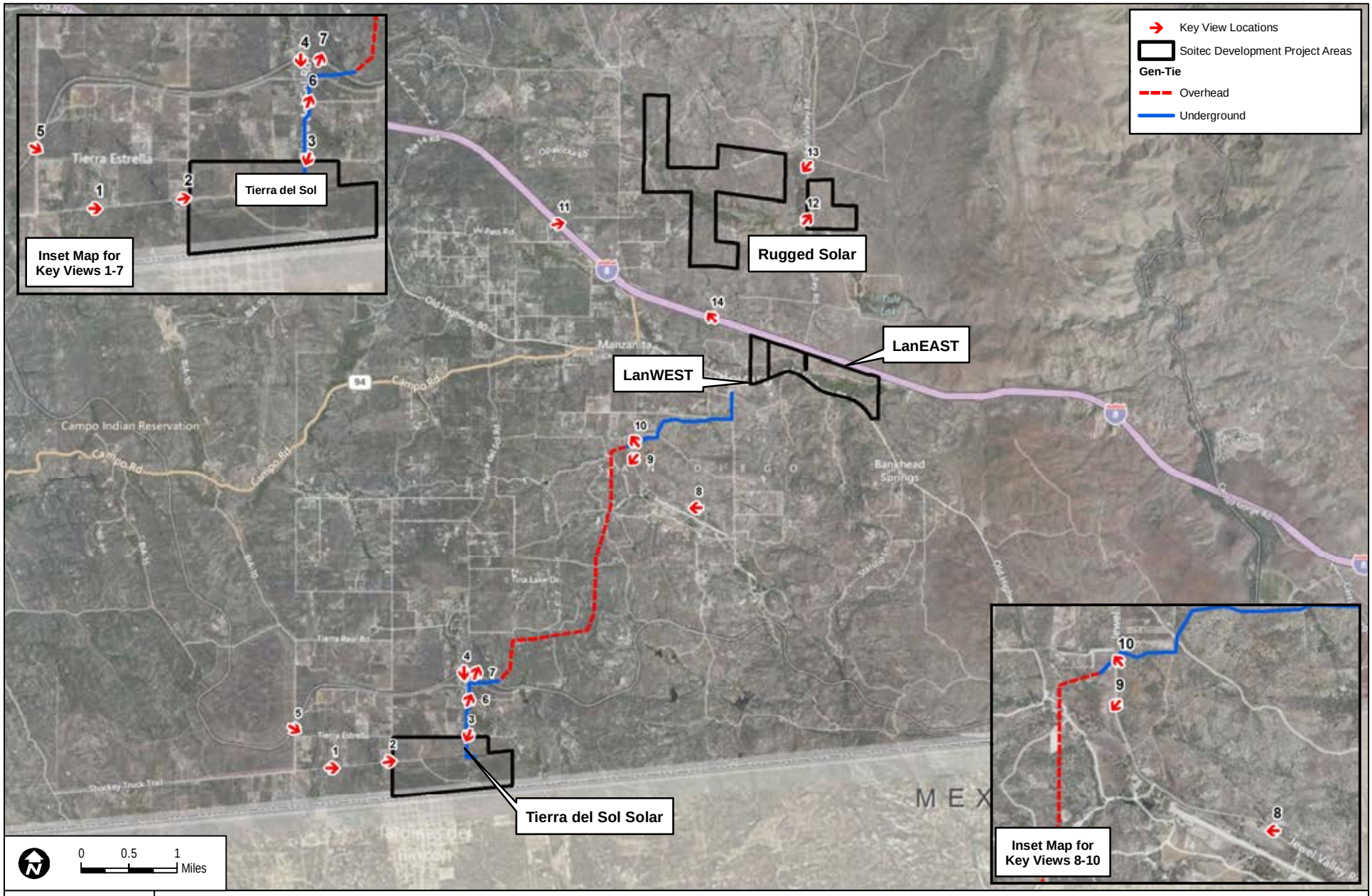

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SOURCE: Bing Maps

FIGURE 2.1-2

Key View Location Map

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Key View 1–Existing Conditions, facing east on Tierra Del Sol Road

Key View 1–Proposed Conditions, Visual Simulation

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SOURCE: DUDEK 2012

FIGURE 2.1-3
Key View 1–Existing and Proposed Conditions

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Key View 2–Existing Conditions, facing east on Tierra Del Sol Road

Key View 2–Proposed Conditions, Visual Simulation

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SOURCE: DUDEK 2012

FIGURE 2.1-4
Key View 2–Existing and Proposed Conditions

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Key View 3–Existing Conditions, facing southwest on Tierra Del Sol Road

Key View 3–Proposed Conditions, Visual Simulation

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SOURCE: DUDEK 2012

FIGURE 2.1-5
Key View 3–Existing and Proposed Conditions

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Key View 4–Existing Conditions, facing south on Tierra Del Sol Road

Key View 4–Proposed Conditions, Visual Simulation

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SOURCE: DUDEK 2012

FIGURE 2.1-6

Key View 4–Existing and Proposed Conditions

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Key View 5–Existing Conditions, facing southeast near western terminus of Tierra Estrella

Key View 5–Proposed Conditions, Visual Simulation

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SOURCE: DUDEK 2012

FIGURE 2.1-7

Key View 5–Existing and Proposed Conditions

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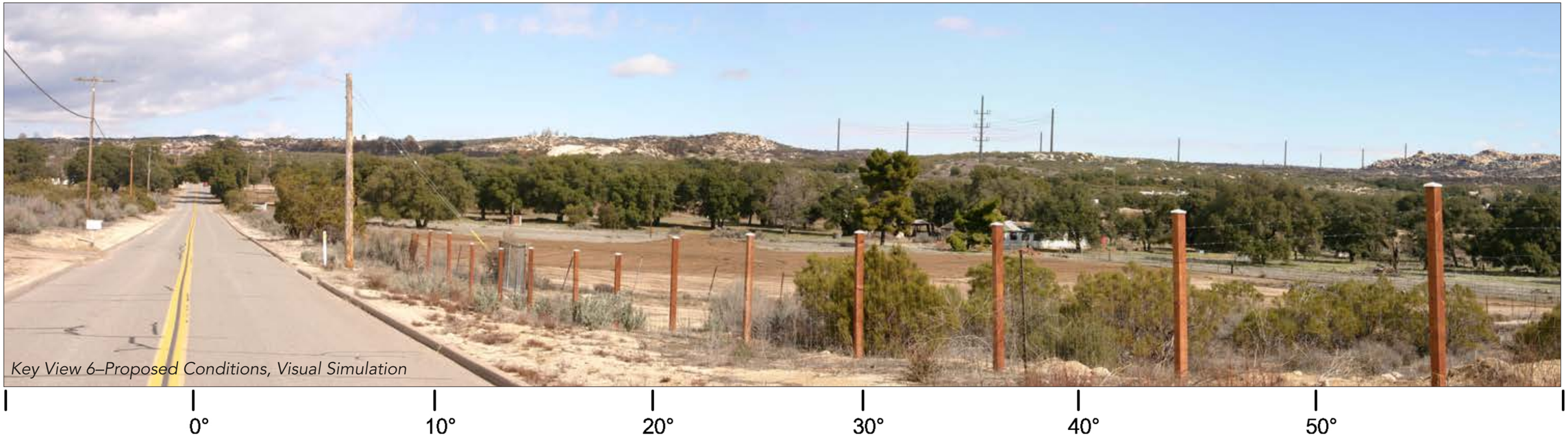
Key View 6–Existing Conditions, facing northeast on Tierra Del Sol Road



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SOURCE: AECOM 2012

FIGURE 2.1-8
Key View 6–Existing and Proposed Conditions

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Key View 7–Existing Conditions, facing northeast on Tierra Del Sol Road near railroad crossing

SOURCE: AECOM 2012

FIGURE 2.1-9
Key View 7–Existing and Proposed Conditions

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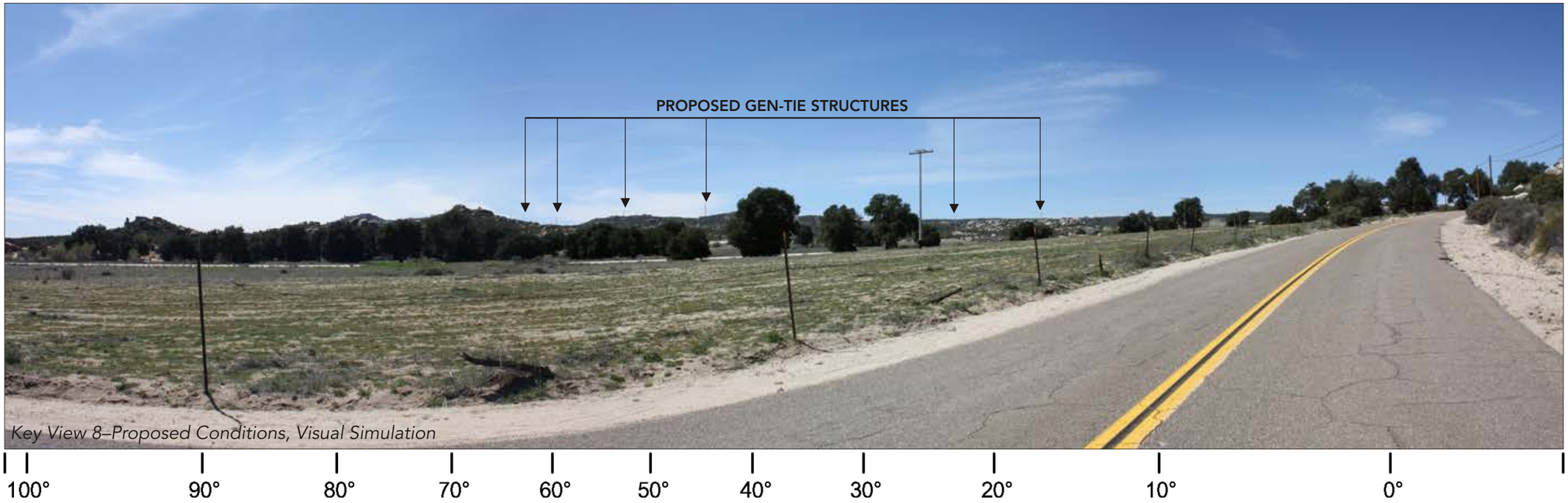
Key View 8–Existing Conditions, facing west on Jewel Valley Road



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SOURCE: AECOM 2012

FIGURE 2.1-10
Key View 8–Existing and Proposed Conditions

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Key View 9–Existing Conditions, facing southwest on Jewel Valley Road

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SOURCE: AECOM 2012

FIGURE 2.1-11
Key View 9–Existing and Proposed Conditions

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Key View 10–Existing Conditions, facing northwest along Jewel Valley Road

SOURCE: AECOM 2012

FIGURE 2.1-12
Key View 10–Existing and Proposed Conditions

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Key View 11–Existing Conditions, facing east along Interstate 8

Key View 11–Proposed Conditions, Visual Simulation

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SOURCE: AECOM 2012

FIGURE 2.1-13
Key View 11–Existing and Proposed Conditions

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Key View 12–Existing Conditions, facing north along McCain Valley Road

Key View 12–Proposed Conditions, Visual Simulation

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SOURCE: AECOM 2012

FIGURE 2.1-14
Key View 12–Existing and Proposed Conditions

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Key View 13–Existing Conditions, facing southeast along McCain Valley Road

Key View 13–Proposed Conditions, Visual Simulation

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SOURCE: AECOM 2012

FIGURE 2.1-15
Key View 13–Existing and Proposed Conditions

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Key View 14–Existing Conditions, facing northwest along westbound Interstate 8

Key View 14–Proposed Conditions, Visual Simulation

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SOURCE: AECOM 2012

FIGURE 2.1-16
Key View 14–Existing and Proposed Conditions

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