SECTION 4.1

AESTHETICS

This section defines terms used to assess visual quality and describes the existing visual resources in the vicinity of the solar field site parcels that could potentially be affected by the construction and operation of the proposed Drew Solar Project. This section also examines the potential for the proposed Project to degrade the existing visual character or quality of the solar field site parcels and surrounding areas through changes in the existing landscape. Key Observation Points (KOPs) are identified from which the view of the Project Site is analyzed. Potential effects are evaluated using photo simulations.

DEFINITIONS AND TERMINOLOGY

The following definitions of key terms are provided to describe and assess potential visual impacts.

- **Key Observation Point (KOP)**. A point along a travel route or an area where a view of the proposed Project would be visible.
- **Scenic Vista**. An area that is designated, signed, and accessible to the public for the express purposes of viewing and sightseeing as designated by a federal, state, or local agency.
- **Scenic Highway**. A section of public roadway that is designated as a scenic corridor by a federal, state, or local agency.
- **Sensitive Viewpoints**. Views from a public park, a recreational trail, and/or a culturally important site are considered to have a high visual sensitivity and are considered examples of sensitive viewpoints.
- **Sensitive Receptors**. Areas subject to high visibility by a large number of people are considered to be sensitive receptors. Residential viewers typically have extended viewing periods and are generally considered to have high visual sensitivity.
- **Viewshed**. The landscape that can be viewed free of obstruction under favorable atmospheric conditions from a viewpoint or along a transportation corridor.

4.1.1 REGULATORY FRAMEWORK

A. STATE

Senate Bill 1467

Senate Bill 1467 established the Scenic Highway Program. SB 1467 declares: *"The development of scenic highways will not only add to the pleasure of the residents of this state, but will also play an important role in encouraging the growth of the recreation and tourist industries upon which the economy of many users of this State depends"*. There are no officially designated State Scenic Highways in Imperial County. Four areas are designated as Eligible State Scenic Highways, the closest of which to the Project Site is Interstate 8 (I-8) between the San Diego County line and its junction with State Route 98 (SR 98). This segment, known as Mountain Springs Grade, has a long, rapid elevation change, remarkable rock and boulder scenery, and plant life variations (County of Imperial 2008a). However, easternmost point of this segment is located approximately nine miles to the west of the Project Area and views from this segment are obstructed by intervening terrain.

B. LOCAL

Imperial County General Plan

Three elements of the Imperial County General Plan discuss issues relevant to the analysis of visual resources, the Land Use Element, the Circulation and Scenic Highways Element, and the Conservation and Open Space Element.

4.1 AESTHETICS

Table 4.1-1 analyzes the consistency of the proposed Project with the applicable goals and objectives relating to visual resources from the Imperial County General Plan. While this EIR analyzes the proposed Project's consistency with the General Plan pursuant to CEQA Guidelines Section 15125(d), and can be used as substantial evidence to support a finding of consistency required under laws other than CEQA, the Imperial County Board of Supervisors ultimately determines consistency with the General Plan.

TABLE 4.1-1
IMPERIAL COUNTY GENERAL PLAN CONSISTENCY ANALYSIS

General Plan Goals and Objectives	Consistent with General Plan?	Analysis
LAND USE ELEMENT		
Regional Vision		
Goal 3: Achieve balanced economic and residential growth while preserving the unique natural, scenic, and agricultural resources of Imperial County.	Yes	The proposed Project is located in southwestern Imperial County, an area characterized by agricultural fields and solar development. The Project Site is a currently used for agricultural purposes and does not contain any designated scenic features. The proposed Project would not obstruct views of distant mountain ranges or degrade any scenic vistas as none are visible in the Project vicinity. The Project is consistent with the mixture of solar development and agriculture in this portion of the County. The conversion of the Project Site to a solar energy generation facility would be temporary, with required reclamation of the site to pre-Project soil conditions at the end of each CUP's operational life. The Project also proposes to co-locate transmission facilities with the Centinela Solar Project, thereby avoiding development of additional transmission infrastructure. The Project would be well maintained and kept free from weeds, include landscaping and an entry monument at each O&M building, and maintain the current non-urbanized, agricultural character along the perimeter of each CUP area. Therefore, the proposed Project is consistent with this Goal.
Objective 3.4 Protect/improve the aesthetics of Imperial County and its communities.	Yes	Refer to the discussion above under Land Use Element Goal 3.

TABLE 4.1-1
IMPERIAL COUNTY GENERAL PLAN CONSISTENCY ANALYSIS

General Plan Goals and Objectives	Consistent with General Plan?	Analysis
CIRCULATION AND SCENIC HIGHWAYS ELEMENT		
Scenic Highways		
Goal 4: The County shall make every effort to develop a circulation system that highlights and preserves the environmental and scenic amenities of the area.	Yes	Refer to discussion below under Circulation and Scenic Highways Element Objective 4.3. The Project does not impede the development of a circulation system that highlights and preserves the County's environmental and scenic amenities.
Objective 4.3: Protect areas of outstanding scenic beauty along any scenic highways and protect the aesthetics of those areas.	Yes	There are no officially designated State Scenic Highways in Imperial County. The closest Eligible State Scenic Highway segment to the Project Site is along I-8, and ends approximately nine miles northwest of the Project Site. The Project Site is not visible from this segment due to natural topography. Refer also to discussion under Land Use Element Goal 3, above.

TABLE 4.1-1
IMPERIAL COUNTY GENERAL PLAN CONSISTENCY ANALYSIS

General Plan Goals and Objectives	Consistent with General Plan?	Analysis
CONSERVATION AND OPEN SPACE ELEMENT		
Preservation of Visual Resources		
Goal 5: The aesthetic character of the region shall be protected and enhanced to provide a pleasing environment for residential, commercial, recreational, and tourist activity.	Yes	The Project is located in an area already characterized by a combination of agricultural uses as well as several other solar developments. It is not zoned residential, commercial, or recreational. The Project Area does not possess any unique or outstanding visual qualities nor would it obstruct views of distant mountain ranges or nearby Mount Signal. Overhead utility infrastructure is currently visible along many roadways with in the Project Area and the proposed Gen-Tie pole and line(s), along with internal collector lines would increase the amount of utility structures in the area. Undergrounding or co-location of the proposed 400-foot long Gen-Tie lines with the Centinela Solar Project would protect the aesthetic character of the region by avoiding the need to add additional transmission infrastructure to connect to the Drew Substation. Therefore, the proposed Project is considered consistent with this goal.
Objective 5.1: Encourage the conservation and enhancement of the natural beauty of the desert and mountain landscape.	Yes	The Project vicinity includes several overhead electrical lines as well as transmission lines related to surrounding solar projects that are visible within the Project viewshed. The proposed Gen-Tie lines (if aboveground), solar generation and storage infrastructure, supporting O&M facilities and internal transmission lines would introduce new features to the landscape. However, the Project would not alter existing views of the desert and mountains. If not undergrounded, the tallest structures would be poles for one or both of the Gen-Tie lines proposed to be co-located with Centinela Solar Project infrastructure to minimize the amount of infrastructure added to the viewshed. Therefore, the proposed Project is consistent with this objective.

4.1.2 ENVIRONMENTAL SETTING

The visual setting includes six parcels of privately owned (IID), active agricultural land under the jurisdiction of Imperial County and located in the southwestern portion of the Imperial County.

A. REGIONAL

As described in the Open Space and Conservation Element of the General Plan (County of Imperial 2016a), Imperial County extends over 4,597 square miles between Riverside County to the north, Mexico to the south, San Diego County to the west, and Arizona to the east. The County's visual character varies greatly. It includes natural scenic visual resources such as deserts, sand dunes, mountains, and the Salton Sea. The nearest urbanized area to the Project site is the City of Calexico, located approximately 20 miles to the east. The small community of Ocotillo is located approximately eight miles to the northwest.

Desert areas include the Yuha Desert, West Mesa, lower Borrego Valley, East Mesa, and Pilot Knob Mesa. The Yuha Desert contains unique geologic features including sand chimneys and painted gorge formations that add scenic value to the natural landscape. Cultural features in the Yuha Desert include large earth sculptures, or geoglyphs, constructed by prehistoric Native Americans. The West Mesa, lower Borrego Valley, East Mesa, and Pilot Knob Mesa consist of desert vegetation from the creosote scrub community. Other plants include ocotillo, mesquite, palo verde, saltbush, and encelia.

The eastern foothills of the Peninsular Range run along the County's southwest side, west of the Project Site. These foothills include the In-Ko-Pah or Jacumba Mountains, Coyote Mountains, and Fish Creek Mountains. Mount Signal, located southeast of the Project Site along the international border on the eastern edge of the Yuha Desert, is visible from most of the Imperial Valley.

The predominant views in Imperial Valley are of agricultural areas characterized by square or rectangular fields, typically 40 to 80 acres in area, interspersed with scattered farmhouses and related agricultural structures. These agricultural regions are also crossed by irrigation canals and drainages that parallel dirt farm roads. Certain areas previously used as farmland are being converted to solar power facilities. As of the 2016 update to the General Plan Open Space of Conservation Element, 23,000 acres of solar development had been proposed under various stages of review and/or approval (County of Imperial 2016a).

B. SURROUNDING AREA

SR 98 and several paved rural roads align through the Project Site and surrounding vicinity. The area is predominantly flat as most of the land has been leveled to facilitate irrigation. The surrounding properties are approximately the same elevation as the Project Site. Properties surrounding the Project Site are either in active agricultural use or solar energy facilities constructed over the past several years. Agricultural fields are located along the northern portion of the Project Site.

Agricultural fields and a sliver of vacant desert land are located to the west. Dirt field roads are located along the margins of the individual fields. Numerous canals, ditches and drains owned by the Imperial Irrigation District (IID) are located throughout the area providing irrigation water and drainage to the individual fields. The rest of the area is predominantly agricultural with very few residences and agricultural buildings. A rural residence and farm equipment repair shop is located adjacent to the southern boundary of the Project Site between Drew Road and SR 98. The Westside Main Canal is located adjacent to the southwestern boundary of the Project Site (GS Lyon 2018). The other solar projects include Centinela Solar, the Mount Signal and Calexico Solar projects, Campo Verde Solar, Wistaria Ranch Solar

and Imperial Solar Energy Center South. The Project Site is surrounded on two sides by the existing Centinela Solar Project and is adjacent to the existing Drew Switchyard. A majority of the projects in the area interconnect to the Drew Switchyard.

Views of the surrounding area from roadways consist of agricultural fields, solar energy facilities, small outcroppings of trees along the edges of agricultural fields, and existing electrical transmission or distribution as well as overhead telephone lines. However, Mount Signal dominates views to the south and mountains are visible in the distant background from most vantage points along area roadways and from the agricultural fields.

Based on the nonurbanized, rural nature of the surrounding landscape, very little nighttime illumination is generated in this area of the County. The primary source of light and glare in the area is from motor vehicles traveling on surrounding roadways. Likewise at night, vehicle headlights on surrounding roadways generate light and glare. Warning lighting is also located on existing transmission lines throughout the region to alert aircraft of potential flight path hazards. Glare is generated during daytime hours from the sun's reflection off of cars and paved roadway surfaces.

C. PROJECT SITE

The proposed Project Site is on IID-owned land in the unincorporated area of Imperial County, approximately nine miles west of the City of Calexico (refer to **Figure 2.0-1** in Chapter 2.0, Project Description). The Project Site is generally bounded by Kubler Road on the north, Mandrapa Road on the west, and Pulliam Road on the east. Drew Road bisects the Project Site in a north-south alignment. SR 98 aligns along the southern border of the Project Site and is the major west-east arterial road in the area. Like the surrounding area, the solar field site parcels where the CUPs are proposed are dominated by agricultural fields (Bermuda grass), earthen berms associated with the irrigation and drainage systems, and overhead power and telephone lines. The existing gen-tie structures constructed for the Centinela Solar Project are immediately adjacent to the southern boundary of the Phase 1 parcel (CUP 17-0031). The solar field site parcels are being farmed for flat crops. No residences are located within the boundaries of the Project site.

D. VIEWSHED

Existing views of the Project Area are available from the surrounding roadways, specifically from SR 98 as well as the other roads (Mandrapa Road, Pulliam Road, Drew Road, Kubler Road) that align along and through the solar field site parcels. **Figure 4.1-1** shows the Key Observation Points (roadways and residential structures) within one mile of the Project site.

Due to the flat topography of the solar field site parcels and the surrounding vicinity, the existing overhead utility lines are the only readily visible feature from many viewpoints. No other unique topographical features are associated with any of the solar field site parcels. Mount Signal is a dominant visual feature to the south (approximately 2.5 miles away). The Yuha Buttes and Coyote Mountains are visible in the far distance looking west and northwest.

4.1.3 IMPACTS AND MITIGATION MEASURES

A. STANDARDS OF SIGNIFICANCE

The impact analysis provided below is based on the following CEQA Guidelines, as listed in Appendix G. The Project would result in a significant impact to visual resources if it would result in any of the following:

a) Have a substantial adverse effect on a scenic vista.

b) Substantially damage scenic resources, including, but limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

c) In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

B. ISSUES SCOPED OUT AS PART OF THE INITIAL STUDY

Criterion "b" was eliminated from further evaluation as part of the Initial Study because the Project Site is in agricultural production and does not contain any scenic resources including trees, rock outcroppings or historic buildings. Likewise, SR 98 is not a Scenic Highway; therefore, no scenic resources or state scenic highways would have the potential to be damaged as result of a Project implementation, and this issue is not be discussed further in this EIR.

C. METHODOLOGY

Analysis of impacts to visual character is subjective by nature because the qualities that create an aesthetically pleasing setting will vary from person to person. For purposes of this analysis, the Project Site and its vicinity have been surveyed in order to consider the existing community character and determine the proposed Project's consistency with the surrounding area and with applicable General Plan goals, objectives, policies and programs. The evaluation of impacts were based on professional judgment; the existing aesthetic conditions (including presence of nighttime illumination and glare sources); analysis of the Imperial County General Plan goals and objectives related to visual resources; and the significance criteria established by CEQA. Aesthetic resources are defined as both natural and built features of the landscape that contribute to the public's experience and appreciation of the visual environment. Aesthetic impacts are determined on a qualitative basis through a comparison of the visual environment before and after a project is implemented. This section addresses the visual condition or character of the Project area and its vicinity, and the potential for the proposed Project to adversely affect those conditions. Depending on the extent to which a project's presence would alter the perceived visual character and quality of the environment, aesthetic impacts may occur.

Glare Study

Glare may result if radiation (light) from the sun is reflected from the PV modules or associated infrastructure and directed towards a viewer resulting in an annoyance, distraction, or nuisance. Glare produced by any surface is affected multiple variables, including time of day, reflectivity of the surface, and the directionality of reflections relative to the position of a potential viewer. Potential viewers may be situated at a variety of viewing locations including stationary or mobile, at ground-level or from the air.

Power Engineers, Inc. performed a Glare Study for the proposed Project to identify potential glare impacts to motorists and surrounding residences that could result from the installation and use of single-axis tracking photovoltaic (PV) solar technology (Power Engineers, Inc. 2018; **Appendix B**). This represents a worst-case scenario of the technologies being considered. To understand the methodology and results of the Glare Study, the following definitions are provided:

- **Photovoltaic Panel** – Photovoltaic panels, also known as PV panels, are designed to absorb solar energy and retain as much of the solar spectrum as possible in order to produce electricity.
- **Key Observation Points (KOP)** – KOPs refer to locations with sensitivity to potential glare. For this study, KOPs included roadways and residential structures within one mile of the Project (refer to **Figure 4.1-1**).
- **Single Axis Solar Tracker** – Single axis solar trackers are designed to maximize the efficiency of a PV panel operation. PV panels mounted to a single axis tracker rotate around a fixed axis allowing PV panels to track the sun's east/west position throughout the day (see **Figure 4.1-2**).
- **Glare** – A continuous source of brightness, relative to diffuse or surface scattered lighting. For purposes of this study, glare is caused by the sun reflecting off solar panels (see **Figure 4.1-3**).
- **GlareGauge** – The GlareGauge tool uses Solar Glare Hazard Analysis Tool (SGHAT) technology. Developed by Sandia National Laboratories, this tool is a web-based application that predicts the potential for solar glare and ocular impacts from solar technologies (see https://share.sandia.gov/phlux/). The GlareGauge tool and SGHAT technologies have become the Federal Aviation Administration standard for analyzing solar glare for both terrestrial and aerial viewers.

The methodology used to determine the location and duration of potential glare is described and illustrated below.

Identify Potential Glare Issues

Identify where glare may be visible from nearby roadways or residences. As discussed above, Google Earth aerial imagery was used to identify any major structures within one mile of the Project. Proposed solar operations were then studied from Key Observation Points (KOPs) located at 18 surrounding residential structures and four roadways adjacent the Project Site (see **Figure 4.1-4** through **Figure 4.1-8**). All residential structures and roadways were analyzed up to one mile from the Project Area.

Characterize Glare Behavior

Power Engineering, Inc. utilized the GlareGauge tool to determine when and where solar glare may occur throughout the day and year (see https://share.sandia.gov/phlux/). The GlareGauge tool allows input of viewer position, solar facility location, solar technology, and elevation data. The GlareGauge tool provides a quantified assessment of when and where glare may occur throughout the year from a solar installation, as well as identifying the potential effects on the human eye if glare does occur. Technical specifications of proposed PV solar equipment considered include panel dimensions, type, angle, orientation, and placement as described below:

- Single Axis Trackers
- Panel Orientation: North/South
- Panel Rotation Limits: ± 60 degrees
- Coating/Texture: Smooth Glass with AR Coating
- Rack Height: 4 feet above grade

Evaluate

Once glare was characterized, visual analysts documented the occurrence and hazard level of potential glare. Glare was analyzed at one-minute intervals throughout the entire year to determine when and where glare may be visible to nearby residences and motorists from the identified KOPs.

The proposed Project was analyzed to evaluate and document any occurrences of glare that would potentially cause distractions to nearby residences and motorists (Power Engineers, Inc. 2018). Google Earth aerial imagery was used to identify any major structures within one mile of the Project. Proposed solar operations were then studied from Key Observation Points (KOPs) located at 18 surrounding residential structures and four roadways adjacent the site (see **Figure 4.1-1** and **Table 4.1-2**). All residential structures and roadways were analyzed up to one mile from the Project. The location and analysis height of each KOP group is described below.

Surrounding Residential Structures

- Distance from Project: 0-1.0 mile
- Viewer Height: 8 feet

Roadways

State Route 98:

- Location relative Project: South
- Viewer Height: 6-10 feet
- Direction of Travel: East/West

Drew Road:

- Location relative Project: West
- Viewer Height: 6-10 feet
- Direction of Travel: North/South

Pulliam Road:

- Location relative Project: East
- Viewer Height: 6-10 feet
- Direction of Travel: North/South

Kubler Road:

- Location relative Project: North
- Viewer Height: 6-10 feet
- Direction of Travel: East/West

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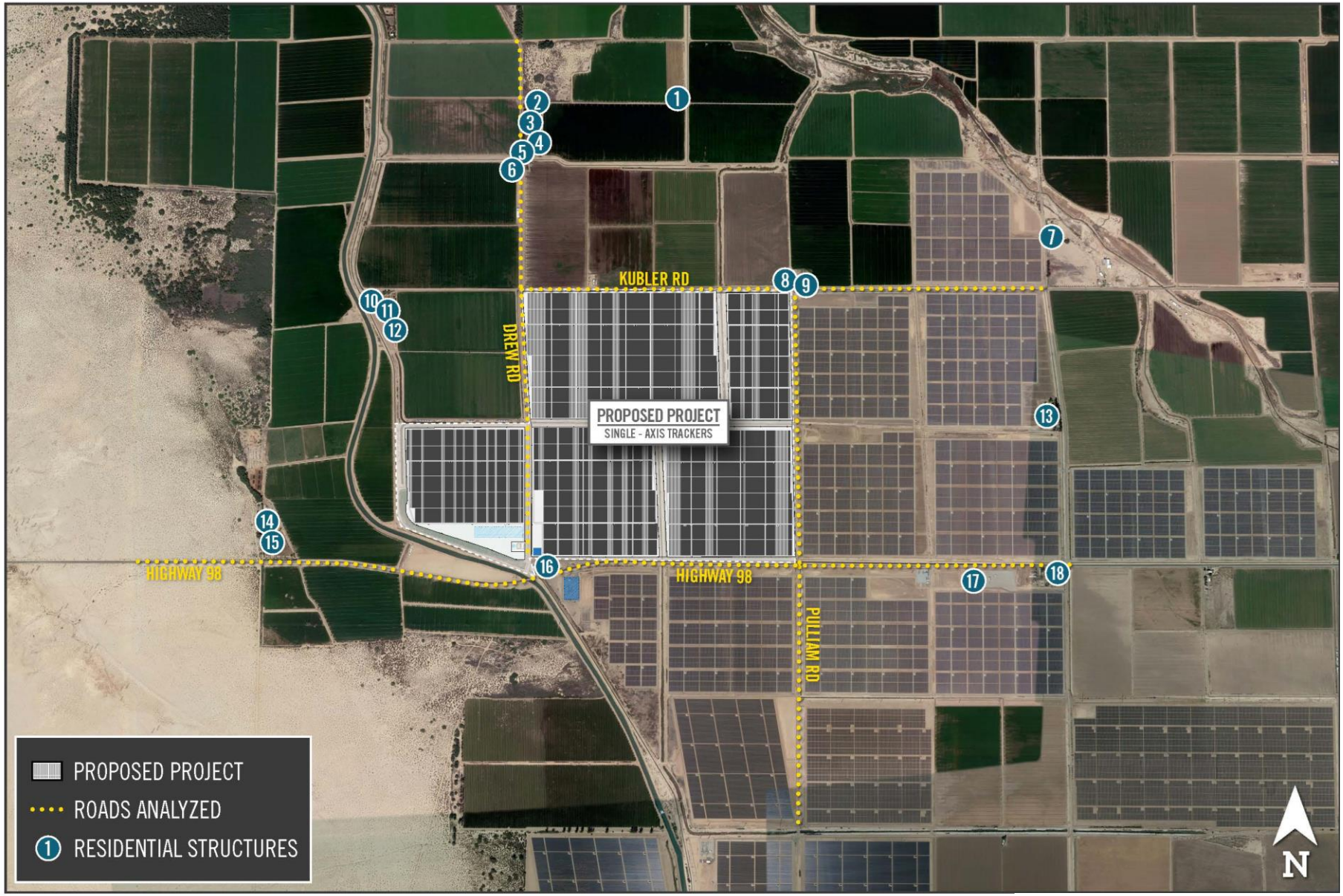

Source: Power Engineers 2018.

FIGURE 4.1-1
KEY OBSERVATION POINTS

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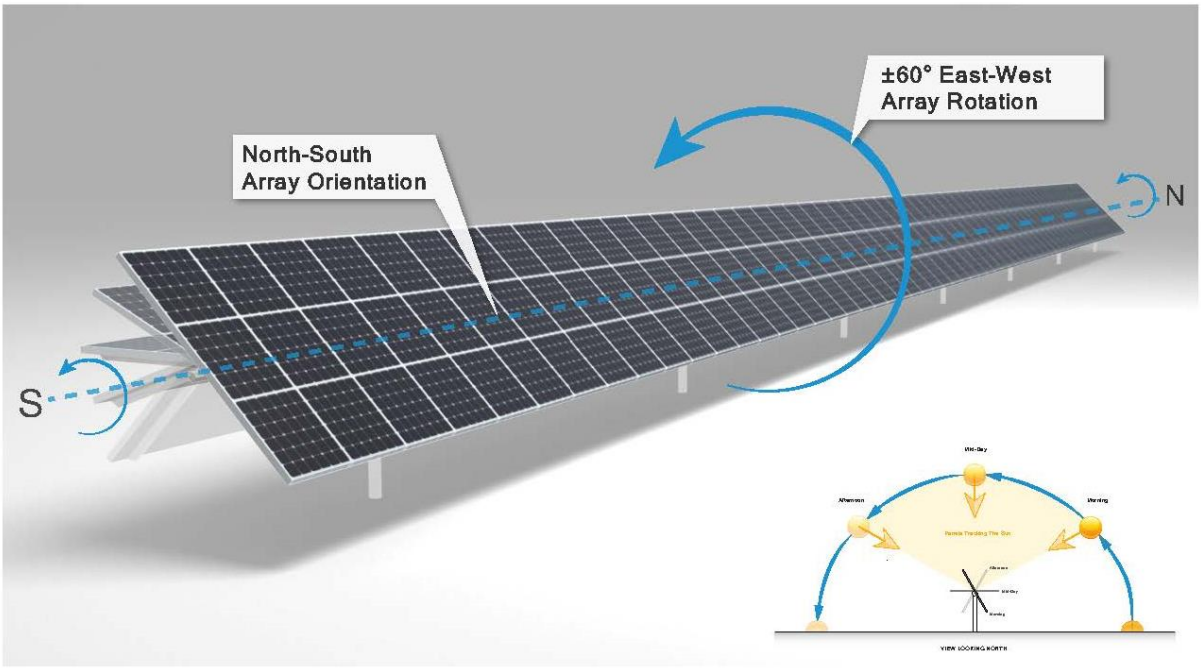
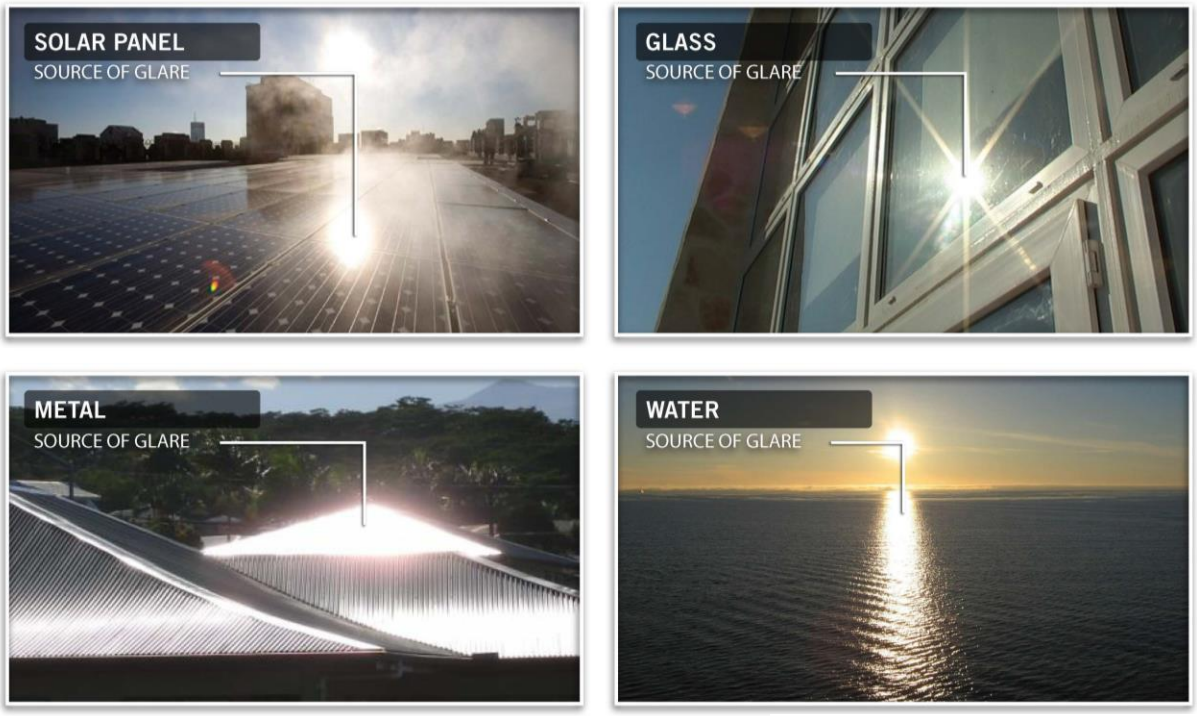


Source: Power Engineers 2018.

FIGURE 4.1-2
SINGLE-AXIS SOLAR TRACKER



Source: Power Engineers 2018.

FIGURE 4.1-3
EXAMPLES OF GLARE

D. PROJECT IMPACTS AND MITIGATION MEASURES

Adverse Effect on Scenic Vista

Impact 4.1.1 The Project Area is not considered a scenic vista nor does it contain any outstanding aesthetic features. Therefore, this impact is considered **less than significant** under both the Full-Buildout and Phased CUP scenarios.

FULL BUILD-OUT SCENARIO/PHASED CUP SCENARIO

Construction

Buildout of the Project site, the associated Drew Switchyard Component, and the two Gen-Tie lines would involve standard construction equipment including, but limited to, trucks, scrapers, cranes, and tractors. The presence of this equipment within the Project Area overall during construction would alter views of the area from non-urbanized, agricultural uses to a construction site. However, the views of construction activity from the surrounding vicinity would be temporary and would not involve any designated scenic vistas. Furthermore, no long term staging areas would be permitted near a residence during construction. In addition, the proposed Project represents an expansion of some facilities previously constructed and located within the boundaries of neighboring solar projects including co-locating with the existing Centinela Solar Gen-Tie infrastructure and improvements at the existing Drew Switchyard. Therefore, impacts to a scenic vista are considered **less than significant** during construction under both the Full Build-out Scenario and the Phased CUP Scenario**.**

Operation

The entire Project Area, inclusive of solar field site parcels within the Solar Energy Generation Component, as well as the Drew Switchyard and Gen-Tie Lines Component, is located in a non-urbanized portion of Imperial County with little topographic relief. Long-term modification of views in the area would result from the installation of solar modules and supporting infrastructure (e.g. PV panels, O&M buildings, water tanks, etc.) as well as the associated internal collector lines and the two 400-foot long Gen-Tie lines (if placed above-ground). However, the Project Area is not located in a designated scenic vista, nor has the Imperial County General Plan designated the Project Area as an important visual resource (Imperial County 2016a). In addition, none of the KOPs are located in a designated scenic vista. Under both the Full Build-out Scenario and the Phased CUP Scenario, the tallest structures associated with the Project that could be seen from a distant viewpoint would be the Gen-Tie poles and lines. However, the Project proposes to either underground both or one of the Gen-Tie lines. If placed above-ground, one Gen-tie line would be co-located with the existing Centinela Solar Project facilities, thereby minimizing the need for new infrastructure in the vicinity. Further, because the Project would connect directly to the Drew Switchyard, no additional off-site infrastructure lines would be required. SR 98 aligns along the southern boundary of the Project Site, and directly north of the Drew Switchyard to which the Project proposes to connect. However, SR 98 is not designated as state scenic highways nor are any of the roadways abutting or surrounding the Project Area designated or proposed scenic vistas. Therefore, both the Full Build-out Scenario and the Phased CUP Scenario would result in a **less than significant impact** to a scenic visual resource during Project operation.

Decommissioning/Reclamation

Decommissioning of the Project under the both Full Build-out Scenario and under the Phased CUP Scenario would involve standard construction equipment including, but limited to, trucks, cranes, and tractors. This equipment would be present throughout altering views of the Project Site and appear as a construction area. However, views of the decommissioning activity would be temporary and would not involve designated scenic vistas. Therefore, impacts to a scenic vista are considered **less than significant**

during Project decommissioning and would be a non-issue following reclamation for both the Full Build-out Scenario and the Phased CUP Scenario**.**

Mitigation Measures

None required.

Significance After Mitigation

Not applicable.

Degrade Existing Visual Character or Quality of the Site and its Surroundings

Impact 4.1.2 The proposed Project would convert agricultural fields to a solar energy generation and storage facility thereby replacing flat crops with man-made structures. The Project would not significantly alter the overall character of the Project Area which is currently characterized by agricultural fields and solar energy facilities. Very few residences are in the area and agricultural land is not considered a significant visual resource. Therefore, impacts associated with changes to the existing visual character or quality of the site are considered **less than significant** for both the Full Build-out Scenario and the Phased CUP Scenario**.**

FULL BUILD-OUT SCENARIO/PHASED BUILD-OUT SCENARIO

Construction

Short-term visual impacts would occur in association with construction activities, including introducing heavy equipment (e.g., cranes), staging and materials storage areas and potential dust and exhaust to the Project Area. Residents living near parcels undergoing construction would be subject to these visual changes throughout the duration of construction. If the Project is built out at one time (Full Build-out Scenario), construction is expected to take approximately 18 months. If the individual CUP areas are constructed over time (Phased-Build-out Scenario), construction of each CUP area could take approximately 12 months with construction of some CUP areas potentially overlapping one another. The equipment, materials, and labor involved in buildout of the Project remain similar under both the Full Build-out Scenario and Phased CUP Scenario. However, the Full Build-out Scenario where the Project is constructed over 18-months would result in greater intensity of labor and equipment during one timeframe, and therefore present the worst-case for construction-related visual impacts. The Phased CUP Scenario, which would allow buildout over a period of up ten years would be less intense because no single sensitive receptor (area resident or roadway traveler) would be exposed to visual impacts from construction in a single location for more than the estimated 12 months per CUP area.

While construction equipment and activity may present a visual nuisance, it is temporary and does not represent a permanent change in views. Therefore, impacts associated with degrading the existing visual character or quality of the Project Site during construction are considered **less than significant** under both the Full Build-out Scenario and the Phased CUP Scenario.

Operation

Buildout of the proposed Project would change the existing use of all of the solar field site parcels under the Full Build-Out Scenario or under the Phased CUP Scenario. Currently, each of the solar field site parcels is used for agricultural production (Bermuda grass), the adjacent Centinela Solar Project site is currently developed as a solar energy generation facility, and the Drew Switchyard is an existing SDG&E electricity transmission facility. However, the proposed Project would not significantly alter the existing visual character of the area and its surroundings as a result of converting agricultural land to a solar energy generation with storage facilities because the area is currently characterized by agricultural fields and

solar generation facilities. Further, the Project Site is located in an area where the County has allowed a number of temporary land use conversions to solar energy projects. As such, the proposed Project would appear as an expansion of existing uses. The change in use would appear industrial rather than agricultural but would not displace or damage any outstanding aesthetic feature unique to the area or the County as a whole.

The number of viewers and the duration of views are additional factors to consider in assessing the significance of a visual impact to the character of a site and its surroundings. Very few private residences are in the Project vicinity. Likewise, traffic volumes on surrounding roadways are low and travelers along these roadways would be subject to views of the Project for short durations.

Courts have confirmed that "obstruction of a few private views in a project's immediate vicinity is not generally regarded as a significant environmental impact." (*Bowman v. City of Berkeley (2004) 122 Cal.App.4th 572, 586; see also Banker's Hill, Hillcrest, Park West Community Preservation Group v. City of San Diego (2006) 139 Cal.App.4th 249, 279.*) "Under CEQA, the question is whether a project will affect the environment of persons in general, not whether a project will affect particular persons." (*Mira Mar Mobile Community v. City of Oceanside (2004) 119 Cal.App.4th 477, 492. See also Porterville Citizens for Responsible Hillside Development v. City of Porterville (2007) 157 Cal.App.4th 885*). Furthermore, the solar arrays would cover most of the solar field site parcels, with small areas dedicated to the O&M and energy storage facilities, access roads and the electric collector lines. The solar array grids would provide uniform coverage over the Project site with the access roads forming a rectangular grid layout that would be oriented in a north-south or east-west direction. As such, the configuration of each CUP area would blend with and be consistent with the rectangular and row cropping patterns in the existing adjacent agricultural fields.

Under both the Full Build-out Scenario and the Phased CUP Scenario, the Project is required to comply with A-2 and A-2-R zoning regulations specifying a 30-foot front yard setback, 5- to 30-foot side yard setback, and 10-foot rear yard setback (County Code 90508.06), as well as A-3 zoning regulations specifying a 30-foot front yard setback, 10-foot side yard setback, and 10-foot rear yard setback(County Code 90509.06) as applicable based on the existing zoning. The Project is also required to comply with the height limits prescribed by County Code 90508.07 (except for the Gen-Tie poles that would be required to comply with the height limits (i.e. 180 feet) prescribed in the proposed height variance request.)

Thus, overall, operation of the Project under both the Full Build-out Scenario and the Phased CUP Scenario would result in a **less than significant impact** with regard to degrading the existing visual character or quality of the site.

Decommissioning/Reclamation

Short-term visual impacts would occur in association with decommissioning activities, including introducing heavy equipment (e.g., cranes), staging and materials storage areas and potential dust and exhaust to the Project Area. Residents living near CUP areas undergoing decommissioning would be subject to these visual changes throughout the duration of decommissioning activities. The equipment, materials, and labor involved in Project Site decommissioning remain similar whether it is decommissioned at once in its entirety (as a result of the Full-Build-out Scenario) or spread out by individual CUP Area (as a result of the Phased CUP Scenario). However, if the Full Build-out Scenario were decommissioned at one time, the decommissioning activities would result in greater (i.e. worst-case) intensity of labor and equipment and present the greatest visual impact to residents and travelers.

Portions, if not all, of the decommissioning would be visible to the residences located near CUP areas. Likewise, travelers along I 8, SR 98, Brockman Road, Rockwood Road, Kubler Road, and other roadways

adjacent to the Project Site would also experience visual changes associated with decommissioning activities. However, as various aspects of decommissioning are completed (e.g., PV panels, electrical lines, O&M structures), the corresponding equipment (e.g. cranes) would be eliminated from view. While decommissioning equipment and activity may present a visual nuisance, it is temporary and does not represent a permanent change in views. Thus, the impact of degrading the existing visual character or quality of the site for the Full Build-out Scenario and the Phased CUP Scenario is considered a **less than significant impact** during decommissioning and would be eliminated entirely following reclamation.

Mitigation Measures

None Required.

Significance After Mitigation

Not Applicable.

New Source of Substantial Light or Glare

Impact 4.1.3 The proposed Project includes non-reflective PV panels which are not anticipated to create glare. Likewise, the proposed lighting system would be designed to provide minimum illumination. Therefore, impacts associated with creation of substantial light and glare are considered **less than significant** for both the Full Build-out Scenario and the Phased CUP Scenario**.**

FULL BUILD-OUT SCENARIO/PHASED BUILD-OUT SCENARIO

Construction

Light and Glare

There are no existing sources of light or glare at the Project Site, other than occasional glints from agricultural equipment working in the fields. Short-term sources of lighting would be introduced to the Project Area during construction as part of site security, materials storage and staging areas. Lighting at construction and staging areas throughout the Project Area would be designed and installed such that light bulbs and reflectors would not be visible from public viewing areas, and would not cause reflected glare in compliance with the County's lighting ordinance. Thus, impacts associated with a substantial increase in new sources of light and glare are considered **less than significant** under both the Full Build-out Scenario and the Phased CUP Scenario during Project construction.

Operation

Light

The solar field site parcels and surrounding area are currently used for agricultural production and as such is not a source of light or glare. A lighting system is proposed as part of the Project which includes outdoor lighting in the common services areas secured to structures, equipment, walls and poles to provide illumination for maintenance vehicles and security. As described in Chapter 2.0, Project Description, the Project's lighting system would provide operation and maintenance personnel with illumination in both normal and emergency conditions. Lighting would be designed to provide the minimum illumination needed to achieve safety and security objectives and would be shielded and oriented to focus illumination on the desired areas, minimizing light spillover.

As previously noted, the proposed Project may be built out at one time over an 18-month period under the Full Build-out Scenario, or by each CUP Area over a period of up to 10 years under the Phased-Build-out Scenario. If built separately, each CUP area may have its own O&M building. However, the lighting system would be designed to provide nighttime lighting levels consistent with applicable Imperial County lighting standards. Thus, impacts associated with a substantial increase in new sources of light are

considered **less than significant** for both the Full Build-out Scenario and the Phased CUP Scenario during Project operation.

Glare

PV modules are designed to absorb as much light as possible to maximize efficiency. In addition, PV modules use anti-reflective coatings to decrease reflection and increase conversion efficiency. The time and duration of any potential reflections from the panels are determined by the orientation of the panels and the position of the observer in relation to the panels. All PV solar projects (regardless of the type of mounting structure) orient the panels perpendicular to the sun or as close to perpendicular as possible to maximize solar absorption and energy output. This results in the panels being oriented towards the sun as much as possible throughout the day and the course of the year as the position of the sun changes.

Table 4.1-2 summarizes the sensitive visual receptors directly adjacent, or in close proximity, to the Project Boundaries (refer also to **Figure 4.1-1** and **Appendix B**, Glare Study).

TABLE 4.1-2
SUMMARY OF SENSITIVE VISUAL RECEPTORS

Receptor Type	Location
Motorist	SR 98 East-Bound (see **Figure 4.1-4**)
Motorist	SR 98 East-Bound Left (see **Figure 4.1-5**)
Motorist	SR 98 West-Bound (see **Figure 4.1-6**)
Motorist	Drew Road North-Bound (see **Figure 4.1-7**)
Motorist	Drew Road South-Bound (see **Figure 4.1-8**)
Motorist	Kubler Road East-Bound (see **Figure 4.1-9**)
Motorist	Kubler Road West-Bound (see Figure **4.1-10**)
Motorist	Pulliam Road North-Bound (see Figure **4.1-11**)
Motorist	Pulliam Road South-Bound (see Figure **4.1-12**)
Residential KOP 1	North of Fisher Road, west of Drew Road
Residential KOP 2	Drew Road at Fisher Road
Residential KOP 3	Drew Road at Fisher Road
Residential KOP 4	Drew Road at Fisher Road
Residential KOP 5	Drew Road at Fisher Road
Residential KOP 6	Drew Road at Fisher Road
Residential KOP 7	Brockman Road, north of Kubler Road
Residential KOP 8	Kubler Road at Pulliam Road
Residential KOP 9	Kubler Road at Pulliam Road
Residential KOP 10	Mandrapa Road at Kubler Road
Residential KOP 11	Mandrapa Road at Kubler Road
Residential KOP 12	Mandrapa Road at Kubler Road
Residential KOP 13	Brockman Road at Brockman Drain
Residential KOP 14	North of SR 98 at Signal Road
Residential KOP 15	North of SR 98 at Signal Road
Residential KOP 16	SR 98 at Drew Road / Yuha Cutoff
Residential KOP 17	SR 98 at Brockman Road
Residential KOP 18	SR 98 west of Brockman Road

Source: Power Engineers, Inc. 2018.

The KOPs at 18 surrounding residential structures and four roadways adjacent the site (see **Figure 4.1-4** through **Figure 4.1-12**). As shown in **Table 4.1-2**, each of the KOP areas were found to have zero annual minutes of yellow or green glare as a result of Project implementation (Power Engineers, Inc. 2018).

Furthermore, the Glare Study determined no glare will be visible at the KOPs evaluated from the proposed solar operations due to the orientation of the PV panels and their rotational limits. The 60 degree rotational limits cause any resulting glare to be redirected above and away from all sensitive viewers throughout the day and year. Also, the amount of light reflected upwards would not be expected to potentially affect air traffic in the area (Power Engineers, Inc. 2018). As such, the PV solar modules from the individual CUPs, or the Full Build-out Scenario, would not create a significant source of glare during sunlight hours. Further, the Project would not use other reflective materials such as fiberglass, vinyl/plastic siding, brightly painted steel roofs, or reflective forms of aluminum and galvanized products that have the potential to create on- and off-site glare. Therefore, buildout under the Full Build-out Scenario or the Phased CUP Scenario is not anticipated to create a new source of glare that would adversely affect day or nighttime views in the area. Thus, impacts associated with a substantial increase in operational glare are considered **less than significant** for both the Full Build-out Scenario and the Phased CUP Scenario**.**

Decommissioning/Reclamation

Light and Glare

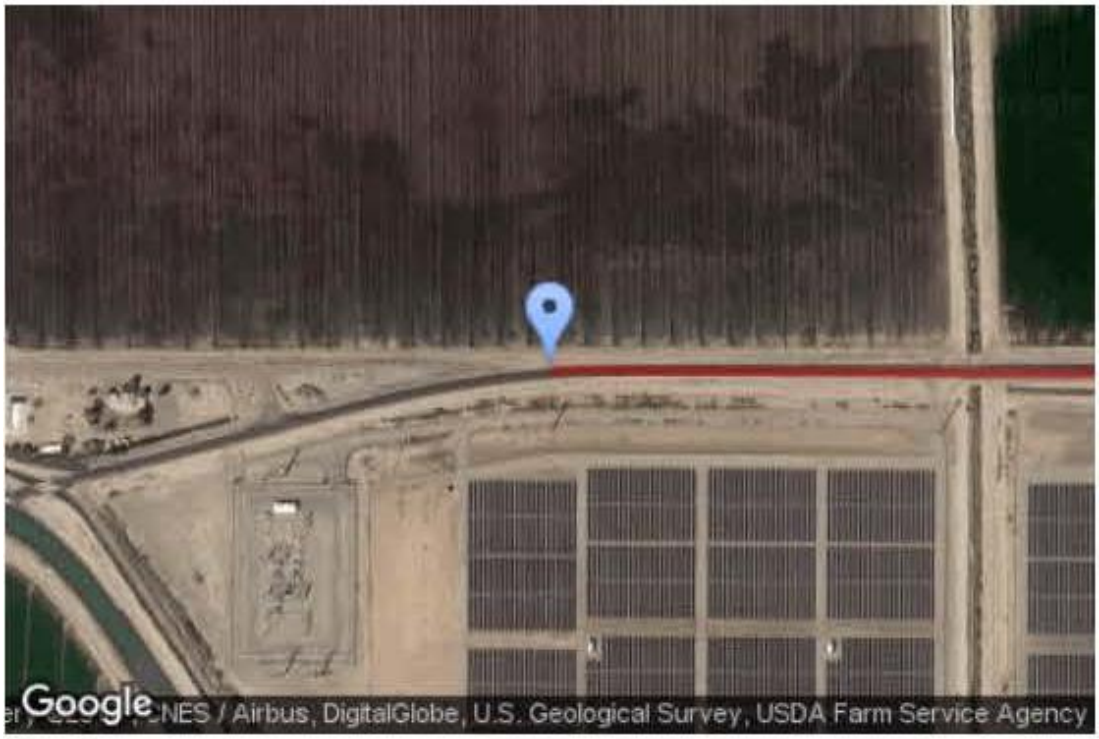
Short-term sources of lighting would be introduced to the Project Area during decommissioning as part of site security, materials storage and staging areas. Lighting at construction and staging areas throughout the Project Area would be designed and installed such that light bulbs and reflectors would be angled downward to limit light spillage on to adjacent lands and minimize nighttime glare. Thus, impacts associated with a substantial increase in new sources of light and glare are considered **less than significant** under both the Full Build-out Scenario and the Phased CUP Scenario during Project decommissioning. Moreover, no light or glare would be present following reclamation.

Mitigation Measures

None required.

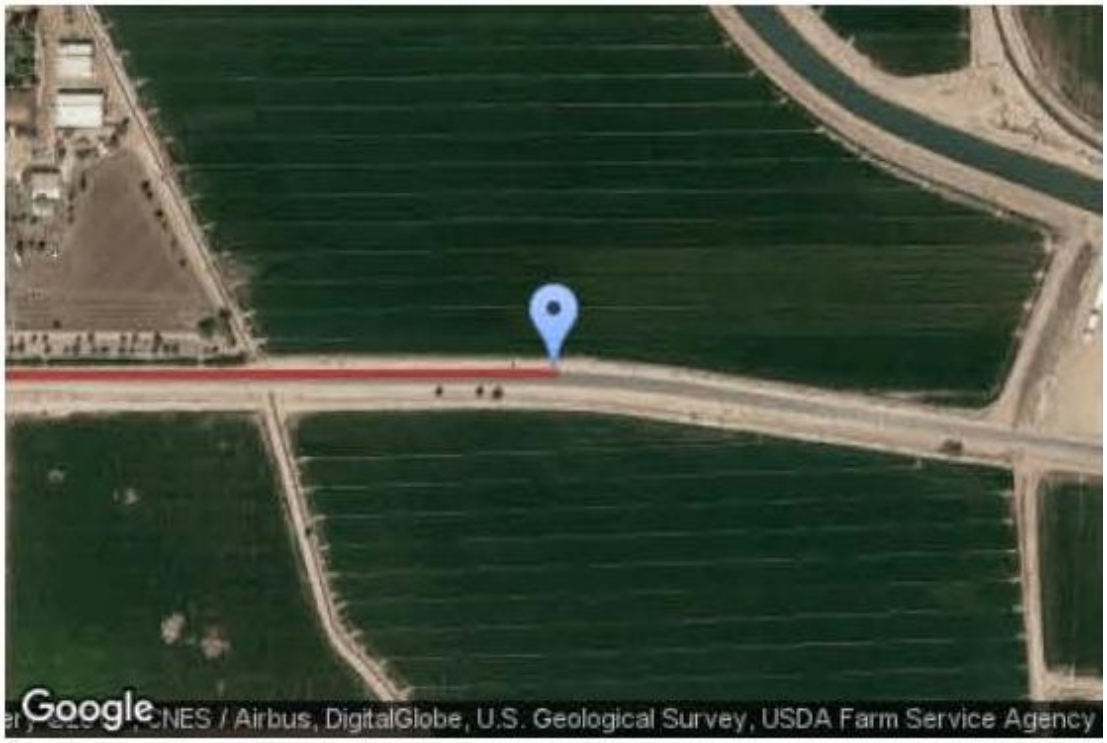
Significance After Mitigation

Not applicable.



Source: Power Engineers 2018.

FIGURE 4.1-4
SR 98 EAST-BOUND SENSITIVE VISUAL RECEPTOR

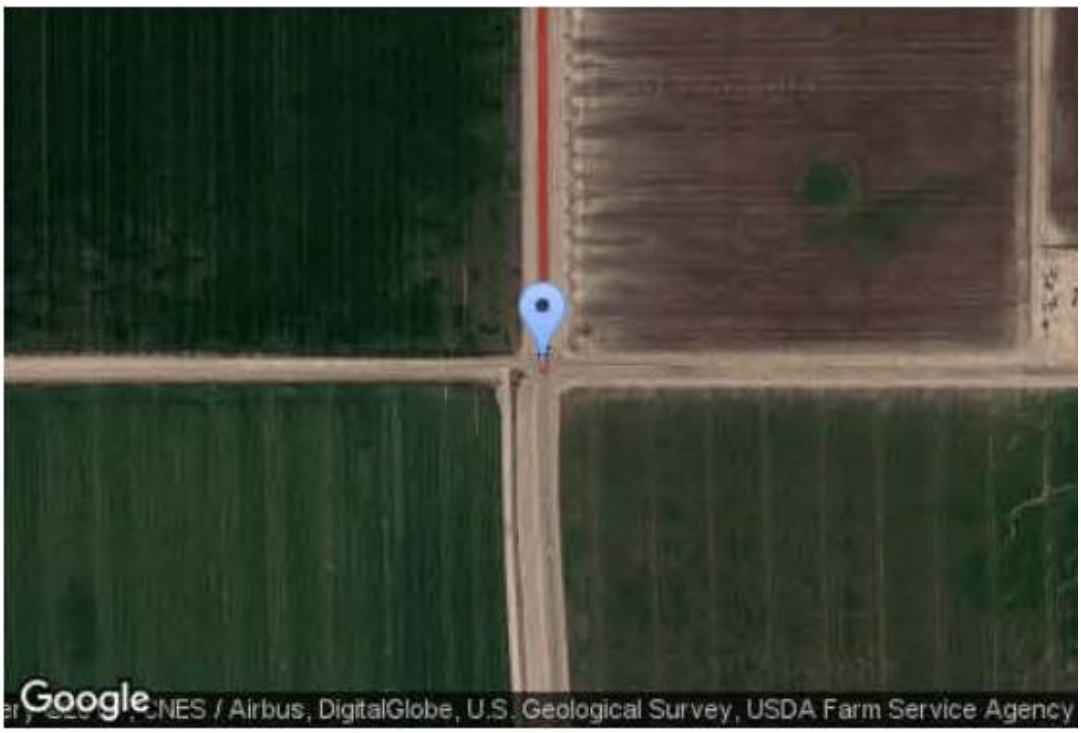


Source: Power Engineers 2018.

FIGURE 4.1-5
SR 98 EAST-BOUND LEFT SENSITIVE VISUAL RECEPTOR

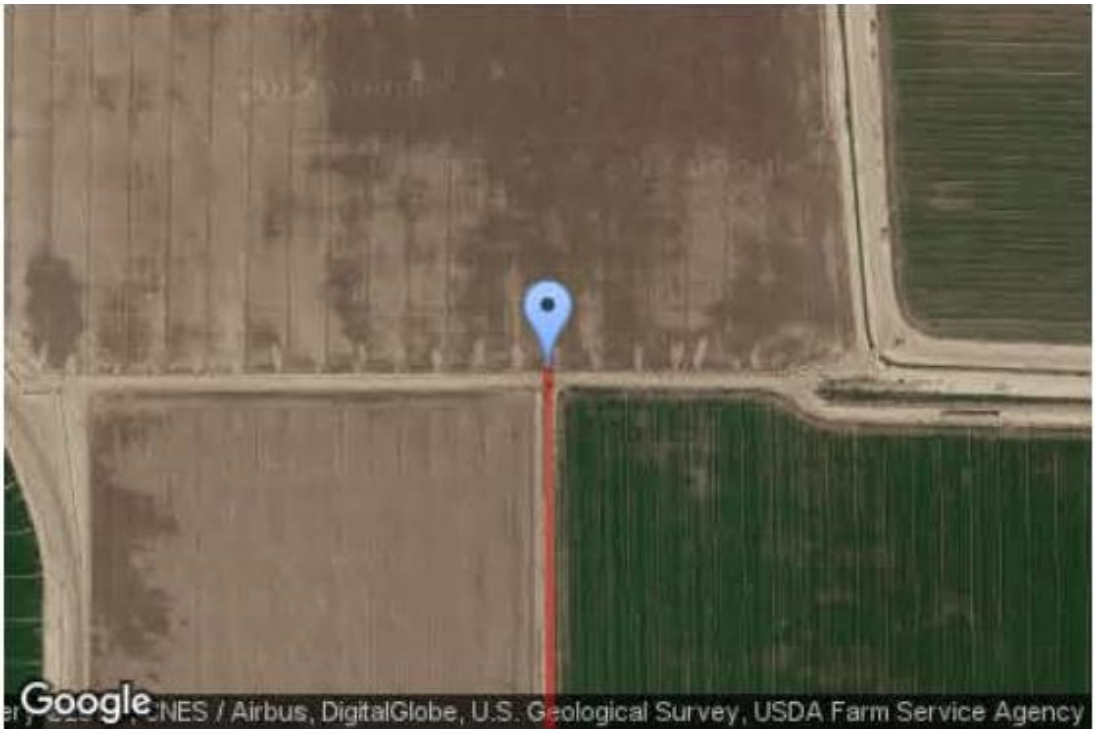
Source: Power Engineers 2018.

FIGURE 4.1-6
SR 98 WEST-BOUND SENSITIVE VISUAL RECEPTOR



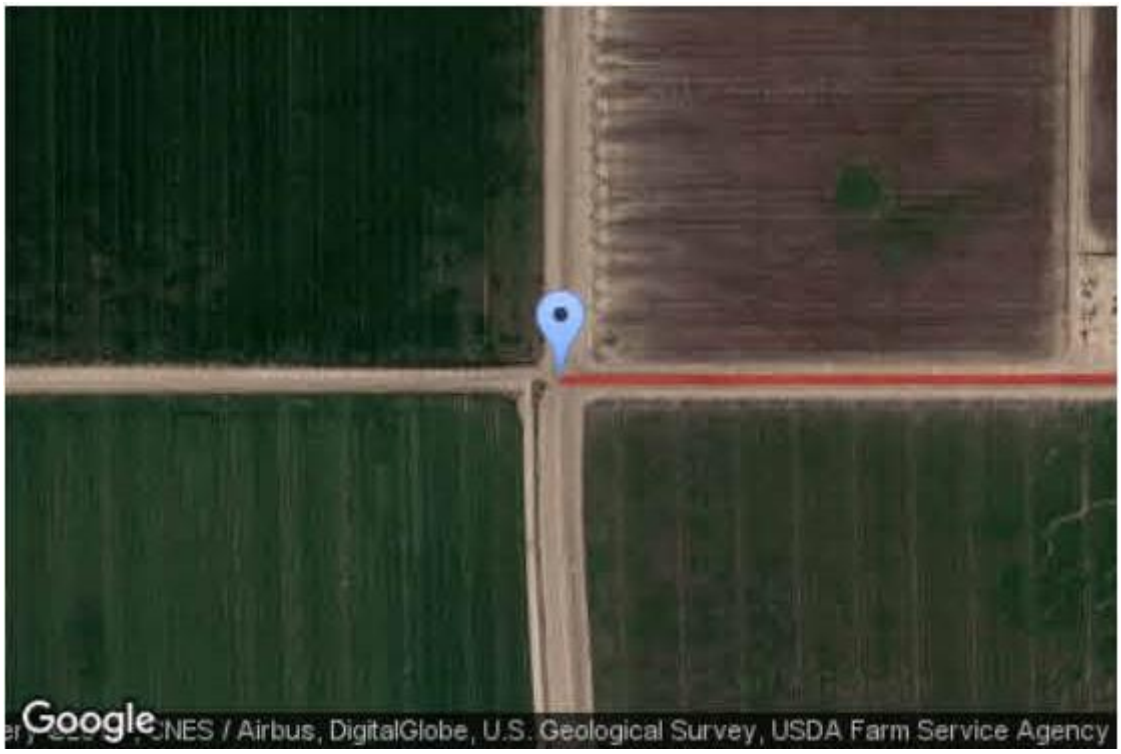
Source: Power Engineers 2018.

FIGURE 4.1-7
DREW ROAD NORTH-BOUND SENSITIVE VISUAL RECEPTOR



Source: Power Engineers 2018.

FIGURE 4.1-8
DREW ROAD SOUTH BOUND SENSITIVE VISUAL RECEPTOR

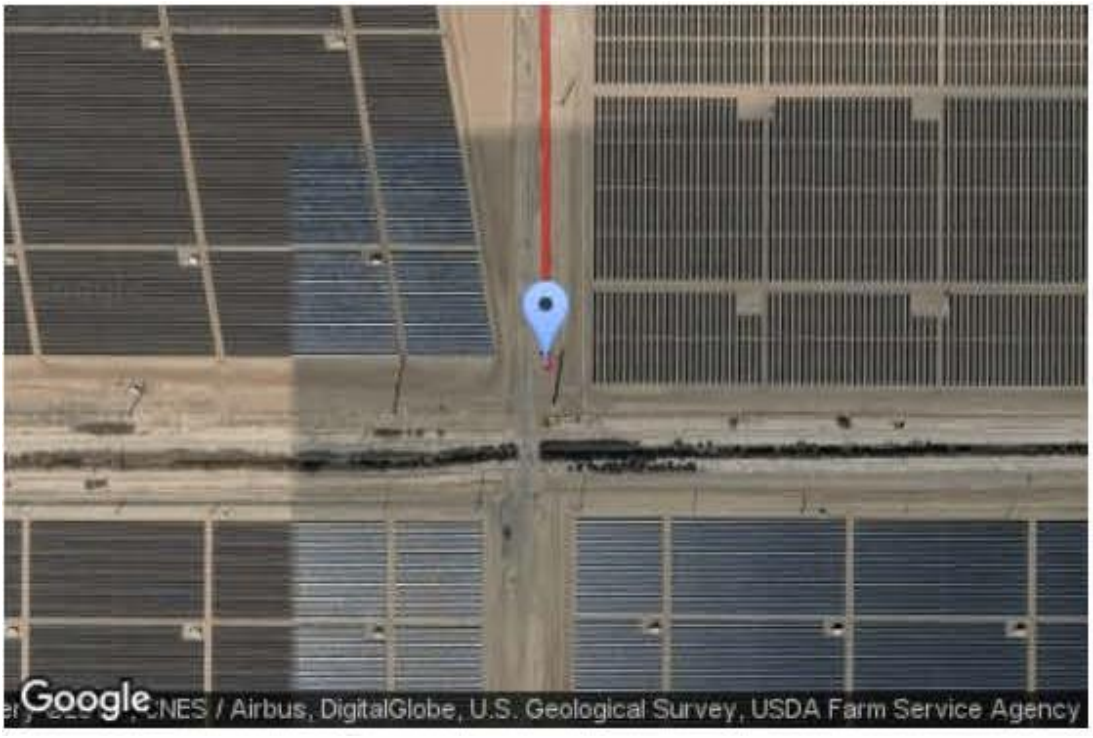


Source: Power Engineers 2018.

FIGURE 4.1-9
KUBLER ROAD EAST-BOUND SENSITIVE VISUAL RECEPTOR

Source: Power Engineers 2018.

FIGURE 4.1-10
KUBLER ROAD WEST-BOUND SENSITIVE VISUAL RECEPTOR



Source: Power Engineers 2018.

FIGURE 4.1-11
PULLIAM ROAD NORTH BOUND SENSITIVE VISUAL RECEPTOR

Source: Power Engineers 2018.

FIGURE 4.1-12
PULLIAM ROAD SOUTH BOUND SENSITIVE VISUAL RECEPTOR

4.1.4 CUMULATIVE SETTING, IMPACTS AND MITIGATION MEASURES

A. CUMULATIVE SETTING

The cumulative setting for aesthetics, light, and glare includes the unincorporated areas of Imperial County surrounding the Project Site. In a larger context, the cumulative setting also includes proposed, approved and reasonably foreseeable projects in the region identified in Table 3.0-1 in Chapter 3.0, Introduction to the Environmental Analysis and Assumptions Used. The focus of this cumulative analysis is on the project's contribution to cumulative visual resources impacts.

B. CUMULATIVE IMPACTS AND MITIGATION MEASURES

Cumulative Visual and Light and Glare Impacts

Impact 4.1.4 Implementation of the proposed Project in combination with proposed, approved and reasonably foreseeable projects in the vicinity of the Project Site would not significantly alter the overall character of the Project Area which is currently characterized by agricultural fields and solar generation facilities. Very few residential homes are in the area nor are there any scenic resources within the Project viewshed. Potential visual impacts by other cumulative projects would be subject to review and approval by the County on a project-by-project basis. Therefore, the Project's contribution to cumulative aesthetics, light and glare impacts is considered **less than cumulatively considerable** for both the Full Build-out Scenario and the Phased CUP Scenario.

FULL BUILD-OUT SCENARIO/PHASED BUILD-OUT SCENARIO

Construction

Scenic Vistas and Visual Character

The proposed Project Area is surrounded by mostly agricultural land with no scenic vistas or outstanding aesthetic features. The proposed Project may be developed in up to five phases under the Phased Buildout Scenario over several months per phase, or at one time over 18 months under the Full Build-out Scenario. Either method would result in short-term changes to the visual character of the solar field site parcels associated with the presence of equipment, site clearance, and solar facility installation. Similarly, construction of any other cumulative projects in the vicinity would be limited in duration and impact to scenic vistas and the overall visual character of the area. Therefore, the proposed Project's construction activities would result in a **less than cumulatively considerable** contribution to cumulative visual character impacts under the Full Build-out Scenario or Phased CUP Scenario. Likewise, because aesthetic impacts are considered on a project-by-project basis, cumulative impacts to scenic vistas and visual character considered **less than cumulatively considerable** during construction for both the Full Build-out Scenario and the Phased CUP Scenario**.**

Light and Glare

As described under Impact 4.1.3, short-term sources of lighting would be introduced to the Project Area during construction in association with site security, materials storage and staging areas. However, in compliance with the County's lighting ordinance, lighting throughout the Project Area would be designed and installed such that light bulbs and reflectors would not be visible from public viewing areas, and would not cause reflected glare. Impacts associated with light and glare are mitigated on a project-by-project basis. Therefore, the Project's contribution to impacts associated with new sources of light and glare are considered **less than cumulatively considerable** during Project construction under both the Full-Build-out Scenario and the Phased CUP Scenario during construction. Likewise, because light and glare impacts are considered on a project-by-project basis, cumulative impacts resulting from light and glare considered **less than cumulatively considerable** during construction for both the Full Build-out Scenario and the Phased CUP Scenario**.**

Operation

Scenic Vistas and Visual Character

In addition to the proposed Project, several other solar projects are either under construction or are proposed to be built in the general vicinity of the Project Site. These projects include Centinela Solar Energy, Acorn Solar, Imperial Solar Energy Center South, Calexico Solar, Iris Solar Farm and the Mount Signal Solar Farm (refer to Figure 3.0-1 in Chapter 3.0, Introduction to the Environmental Analysis and Assumptions Used). Operation of the proposed Project, in conjunction with these existing, approved, proposed, and reasonably foreseeable Projects, would contribute to changes to the character of the cumulative visual setting from agricultural land to solar energy facilities. However, each proposed, approved and reasonably foreseeable project is designed in grids of rows of solar panels that complement the row-like patterns of agricultural field crops in the area. Additionally, the County of Imperial allows for development of parcels zoned for agriculture with issuance of a Conditional Use Permit, giving the County the authority to impose mitigation measures to reduce potentially significant impacts from any project on a project-by-project basis. Furthermore, each project is required to comply with setback requirements applicable to the agricultural zone. The projects in the vicinity have all been located in an area with extremely low density so very few viewers (motorists, residents) are impacted. Moreover, neither the combined effect of the existing and reasonably foreseeable projects nor the incremental effect of the proposed Project would result in the loss of scenic views, cause damage to a scenic resource, or

compromise the aesthetic of an otherwise outstanding landscape or feature of high aesthetic value. As views of Mount Signal and distant views of mountains would not be obstructed by any feature of the Project, the contribution of the proposed Project to changes in the visual character of the area during operation would be **less than cumulatively considerable** under both the Full Build-out Scenario and Phased CUP Scenario. Likewise, because aesthetic impacts are considered on a project-by-project basis, cumulative impacts to scenic vistas and visual character considered **less than cumulatively considerable** during operation

Light and Glare

Light and glare impacts are typically addressed through the use of non-reflective building materials, installing light fixtures that point downward or shielding light sources. The Project's proposed lighting system would provide operation and maintenance personnel with illumination in both normal and emergency conditions. Lighting will be designed to provide the minimum illumination needed to achieve safety and security objectives and will be shielded and oriented to focus illumination on the desired areas, minimizing light spillover. All projects are required to comply with the County's lighting ordinance to avoid excessive illumination and light spillage on adjacent properties. The portion of the County where the Project is proposed is largely undeveloped and unlit. Lighting proposed for the Project and other cumulative projects will be pointed downward and shielded to focus illumination only on the desired areas in accordance with the County's lighting ordinance. Therefore, the Project's incremental contribution to impacts associated with new sources of light would be **less than cumulatively considerable** during Project operation under the Full-Build-out Scenario and the Phased CUP Scenario.

As discussed above, PV panels would cover the majority of the solar field site parcels. PV panels are non-reflective and none of the materials proposed are anticipated to generate glare. Moreover, the Glare Study prepared for the Project determined no glare will be visible at the KOPs evaluated as a result of Project implementation due to the orientation of the PV panels and their rotational limits (Power Engineers 2018). Therefore, the Project's incremental contribution to impacts associated with new sources glare would be **less than cumulatively considerable** during Project operation under the Full-Build-out Scenario and the Phased CUP Scenario during operation.

The proposed, approved and reasonably foreseeable projects in the region identified in Table 3.0-1 would be required to undergo glare analysis and incorporate anti-reflective, non-glare building materials or design features as appropriate to mitigate glare impacts on a project-by-project basis.

Decommissioning/Reclamation

Scenic Vistas and Visual Character

The Project proposes decommissioning of the Project Site by CUP area as each CUP expires. Under the worst case Full-Buildout Scenario, decommissioning of all CUP areas would occur at one time, thereby increasing the intensity of activity at the Project Site over a shorter period of time. Either method would result in short-term changes to the visual character of the Project area associated with the presence of equipment and decommissioning activities. As with construction, the Project's contribution to changes to the area's visual character during decommissioning would be **less than cumulatively considerable** based on the limited duration of these activities under both the Full Build-out Scenario and Phased CUP Scenario. Likewise, because aesthetic impacts are considered on a project-by-project basis, cumulative impacts to scenic vistas and visual character are considered **less than cumulatively considerable** during decommissioning and completely eliminated following reclamation for both the Full Build-out Scenario and the Phased CUP Scenario**.**

Light and Glare

As with construction, short-term sources of lighting would be present in the Project area during decommissioning activities in association with site security, materials storage and staging areas. However, in compliance with the County's lighting ordinance, lighting throughout the Project Area would be designed and installed such that light bulbs and reflectors would not be visible from public viewing areas, and would not cause reflected glare. Impacts associated with light and glare are mitigated on a project-by-project basis. Impacts associated with light and glare are mitigated on a project-by-project basis. Therefore, the Project's contribution to impacts associated with new sources of light and glare are considered **less than cumulatively considerable** during Project construction under both the Full-Build-out Scenario and the Phased CUP Scenario. Likewise, because light and glare impacts are considered on a project-by-project basis, cumulative impacts resulting from light and glare considered **less than cumulatively considerable** during decommissioning and would be eliminated entirely following reclamation for both the Full Build-out Scenario and the Phased CUP Scenario**.**

Mitigation Measures

None required.

Significance After Mitigation

Not Applicable.

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