4.1 AESTHETICS

4.1.1 Regulatory Setting

This section presents a description of the laws, policies, and plans relevant to aesthetics and glare.

National Environmental Policy Act (NEPA)

The National Environmental Policy Act (NEPA) is a federal law administered by the Environmental Protection Agency (EPA) that requires federal agencies to consider environmental values in the decision-making process. The federal agencies must consider environmental impacts and consequences of proposed actions and reasonable alternatives that could potentially reduce impacts (USEPA 2014a).

Bureau of Land Management

The Bureau of Land Management (BLM) operates under the Department of the Interior in managing 15.2 million acres of public land in California. The BLM's Strategic Framework is centered on sustainability, heritage, and community, which guide the BLM in its long-term management of public lands. Under its commitment to sustainability, the BLM is working to facilitate the development of solar, wind, and geothermal energy projects on BLM land including the implementation of the Desert Renewable Energy Conservation Plan (DRECP). Imperial County is located within the BLM California Desert District with a field office in El Centro (BLM 2014).

Federal Land Policy and Management Act of 1976

The Federal Land Policy and Management Act of 1976 (FLPMA) (43 United States Code [U.S.C.] 1701) and the U.S. Department of the Interior's (DOI) *Bureau of Land Management* (BLM) *Land Use Planning Handbook* (BLM 2005) both emphasize the importance of protecting the quality of scenic resources on public lands. FLPMA sections relevant to The Desert Renewable Energy Conservation Plan (DRECP or Plan) are:

> Section 102(a): "…The public lands [shall] be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archaeological values..."
>
> Section 103(c): Identifies "scenic values" as resources for public management. Section 201(a): "…The Secretary shall prepare and maintain on a continuing basis and inventory of all public lands and their resources and other values (including…scenic values)..."
>
> Section 505(a): "…Each right-of-way shall contain terms and conditions which will…minimize damage to the scenic and aesthetic values..."

FLPMA's legal mandate to protect the quality of scenic resources on public lands is carried out by BLM and detailed in BLM's Visual Resource Management (VRM) system, described below.

Bureau of Land Management Visual Resource Inventory and Management Guidance

BLM, through FLPMA, is charged with protecting the scenic value of public lands. To accomplish this, BLM has developed and uses an analytical process, the VRM system, to identify, set, and maintain those

scenic values. The VRM system has two key aspects: inventorying visual resources and managing those resources (DRECP 2014).

Through the inventory process, BLM identifies the visual resources of a given area and, based upon specific standards, assigns each area to an inventory class. This process involves rating the resource's visual qualities, measuring public concern, and determining the extent to which an area is visible from travel routes and other observation points. This process is further described in detail in BLM Manual H-8410-1, Visual Resource Inventory (VRI) (DRECP 2014).

California Environmental Quality Act

CEQA is a State document that is part of the California Code of Regulations (C.C.R.). CEQA requires projects to undergo environmental review; depending on the potential effects, a more substantial review may need to be conducted in the form of an EIR. In an EIR, mitigation measures are proposed for any potentially significant impacts in order to reduce the level of impact, and feasible alternatives are considered (CNRA 2014). This EIR has been prepared as a Programmatic EIR pursuant to CEQA Guidelines, Section 15168. Completion of the Programmatic EIR would allow future individual renewable energy projects to "tier" off this environmental document. The proposed Project would be implemented on a "project-by-project" basis based on County approval of individual renewable energy projects. Future renewable energy projects developed per the proposed Project would need to be reviewed in the context of this Programmatic EIR to determine if additional environmental documentation would be required.

California Department of Transportation

The California Department of Transportation (Caltrans) manages the California Scenic Highway Program. The goal of the program is to preserve and protect scenic highway corridors from changes that would affect the aesthetic value of the land adjacent to the scenic corridor (Caltrans 2008). No designated state scenic highways occur in Imperial County; however, State Route (SR-) 111 is an eligible state scenic highway from the County border to Bombay Beach. SR-78 is an eligible state scenic highway from the County border to SR-86 near Julian. Interstate 8 (I-8) is an eligible highway from the County border to SR-98 near Coyote Wells, and Borrego-Salton Seaway (County Highway S-22) is an eligible scenic highway from Salton City to Borrego Springs in San Diego County.

County of Imperial General Plan

The Imperial County General Plan includes policies which aim to protect and conserve scenic resources and open spaces within Imperial County. The *Conservation and Open Space Element* and the *Land Use Element* provide goals and objectives for protecting and maintaining the aesthetic character of the County. In addition, the *Circulation and Scenic Highways Element* contains policies geared toward the protection and enhancement of scenic highway resources.

The following policies are related to aesthetics and glare:

- Conservation And Open Space Element

  Goal 7: The aesthetic character of the region shall be protected and enhanced to provide a pleasing environment for residential, commercial, recreational, and tourist activity.

- Land Use Element

  Objective 3.4: Protect/improve the aesthetics of Imperial County and its communities.

- Circulation and Scenic Highways Element

  Policy 9 (b): The County shall emphasize protection of scenic highway resources in all County actions affecting land use.

4.1.2 Existing Environmental Setting

Imperial County extends over 4,597 square miles between Riverside County, the Mexican border, San Diego County, and the State of Arizona. The visual character of Imperial County varies greatly. It includes natural scenic visual resources such as deserts, sand dunes, mountains, recreation areas, and the Salton Sea. It includes agricultural areas, urban areas, and areas of solar development.

Scenic Visual Resources

Imperial County contains several scenic visual resources, including desert areas, sand hills, mountains, and the Salton Sea. Each of these visual resources is described below.

Desert Areas

The desert areas include the Yuha Desert, the West Mesa, lower Borrego Valley, East Mesa, and Pilot Knob Mesa.

The Yuha Desert is located in the southwest portion of the County within the West Mesa area and is intersected east/west by I-8. As viewed from I-8, its seemingly barren landscape contrasts sharply against the surrounding mountains. 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, that were constructed by prehistoric Native Americans. Geoglyphs are rare and are one of the most fragile archeological features known. The most visually prominent plant of the Yuha Desert is the ocotillo, which can stand up to 15 feet in height.

The desert of the West Mesa area is bordered on the east by Superstition Mountain and the surrounding Superstition Hills and on the west by the Fish Creek Mountains. The lower Borrego Valley desert area is located in the northwestern area of the County, bordered on the north by the Santa Rosa Mountains, on the south by the Vallecito Mountains, and on the east by the Salton Sea. The East Mesa area lies to the west of the Algodones Sand Dunes and to the east of the agricultural areas of the Imperial Valley. The Pilot Knob Mesa area is located just east of the Algodones Sand Dunes and west of the Cargo Muchacho Mountains.

The vegetation of these desert areas consists of the Creosote Scrub community. Dominant in this community is the creosote bush. Other plants include ocotillo, mesquite, palo verde, saltbush, and encelia. Also contributing to the scenic quality of the desert areas are the springtime blooms of desert wildflowers. In springtime, up to 60 species of annuals may be viewed. A typical scene would include large, white evening primroses gleaming over variegated carpets of sand verbena, sunny desert dandelion, and desert sunflower, which are often joined by desert marigold, coreopsis, and other daisy family species (ICPDS 2009).

Algodones Sand Dunes

The Algodones Sand Dunes are the largest mass of sand dunes in California. This dune system covers approximately 160 square miles, extending for more than 40 miles along the eastern edge of the Imperial Valley agricultural region in a band averaging 5 miles wide. They extend lengthwise in a northwest by southeast direction and are situated between the East Mesa and Pilot Knob Mesa areas. They are currently bisected east/west by SR-78 between Brawley and Glamis and by I-8 between El Centro and Yuma. Consisting of shifting sands, the dunes attain a thickness of at least 200 feet in their central parts. Rising to heights of over 300 feet above the surrounding desert floor, the dunes are a well-known landmark to local residents and the thousands of highway travelers who pass by them every year. These dunes represent a unique visual resource of Imperial County.

Tremendous earth upheavals that elevated the area above the ocean some 200 million years ago and the constant action of erosional forces over the ancient Salton Sea shoreline have all had a part in sculpting this vast region of dunes. For millions of years, the climate of California's desert area was tropical; but as the earth's crust shifted along the San Andreas Fault, the coastal mountains were pushed up, cutting off the moisture-laden air coming from the ocean. At the same time, the interior plains of southern California began to drop, forming a basin known as the Salton Sink. The Colorado River meandered over a wide area, periodically diverted by silt deposits remaining after floods. Sometimes the river flowed into the Gulf of California as it does today, while at other times it turned westward into the Salton Sink. Each time the Salton Sink received the river flow, a large freshwater lake formed. Scientists refer to this ancient body of water as Lake Cahuilla. The last Lake Cahuilla covered much of the Imperial, Coachella, and Mexicali valleys as late as 1450.

The most popular theory holds that the Imperial Sand Dunes were formed from windblown beach sands of Lake Cahuilla. The prevailing westerly and northwesterly winds blew the sands eastward from the old lakeshore to their present location. This process continues to this day.

Prevailing winds cause the dunes to migrate toward the southeast at the rate of approximately 1 foot per year. The sand dunes played a major role in early exploration, travel, and development in Imperial County and have long been an obstacle to travelers moving east and west. Though a few pioneers did manage to cross with horse and mule pack trains, this natural barrier continued to hinder California's southern commerce until the first road across the dunes was built in 1911.

The first road, built by volunteers from Yuma, the Imperial Valley, and San Diego, was known as the “auto railroad.” In 1916, the California Highway Commission, which assumed responsibility for the trans-dunes highway in June 1915, built an improved plank road. The Plank Road lasted until 1926, when it was replaced by a new two-lane asphalt road. The Imperial Sand Dunes are considered a significant visual resource in the County due to their unique scenic qualities, historic features, and prominent visibility to a large number of people.

Mountains

Mountains are another significant visual resource in Imperial County. On the west side of the County are the eastern foothills of the Peninsular Range. These foothills include the In-Ko-Pah or Jacumba Mountains, the Coyote Mountains, and the Fish Creek Mountains. The Santa Rosa Mountains are located in the northwestern corner, and the Chocolate Mountains are in the northeastern part of the County. Superstition Mountain and the surrounding Superstition Hills, located in the West Mesa area southeast of lower Borrego Valley and west of Westmorland and Brawley, are visible from much of the

County. Mount Signal, located along the International Border on the eastern edge of the Yuha Desert, west of Calexico, is visible from the entire Imperial Valley (ICPDS 2009).

The Chocolate Mountains, so named because of their dark color, are located in the northeastern portion of the County, stretching northwest by southeast between Riverside County and the Colorado River. They are bisected by SR-78 between Glamis and the Palo Verde area. These mountains reach an elevation of 2,700 feet and are highly visible from throughout the County. They are extremely rugged and virtually undeveloped and used as a Naval Gunnery Range (ICPDS 2009).

Superstition Mountain and the surrounding Superstition Hills are prominent landmarks that are visible from most of Imperial County. They are located in the West Mesa area, southeast of lower Borrego Valley and west of Westmorland and Brawley. These are clearly visible looking north from I-8 west of El Centro and from SR-86 between El Centro and the Salton Sea. A major landmark is Mount Signal, located along the International Border on the eastern edge of the Yuha Desert, west of Calexico. Mount Signal is considered visible from the entire Imperial Valley (ICPDS 2009).

Salton Sea

The Salton Sea is located in the northwestern portion of the County and extends into Riverside County. The Salton Sea fluctuates in size and capacity, but is currently about 35 miles long, 15 miles wide, occupies 376 square miles, and contains about 7.5 million acre-feet of water (DRECP EIR/EIS 2014). The Salton Sea has been sustained by agricultural drainage from the Imperial, Coachella, and Mexicali valleys; rainfall; storm runoff from the surrounding mountains; and groundwater inflow. Because Salton Sea exists in a closed basin, the only outflow is evaporation, resulting in a rising level of salinity. Despite the salinity problems in the Salton Sea, the area represents an important wildlife habitat area and provides migrating and wintering habitat for thousands of waterfowl and other birds. Masses of these birds are visible from the shores of the Salton Sea. The Salton Sea represents a unique visual resource because of its massive size, its location in a desert area, and its value to wildlife.

Recreation Areas

The Picacho State Recreation Area contains some prominent visual resources as well. Unique scenic values are created by volcanic formations that rise several hundred feet from the valley floor.

Scenic Highways

Caltrans manages the California Scenic Highway Program.

The goal of the program is to preserve and protect scenic highway corridors from changes that would affect the aesthetic value of the land adjacent to the scenic corridor (Caltrans 2008). No designated state scenic highways occur in Imperial County; however, the following four routes within Imperial County are considered eligible for state Scenic Highway Designation:

- **I-8:** The initial segment for future Scenic Highway Designation status lies between the San Diego County line and its junction with SR-98 near Coyote Wells. This segment, known as Mountain Springs Grade, has a long, rapid elevation change, remarkable rock and boulder scenery, and plant life variations.

- **SR-78:** The portion of SR-78 from the junction with SR-86 near Julian to the San Diego County line is eligible for future Scenic Highway Designation. That area is considered scenic because of its desert characteristics and view of Salton Sea.

- **SR-111:** SR-111 travels along the northeast shore of the Salton Sea and is eligible for future Scenic Highway Designation from Bombay Beach to the County line. The drive contrasts the flat, wide portions of the Salton Sea with the rugged variations of the Chocolate Mountains.

- **Borrego-Salton Seaway**: County Highway S-22 is also known as Borrego-Salton Seaway; it begins in Salton City and ends at the community of Borrego Springs in San Diego County. This route includes views of Clay Point, the Anza Verde Wash, and scenic viewpoints (ICDPS 2008d).

Other Visual Characteristics

Agricultural Areas

It is estimated that approximately 20 percent (588,416 acres) of the land in Imperial County is made up of irrigated agricultural areas. The majority of the agricultural activity is concentrated in the Imperial Valley area (512,163 acres), followed by Bard Valley in the southeast corner of the County (14,737 acres), and Palo Verde Valley in the northeast corner of the County (7,428 acres). These areas are characterized by square or rectangular fields, typically 40 to 80 acres in area, that are sometimes interspersed with scattered farmhouses and related agricultural structures. These agricultural regions are crossed by irrigation canals and drainages that are paralleled by dirt farm roads. Several cattle feed yards, other animal ranches, and aquaculture farms are located throughout the Imperial Valley, as are a few agricultural processing/packaging plants including Spreckles Sugar, fertilizer/chemical plants, and other agricultural-related operations. Agricultural areas dominate the visual scenes along I-8 and sections of SR-78, SR-86, SR-111, and SR-115 (ICPDS 1996a, 2009; Brian F. Mooney Associates 1993).

Urban Areas

Imperial County's Urban Areas include the areas surrounding seven incorporated cities (Brawley, El Centro, Imperial, Westmorland, Holtville, Calipatria, and Calexico) and five unincorporated communities (Heber, Niland, Seeley, West Shores/Salton City, and Winterhaven). These areas are characterized by low-rise, mixed-use development and contain or propose a broad range of residential, commercial, and industrial uses.

The urban area of El Centro is characterized by strip commercial development along SR-86, Imperial Avenue, and Main Street. Industrial and residential development is located on the fringes of the strip commercial areas. The City of Imperial's urban layout is similar to that of El Centro but includes the Imperial County Airport on SR-86. The Brawley urban area is characterized by commercial development along SR-78, with residential development existing in the outlying areas. Calexico is characterized by strip commercial development along SR-111 and residential uses to the east and west. Urban development is not usually considered a visual resource, but it makes up an important segment of the existing visual environment of the County.

Solar Power Development

Many of the areas previously used as farmland have been entitled for solar power facilities. Imperial County has several solar projects in various stages of development; which are presented in Table 3.2-1.

Currently three solar power facilities for public use are operating in Imperial County. These are the IV Solar Company, Centinela Solar, and Imperial Solar South. The Campo Verde and Mount Signal solar facilities are currently under construction, and several others have already been approved for Conditional Use Permits from the County (ICPDS 2013e; SEIA 2013).

Sources of Light and Glare

Light and glare may be created day or night from various residential, commercial, and industrial uses throughout the County. Potential sources of glare during the day may include surface water, motor vehicles either parked or traveling on surrounding roadways, paved surfaces, building windows, and solar facilities. At night, light sources include street lamps, accent and security lighting on buildings, parking lot lighting, vehicle headlights, existing transmission lines, and some park facilities.

Bureau of Land Management Visual Resource Management Areas

Over 43 percent of the land in Imperial County is managed by BLM. The Federal Land Policy and Management Act (FLPMA) of 1976 (43 U.S.C. 1701) requires BLM to protect the quality of scenic values on public lands and to consider those values before allowing uses that may have negative visual impacts. To accomplish that goal, BLM developed a Visual Resource Management (VRM) System to inventory and analyze visual resource values of an area. The VRM system serves two purposes: first, as a tool to inventory existing visual resources; and second, as a management tool by establishing objectives for the visual resource categories (BLM 1984a). The Visual Resource Inventory (VRI) process is described in detail in BLM Manual H-8410-1—*Visual Resource Inventory* (1984b). The four VRI classes are (I, II, III, and IV). These inventory classes represent the relative value of visual resources, Classes I and II being the most valued, Class III representing a moderate value, and Class IV being of least scenic value. Class I is assigned to wilderness and Wilderness Study Areas (WSAs), where the current management situation requires maintaining a natural environment essentially unaltered by human actions, even where exceptional scenic values are not exhibited. All other BLM-administered lands are then assigned one of the four visual resource inventory classes (Table 4.1-1) based on scenic quality, sensitivity level, and distance zones.

Table 4.1-1: Visual Resource Inventory Classification Matrix

Special Areas		Visual Sensitivity Level						
		High			Medium			Low
		I	I	I	I	I	I	I
Scenic Quality	A	II	II	II	II	II	II	II
	B	II	III	III*	III	IV	IV	IV
				IV				
	C	III	IV	IV	IV	IV	IV	IV
		f/m	b	s/s	f/m	b	s/s	s/s
		Distance Zones						

Source: BLM Manual H-8410-1
Key to Distance Zones:
f/m = foreground/middleground
b = background
s/s = seldom seen
* If adjacent areas are Class III or lower, assign Class III; if higher, assign Class IV.

A summary of how scenic quality, sensitivity level, and distance zones are rated is as follows:

Scenic Quality: The measure of an area's visual appeal. The area is divided into Scenic Quality Rating Units (SQRUs) on a basis of: like physiographic characteristics; similar visual patterns, texture, color, variety, etc.; and areas which have similar impacts from man-made modifications. Each unit is rated A, B, or C (most to least scenic) based on seven key factors:

- Landform
- Vegetation
- Water
- Color
- Adjacent Scenery
- Scarcity
- Cultural Modifications

Sensitivity Level: —Sensitivity levels are a measure of public concern for scenic quality. Public lands are assigned high, medium, or low sensitivity levels by analyzing the various indicators of public concern. Sensitivity Level Rating Units (SLRUs) have no set formula, and their boundaries are determined by assessing the overall concern driving the unit. Distance zones can be important in this decision because distant disruptions to the landscape affect people less. The other factors considered for rating purposes are:

- Types of Users
- Amount of Use
- Public Interest
- Adjacent Land Uses
- Special Areas
- Other Factors

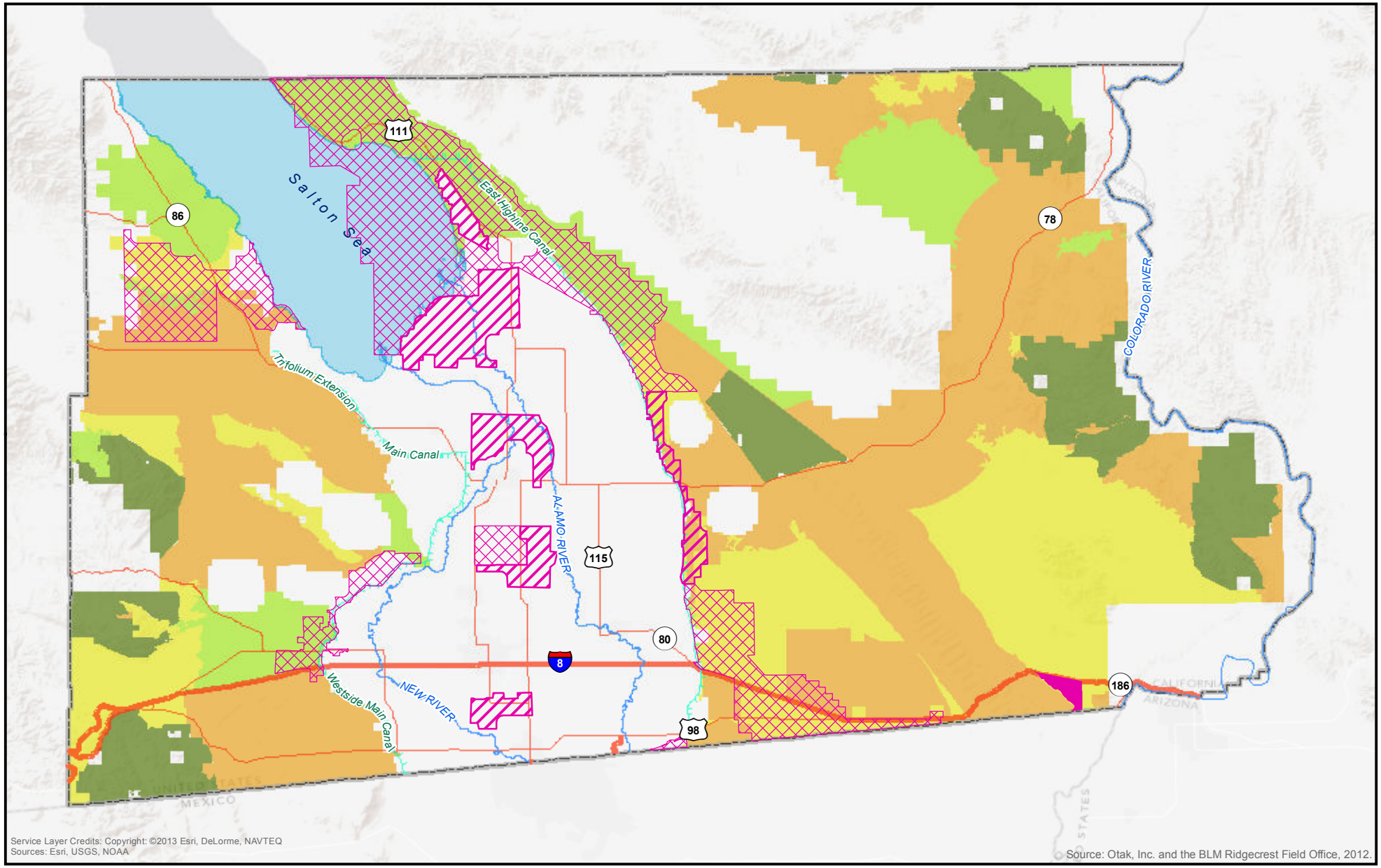
Distance Zones: Three distance zones are based on visibility from travel routes and observation points. These are determined by traveling in the field and physically testing what can be seen and how:

- Foreground-Middleground – includes areas visible from highways, rivers, or other viewing locations which are less than 3 to 5 miles away.
- Background – includes areas visible past the foreground-middleground zone and usually less than 15 miles away.
- Seldom Seen – includes areas that are not part of the foreground-middleground or the background and that are generally hidden from view.

The resulting VRI classes provide the basis for considering visual values in the BLM's planning process. It is through the Resource Management Plan (RMP) development process that management (or VRM) classes then get assigned. These management classes describe the visual management objectives of a given area, ranging from preservation to major modification, as well as the different degrees of modification to the basic elements of the landscape (form, line, color, texture) that are allowed. The management objectives established for each VRM class are shown in Table 4.1-2. Figure 4.1-1 shows the VRI Sensitivity Level Ratings for Imperial County.

Table 4.1-2: Visual Resource Management Objectives by Class

Visual Resource Class	Visual Management Objective
Class I	The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.
Class II	The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
Class III	The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
Class IV	The objective of this class is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention; however, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.
Source: BLM Manual H-8410-1	



Legend

Visual Sensitivity Levels

- High
- Moderate
- Low

Preferred Alternative

- Geothermal
- Renewable Energy
- Renewable Energy/Geothermal

N

0 5 10 20

Miles

Figure 4.1-1

Imperial County Renewable Energy and Transmission Element Update PEIR

VRI Sensitivity Level Ratings for BLM-managed Lands

Name: 20674 EIR Fig 4.1-1 VRI Sensitivity.Mxd
Date Saved: 11/19/2014, Author: msimmons

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4.1.3 Significance Criteria

The thresholds for significance of impacts for the analysis are based on the environmental checklist in Appendix G of the State California Environmental Quality Act (CEQA) Guidelines. Consistent with the CEQA Guidelines and the professional judgment of the County's staff and environmental consultants, the proposed Project would result in a significant impact on the environment if it would:

- Have a substantial adverse effect on a scenic vista or scenic highway
- Substantially damage scenic resources, including, but limited to, trees, rock outcroppings, and historic buildings within a state scenic highway
- Substantially degrade the existing visual character or quality of the site and its surroundings
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area

4.1.4 Impacts and Mitigation

AESTH-1: Have a substantial adverse effect on a scenic vista or scenic highway or substantially damage scenic resources, including, but limited to, trees, rock outcroppings, and historic buildings within a state scenic highway

The visual character of Imperial County varies greatly, consisting of natural scenic visual resources such as deserts, sand dunes, mountains, recreation areas, and the Salton Sea. The visual character of Imperial County also includes agricultural areas, urban areas, and areas of solar development. Development of future renewable energy facilities under the proposed Project could have the potential to impact existing visual character and quality, including scenic vistas, natural environment and existing landscape, general built environment and historic buildings, and scenic highways. Recreational areas with scenic qualities such as the Salton Sea could also be impacted by future renewable energy facilities developed under the proposed Project.

Construction

Construction of renewable energy facilities associated with the proposed Project, including the staging of equipment and materials, would change the visual character of the future project sites. A similar circumstance would occur during decommissioning activities upon site restoration in the future. Construction activities could be visible to travelers along adjacent roadways or highways. While construction activities could visually disrupt the sites where renewable energy facilities would be constructed, these activities would be short-term and temporary during construction and decommissioning activities. Examples of visual disruption include damage to or removal of native vegetation, presence and movement of vehicles, dust, and lighting. Additionally, construction activities could have the potential to damage scenic resources.

Similarly, construction and decommissioning of future renewable energy facilities associated with the proposed Project, including the staging of equipment and materials, could potentially damage scenic resources near eligible state scenic highways. The four eligible state scenic highways include I-8, SR-78, SR-111, and the Borrego-Salton Seaway. Construction activities could be visible to travelers along adjacent roadways or highways. While construction activities could visually disrupt the sites where

future renewable energy facilities would be constructed, these activities would be short-term and temporary during construction and decommissioning activities. Examples of visual disruption include damage to or removal of native vegetation, presence and movement of vehicles, dust, and lighting.

The proposed Project would be implemented on a "project-by-project" basis based on County approval of individual renewable energy projects. Because the proposed Project only identifies suitable locations for renewable energy facilities and does not contain specific development proposals, project-specific impacts to eligible scenic vistas or state scenic highways cannot be determined at this time. Nevertheless, future development of renewable energy facilities in the proposed overlay zones could have the potential to have an adverse effect on a scenic vista and scenic highway or damage scenic resources and result in a significant impact.

Operation

The ongoing presence of equipment, structures, fencing, roads, and other elements that would be required to operate future renewable energy facilities developed under the proposed Project could have a long-term impact on the visual character of the site. Areas of continued surface and vegetation disturbance and the presence of structures would create visual contrast in form, line, color, and texture compared to pre-project conditions. Depending on the viewer's location, structural elements introduced by a future project could block views or create skylining. Even after project removal and site reclamation are completed, the visual impact would remain. Restoring the natural, predisturbance visual character of a desert environment is extremely difficult, can take decades, and often is unsuccessful. Therefore, surface and vegetation disturbance could create long-term visual impacts due to the persistence of scars in arid and semi-arid landscapes and presence of future renewable energy facilities developed under the proposed Project.

Much of the County is visible from major roadways, and potential impacts to existing visual resources from future renewable energy facilities would need to be considered. Although no highways in Imperial County are designated as state scenic highways, the routes considered eligible for designation are still recognized and would need to be taken into consideration during the design and planning phase of future renewable energy projects. The development of renewable energy facilities associated with the proposed Project could change the visual character of future project sites that could be visible from eligible scenic highways. The visual character from the surrounding highways would potentially change from that of disturbed open space to that of utility use. Renewable Energy/Geothermal Overlay Zones are located adjacent to SR-111, I-8, and the Borrego-Salton Seaway. In addition, a Geothermal Overlay Zone crosses SR-78. Therefore, future renewable energy facilities would have the potential to be built in the viewshed of eligible scenic highways and may result in a significant impact.

Mitigation Measures

The DRECP EIR/EIS documented BLM design features that had been developed to minimize visual impacts related to solar renewable energy facilities. Although these were developed for solar facilities, the direction provided in these design features would adequately serve to minimize impacts for all renewable energy technologies. Mitigation Measures AESTH-1a through AESTH-1f are based on these design features presented in the DRECP EIR/EIS.

AESTH-1a: Future renewable energy facilities would be required to assess conformance to VRM Class designations and identifying visual resource conflicts. Among the actions to be taken are consulting with BLM; factoring VRI Class values into project planning and design; including a qualified professional with

VRM experience on the development team; consulting the local public to identify important visual resources in the area; consulting on viewshed protection with managers responsible for areas with special designations; evaluating impacts on historic trails; considering landscape setting observed from National Parks, National Historic Sites, and similar areas; using topographical data of engineering-design quality and digital terrain mapping for project planning and design; preparing simulations depicting project facilities as seen from key observation points and visual resource–sensitive locations; conducting public outreach to disseminate visual resource information; and performing visual mitigation planning and design based on field assessments and other means.

AESTH-1b: Future solar facilities would be required to be sited and designed in a manner that would minimize night-sky effects. Identification of night-sky effects is to include assessing and quantifying potential lighting impacts and conducting assessments by using qualified individuals. Methods to minimize night-sky effects include using minimum intensity lighting of an appropriate color consistent with safety needs, prohibiting strobe lighting except where it is required for safety; shielding all permanent lighting unless otherwise required for safety; mounting lighting so that light is focused downward; controlling lighting with timers, sensors, and dimmers; and using vehicle-mounted lights for nighttime maintenance work rather than permanently mounted lighting.

AESTH-1c: Future solar and related facilities would be required to be sited and designed in a manner that would explore and document means to reduce visual dominance in the viewshed and that the project comply with VRM Class objectives. Methods include conforming with VRM Class objectives (through use of BLM Handbook H-8431-1); determining the extent of the viewshed and selecting key observation points where people are expected to be observing the landscape; integrating visual design elements into plans, details, drawings, and specifications; and siting the facility to minimize the profile of all structures. Ways to minimize visual dominance include using existing topography and vegetation as screening; considering visual design elements when clearing vegetation and doing earthwork; siting projects outside key observation point viewsheds; avoiding locating facilities near visually prominent landscape features; avoiding skylining of structures; designing linear features to follow natural land contours rather than straight lines; locating linear features at the edges of natural lines of transition between vegetation types and topography; using alternative means of access in visually sensitive areas to preserve landscape conditions; minimizing vegetation and ground disturbance; reducing cut and fill; shaping, staining, and vegetation excavations to conform with local conditions; creating natural-looking earthwork forms; repeating characteristics of naturally occurring openings in vegetation for roads, structures, and similar elements; burying linear utilities and lines along roads or paths; selecting appropriate materials and surface treatments for structures to reduce visual contrast; minimizing signage; delineating construction limits and minimizing area of surface disturbance; salvaging vegetation and topsoil for reuse; and removing stakes and flagging after construction.

AESTH-1d: Future renewable energy facilities would be required to hold preconstruction meetings, if applicable, with affected agencies and designated specialists to coordinate the mitigation strategy. This includes a review of final design and construction documents with regard to visual impacts and mitigation.

AESTH-1e: Project developers would be required to monitor compliance with mitigation requirements and consult with the affected agencies during operations and maintenance. Maintaining visual resource design elements would include maintaining revegetated surfaces until self-sustaining; keeping facilities in good repair and repainting as necessary; restoring lands as soon as possible after disturbance;

controlling dust and noxious weeds; and operating so as to avoid high-intensity light (glare) being reflected off site.

AESTH-1f: Immediate reclamation of the site, either on federal, State, or private land, would be required for renewable energy facilities after construction. These reclamation activities may include restoration of agricultural farmland to the prior condition. Methods for minimizing visual contrast during reclamation and decommissioning include undertaking treatments such as thinning and feathering vegetation at project edges, enhancing contouring, salvaging landscape materials, and revegetating; restoring the project area to predevelopment visual conditions and the inventoried visual quality rating; removing aboveground and near-ground-level structures; contouring soil borrow areas and other features to approximate natural slopes; using native vegetation to establish form, line, color, and texture consistent with the surrounding undisturbed landscape; distributing stockpiled topsoil to disturbed areas and replanting; and removing or burying gravel or other surface treatments.

AESTH-1g: Each future renewable energy facility developed under the proposed Project would require preparation of a visual impact assessment that would evaluate potential impacts described in mitigation measures AESTH-1a through AESTH-1f. Based on the results of the analysis, the visual impact assessment would be required to develop mitigation measures to address potential impacts. Examples of mitigation measures for each renewable energy technology are presented below based on recommendations provided in the DRECP EIR/EIS:

- Examples of visual mitigation measures applicable to solar projects include development and implementation of a glint and glare mitigation and monitoring plan; screening of solar collectors from roads; retaining vegetation beneath solar collector arrays; prohibiting commercial signs, logos, or messages on towers and arrays; and using visually compatible color treatments and nonreflective materials for support structures and other components. In addition to direct reduction in visual quality, visual quality degradation can compromise the integrity of historical resources or traditional cultural places. In cases where such visual impacts occur, compensatory mitigation can include requiring research, field inventories, worker training, and other efforts specific to the resource and groups affected.

- Examples of visual mitigation measures for wind energy projects include siting to reduce visibility, clustering turbines, creating visual order and unity among groups of turbines, using radar-activated visual warning systems to reduce night-sky impacts, prohibiting signs and messages on towers, keeping turbines clean and in good repair, and promptly removing disused or abandoned equipment and parts.

- Examples of visual mitigation measures specific to geothermal energy projects include using air-cooled systems (to avoid plumes that water-cooled systems may generate under some conditions), minimizing drill rig and well-test facility lighting, and screening of pipelines.

Significance After Mitigation

Although implementation of mitigation measures AESTH-1a through AESTH-1g would minimize affects on scenic vistas, some impacts would remain. Additional mitigation may be developed for specific projects, but it is anticipated that impacts could remain significant and unavoidable, consistent with the conclusions of the DRECP EIR/EIS.

AESTH-2: Substantially degrade the existing visual character or quality of the site and its surroundings

Construction

As described in the impact analysis under AESTH-1, construction and decommissioning activities and equipment visible from public roads and public preserves could result in short-term impacts to the visual character of the site and its surroundings. Activities that could degrade the existing visual character include removal of native vegetation, construction of towers, drilling of wells, and presence of additional vehicles and lighting at the site, resulting in a significant impact.

Operation

The development of future renewable energy facilities associated with the proposed Project could have the potential to affect existing visual character by introducing new structures onto sites that are currently undeveloped. Additionally, development of future renewable energy facilities within areas designated as having high visual quality based on BLM visual resource inventory classifications would have the potential to affect visual character. As shown in Table 4.1-3, approximately 5,472.53 acres of the Geothermal Overlay zone are located in areas designated as having high value, approximately 0.21 acre of the Renewable Energy Overlay Zone is located in areas designated as having high value, and approximately 24,690.47 acres of the Renewable Energy/Geothermal Overlay Zone are located in areas designated as having high value.

Table 4.1-3: Overlay Zone Areas Under BLM VRI Classifications

Overlay Zone	BLM VRI Classifications			Total
	High	Moderate	Low	
Geothermal	5,472.53	3,974.32	496.86	9,943.72
Renewable Energy	0.21	2,847.71		2,847.92
Renewable Energy/Geothermal	24,690.47	57,221.20	85,067.29	166,978.95
Total	30,163.21	64,043.23	85,564.15	179,770.59

Changes to visual character would vary based on the type of renewable energy technology. A description of how each renewable energy technology could affect visual character is provided below.

Solar

Some impacts are common to all large-scale solar projects, regardless of the type of solar technology employed. Solar projects introduce strong geometric shapes and repeated linear elements into the visual environment. Typically, these projects have a large footprint and are in open and relatively flat settings with little to no vegetative or other screening. Over the life of a solar project, panels, towers, troughs, and associated structures may need to be upgraded or replaced, creating visual impacts similar to impacts that would occur during construction of the facility.

Wind

Wind energy projects would be highly visible because of the large vertical towers and rotating turbines that would be erected in an area where few, if any, comparable tall structures are located in the generally flat region. Visibility and contrast would be greater at locations where these structures are

sited along ridgelines, silhouetting them against the sky. Additionally, nighttime visual contrasts would occur from aviation warning lighting on the towers. Wind turbines may create visually contrasting "industrial" associations for sensitive receptors, particularly in a mostly natural landscape. The moving blades on the wind turbines can attract visual attention. Depending on the time of day, the shadows of tall turbine towers extend great distances across the landscape and can have a sundial effect with morning and evening producing the longest shadows. The rotating turbine blades also cause regular periodic interruption of sunlight and may cause a strobe-like effect, flickering alternating light and shadow over the area where the shadow is cast. During the life of a wind facility, towers, nacelles, and rotor blades may need to be upgraded or replaced, creating visual impacts similar to impacts occurring during initial construction and assembly. Altogether, multiple turbines would create a visual impact due to the numbers in close proximity to each other, their vertical and rotating elements, and the required night aviation safety lighting (DRECP 2014).

Geothermal

Aesthetic impacts associated with the operation and maintenance of geothermal energy facilities are largely related to ground disturbance and the visibility of industrial power plants, wells, pipes, and steam plumes.

The proposed Project would be implemented on a "project-by-project" basis based on County approval of individual renewable energy projects. Consequently, project-specific evaluations of impacts to the visual character or quality of the site cannot be determined at this time; however, operation of future renewable energy facilities developed in the proposed overlay zones could have the potential to impact the visual character of the site and its surroundings and result in a significant impact.

Mitigation Measures

Mitigation measures AESTH-1a through AESTH-1g would also be implemented to reduce impacts associated with existing visual character.

Significance After Mitigation

Although implementation of mitigation measures AESTH-1a through AESTH-1g would minimize affects on visual character, some impacts would remain. Additional mitigation may be developed for specific projects, but it is anticipated that impacts could remain significant and unavoidable, consistent with the conclusions of the DRECP EIR/EIS.

AESTH-3: Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area

Glare may be experienced if a viewer is located in or near the direct path of the reflection. Indirect glare can be experienced near the direct path of reflection and is less intense than direct glare. Indirect glare can be described as the reflection of the brightness around the sun, rather than the direct reflection from the sun itself. For a moving viewer such as a motorist, direct glare could be experienced momentarily as the viewer passes through the direct angle of reflection. Direct glare would be temporary for stationary sensitive receptors as well, because the glare would dissipate as the sun moves higher or lower on the horizon. Indirect glare may be experienced for a longer time than direct glare but would be much less intense than direct glare.

Construction and Operation

Future renewable energy facilities developed under the proposed Project may create new sources of substantial light or glare which could adversely affect day or nighttime views in the area. The structure, size, and industrial character of utility-scale renewable energy facilities during their operation and maintenance—as well as any associated glare, reflectivity, and lighting—would visually contrast with surrounding undeveloped land and result in long-term diminished scenic quality. The need for security and safety lighting could contribute to light pollution in areas where night lighting is otherwise absent or minimal.

Impacts associated with light and glare would depend greatly on the type of renewable energy, with solar technology having the greatest potential to result in impacts. Photovoltaic (PV) projects typically have fewer visual impacts than the other solar technologies because of the comparatively low profile of the collector arrays and the lower reflectance from photovoltaic panels, as compared with mirrors used in other technologies. PV modules are designed to absorb rather than reflect sunlight. Typical solar modules reflect less than 10 percent of the solar radiation striking the panel and do not produce a level of glint or glare that would be distracting or harmful to sensitive receptors on the ground or in the air. The modules are similar to common sources of glare that already exist in the environment, including surface water.

Parabolic trough systems comprise rows of trough-shaped mirrors that direct solar insolation to a receiver tube running along the axis of the trough. Solar trough facilities have a relatively low profile when viewed from a distance; however, these facilities have a high potential for glare because they rely on reflected, focused light from large mirrors. Reflectivity varies widely during daylight hours based on sun angle but can be highly visible from elevated viewpoints.

Power tower systems consist of thousands of ground-mounted sun-tracking mirrors that direct sunlight to a receiver atop a tall tower, where a liquid is heated then piped to a ground-based steam generator. Power tower projects have greater visual impacts over larger areas than photovoltaic or thermal trough technologies because of their high vertical profile (i.e., one or more towers rising 300 to 700 feet above ground level with brightly glowing reflections at the receiver location), power plant, cooling towers, steam plumes, and highly visible and pulsing day/night aircraft safety beacons.

The proposed Project would be implemented on a “project-by-project” basis based on County approval of individual renewable energy projects. Because the proposed Project only identifies suitable locations for renewable energy facilities and does not contain specific development proposals, impacts regarding light or glare cannot be determined at this time. Nevertheless, future development of renewable energy facilities in the proposed overlay zones could have the potential to have an adverse effect regarding light or glare and result in a significant impact.

Mitigation Measures

AESTH-3: Future renewable energy facilities would be required to consider siting and design features that would minimize glint and glare and take appropriate actions. These actions include identifying glint and glare effects, assessing and quantifying these effects to determine potential safety and visual impacts, and having qualified people conduct such assessments. Methods to minimize glint and glare include limiting use of signs; using reflective or luminescent markers instead of permanent lighting; minimizing offsite visibility of signs and lighting; using nonglare materials and appropriate colors; mitigating or offsetting visual impact by reclaiming unnecessary roads, removing abandoned buildings,

using underground utility lines, and rehabilitating and revegetating disturbed areas; and other actions determined in consultation with BLM.

Significance After Mitigation

Although implementation of mitigation measure AESTH-3 would minimize affects of glint and glare, some impacts could remain. Additional mitigation may be developed for specific projects, but it is anticipated that impacts would remain significant and unavoidable consistent with the conclusions of the DRECP EIR/EIS.

4.1.5 Cumulative Impacts

Impacts associated with the loss or degradation of aesthetic resources or the creation of new sources of glare are largely site-specific and localized. As such, these impacts are typically addressed and mitigated to acceptable levels on a case-by-case basis.

Construction of renewable energy facilities associated with the proposed Project would change the aesthetics and visual quality of the area where future renewable energy facilities would be built. A similar circumstance would occur during decommissioning activities upon site restoration in the future. Construction activities could be visible to travelers along adjacent roadways or highways. While construction activities could visually disrupt the sites where renewable energy facilities would be constructed, these activities would be short-term and temporary during construction and decommissioning activities. It is unlikely, however, that the majority of the foreseeable projects within the County would be under construction at the same time as future renewable energy facilities developed under the proposed Project.

The operation and maintenance of renewable energy facilities could cause significant cumulative impacts in the County. Changes in line, form, and color introduced by large-scale development and the contrast of such development with surrounding conditions create unmitigable degradation of views. Due to the size and nature of future renewable energy projects, the impact could result in a cumulatively considerable contribution to the significant cumulative impacts, consistent with the conclusions of the DRECP EIR/EIS.