6.0 CUMULATIVE IMPACTS

This Environmental Impact Report (EIR) provides an analysis of overall cumulative impacts of the projects with other past, present, and probable future projects producing related impacts, as required by the State California Environmental Quality Act (CEQA) Guidelines (14 California Code of Regulations [CCR] Section 15130). The purpose of this analysis is twofold: first, to determine whether the overall long-term impacts of all such projects would be cumulatively significant and second, to determine whether the projects would cause a "cumulatively considerable" (and thus significant) incremental contribution to any such cumulatively significant impacts (see the State CEQA Guidelines [CCR Sections 15064(h), 15065(c), 15130(a), 15130(b), and 15355(b)] In other words, the required analysis first creates a broad context in which to assess the projects' incremental contribution to anticipated cumulative impacts, viewed on a geographic scale well beyond the study area itself. The analysis then determines whether the projects' incremental contribution to any significant cumulative impacts from all projects is itself significant (i.e., "cumulatively considerable).

Cumulative impacts are defined in the State CEQA Guidelines (CCR Section 15355) as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." A cumulative impact occurs from "the change in the environment which results from the incremental impact of the projects when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time" (CCR Section 15355[b]).

Consistent with the State CEQA Guidelines (CCR Section 15130[a]), the discussion of cumulative impacts in this EIR focuses on significant and potentially significant cumulative impacts. The State CEQA Guidelines (CCR Section 15130[b]) state that:

The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the projects alone. The discussion should be guided by the standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact.

Where feasible, mitigation measures for cumulative impacts are provided along with the analysis of each issue area in Section 6.3 below. In those cases where project-specific mitigation measures would reduce the cumulative level of significance, those mitigation measures are identified. This EIR evaluates the cumulative impacts of the projects for each resource area, using the following steps:

(1) Define the geographic and temporal scope of cumulative impact analysis for each cumulative effects issue, based on the project's reasonably foreseeable direct and indirect effects.

(2) Evaluate the cumulative effects of the projects in combination with past and present (existing) and reasonably foreseeable future projects in the study area and, in the larger context of the Imperial Valley.

(3) Evaluate the projects' incremental contribution to the cumulative effects on each resource considered in Chapter 4, Environmental Analysis. When the projects' incremental contribution to a significant cumulative impact is considerable, mitigation measures to reduce the projects' "fair share" contribution to the cumulative effect are discussed, where required.

6.1 GEOGRAPHIC SCOPE AND TIMEFRAME OF THE CUMULATIVE EFFECTS ANALYSIS

The geographic area of cumulative effects varies by each resource are considered in Chapter 4. For example, air quality impacts tend to disperse over a large area, while traffic impacts are typically more localized. Similarly, impacts to the habitats of special-status wildlife species need to be considered within its range of movement and associated habitat needs. The analysis of cumulative effects in this EIR considers a number of variables including geographic (spatial) limits, time (temporal) limits, and the characteristics of the resource being evaluated. The geographic scope of each analysis is based on the topography surrounding the project sites and the natural boundaries of the resource affected, rather than jurisdictional boundaries. The geographic scope of cumulative effects will often extend beyond the scope of the direct effects of a project, but not beyond the scope of the direct and indirect effects of that project.

The cumulative development scenario includes projects that extend through year (2030), which is the planning horizon of the County of Imperial General Plan. Likewise, the lease term for the solar fields is 40 years with land restoration commencing thereof. It is likely that other similar projects would be developed between the year 2030 and the end of the lease term. However, due to uncertain development patterns that far in the future, it is too speculative to accurately determine the type and quantity of cumulative projects beyond the planning horizon of the County's adopted County General Plan.

6.2 PROJECTS CONTRIBUTING TO POTENTIAL CUMULATIVE IMPACTS

The CEQA Guidelines identify two basic methods for establishing the cumulative environment in which the projects are to be considered: the use of a list of past, present, and probable future projects (the "list approach") or the use of adopted projections from a general plan, other regional planning document, or certified EIR for such a planning document (the "plan approach"). For this EIR, the list approach has been utilized to generate the most reliable future projections of possible cumulative impacts. When the impacts of the projects are considered in combination with other past, present, and future projects to identify cumulative impacts, the other projects considered may also vary depending on the type of environmental impacts being assessed. As described above, the general geographic area associated with different environmental impacts of the projects defines the boundaries of the area used for compiling the list of projects considered in the cumulative impact analysis. Table 6-1 presents the general geographic areas associated with the different resources addressed in this EIR cumulative analysis. Figure 6-1 provides the general location for each of these projects in relation to the study area.

6.3 CUMULATIVE IMPACT ANALYSIS

This cumulative impact analysis utilizes an expanded list method (as defined under CEQA) and considers environmental effects associated with those projects identified in Table 6-1 in conjunction with the impacts identified for the projects in Chapter 4 of this EIR. Table 6-1 includes projects known at the time of release of the Notice of Preparation of the Draft EIR, as well as additional projects that have been proposed since the NOP date. Figure 6-1 provides the general geographic location for each of these projects.

This cumulative analysis incorporates by reference the cumulative analysis prepared for the Imperial Solar Energy Center South Project EIR/EA (see Chapter 3.0). This incorporation by reference is specific in relation to the cumulative analysis provided in the EIR/EA, which specifically considers the installation of multiple solar energy projects proposed in the southwestern Imperial Valley and associated off-site transmission (OTF) facilities proposed within Bureau of Land Management (BLM) Utility Corridor "N" (see pages 5-1 through 5-227, Imperial Solar Energy Center South Project EIR/EA). The OTF on BLM Lands as proposed by the projects would follow the same parallel alignment as proposed by the Imperial Solar Energy Center South Project and considered in the certified EIR/EA. Hence, the anticipated impacts are anticipated to be the same for the projects as identified in the previously prepared EIR/EA and, therefore, are incorporated by reference.

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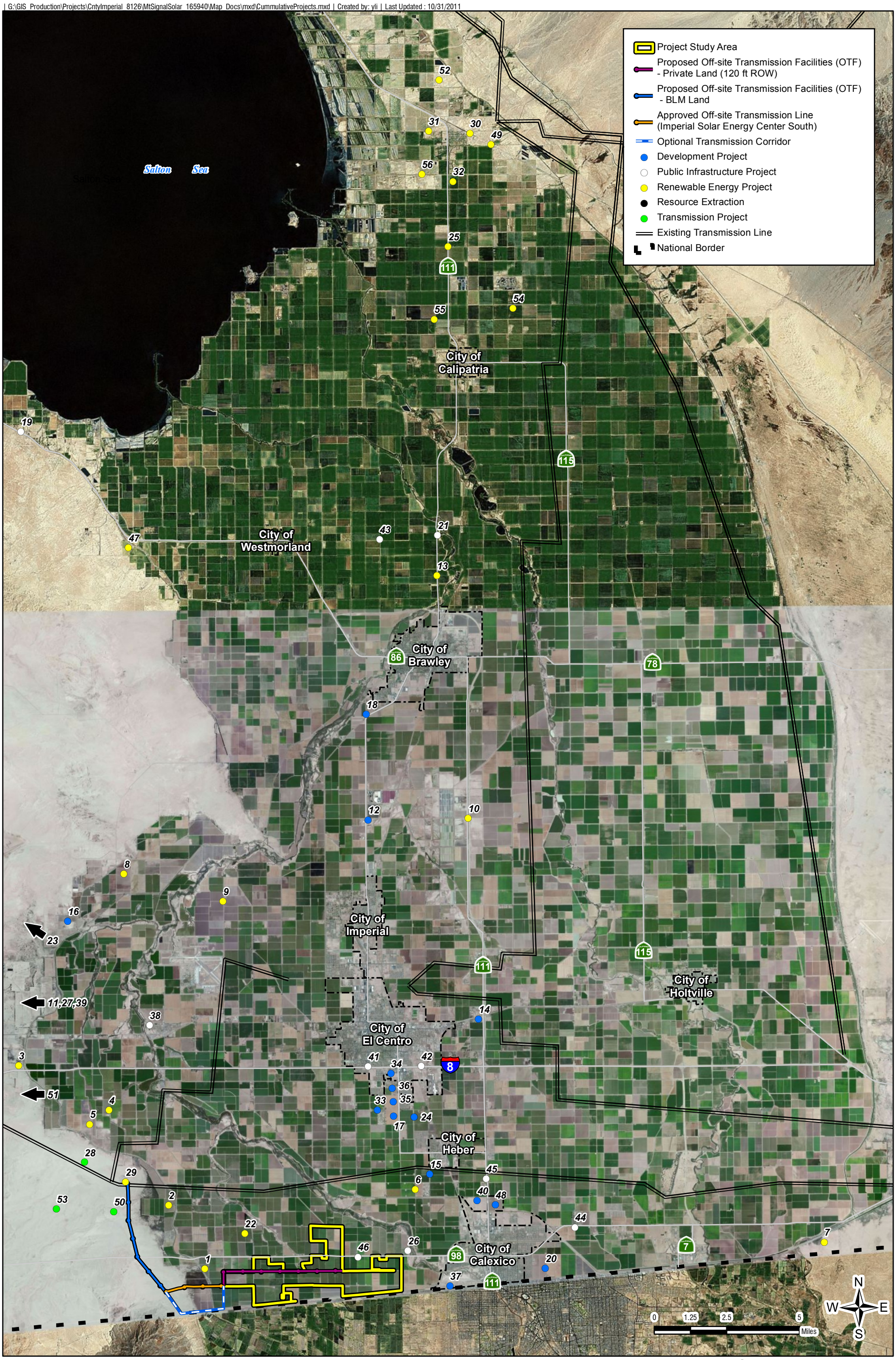

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Cumulative Projects

FIGURE 6-1

Imperial County | Mount Signal Solar Farm Project | EIR

TABLE 6-1. PROJECTS CONSIDERED IN THE CUMULATIVE IMPACT ANALYSIS

Project Name	Description of Project	Size/ Location	Status
Solar and Electrical Transmission Projects			
Imperial Solar Energy Center –West (CACA-51644)	Imperial Solar Energy Center -West consists of two primary components: (1) the construction and operation of the 250 megawatt (MW) Imperial Solar Energy Center West solar energy facility; and (2) the construction and operation of the electrical transmission line and associated access/ maintenance road that would connect from the solar facility to the existing Imperial Valley substation. The development of the solar energy center is on 1,130 acres of vacant land previously utilized for agricultural purposes.	North of I8 and immediately west of Westside Main Canal (see #3 in Figure 6-1).	Final EIR certified in June 2011.
Acorn Greenworks, LLC	Proposed solar farm. Additional details not available	Accessed by Preston Road and west of Westside Main Canal (see #2 in Figure 6-1).	Application filed with County
"S" Line Upgrade 230 kV Transmission Line Project	The "S" Line route originates from the Imperial Irrigation District (IID)/San Diego Gas & Electric Imperial Valley Substation located on BLM lands and terminate at the El Centro Switching Station on Dogwood Road near Villa Road in Imperial County. The IID proposed to upgrade about 18 miles of the 230 kV overhead electrical transmission line by installing (+/-) 285 new double-circuit steel poles to replace the existing single 230 kV circuit.	18 miles of various composed segments. I-8, Hwy 86, terminating 10 miles southwest at Dogwood Road and Villa Road (see #50 in Figure 6-1).	ROW amended/ renewed March 2010.
Imperial Solar Energy Center-South (CACA51645)	The Imperial Solar Energy Center-South consists of the construction and operation of the 200 MW Imperial Solar Energy Center South solar energy facility; the construction and operation of the electrical transmission lines that would connect from the solar power facility to the existing Imperial Valley substation; and widening of an existing access road along the west side of the Westside Main Canal.	The site is located on 946.6 gross acres of privately-owned, undeveloped and agricultural lands, in the unincorporated County. Immediately west of study area (see #1 in Figure 6-1).	FEIR certified by County in September 2011; BLM adopted FONSI for EA in August 2011.
Campo Verde	Proposed solar farm. Additional details not available	Accessed by Diehl Road and south of I8 (see #4 in Figure 6-1).	Application filed with County
Herber Solar Energy Facility	Proposed solar farm. Additional details not available.	North of Jasper Road and east of Corfman Road (see #6 in Figure 6-1).	Application filed with County
North Gila to Imperial Valley #2 Transmission Line (CACA-51575)	Southwest Transmission Partners double-circuit 500 kV line proposed from the North Gila Substation in Yuma County, Arizona to the Imperial Valley Substation in Imperial County, proposed due east of the IV substation. Project would provide high voltage transmission capacity in the southwestern U.S. to facilitate the development and interconnection of renewable energy. The total ROW will be approximately 1,903 acres of BLM land. Project will be approximately 75 miles long.	Between North Gila Substation in Yuma County, Arizona and the Imperial Valley Substation in Imperial County between North Gila Substation in Yuma County, Arizona and the Imperial Valley Substation in Imperial Valley. Project will follow the same route as existing Southwest Powerlink 500 kV line.	STP is preparing a Plan of Development. NEPA analysis has not yet commenced.

Project Name	Description of Project	Size/ Location	Status
Imperial 3400	Proposed solar farm. Additional details not available	North of Westside Main Canal and west of Kutz Road (see #8 in Figure 6-1).	Application filed with County
Imperial 4432	Proposed solar farm. Additional details not available	South of Westside Main Canal and east of Guthrie Road (see #9 in Figure 6-1).	Application filed with County
Keystone Solar Power	Proposed solar farm. Additional details not available	Accessed by SR 111 (see #10 in Figure 6-1).	Application filed with County
Centinela Solar Power, LLC (CACA-052092)	Proposed 230 kV line (follows the 230 kV lines from the international border going north alignment) would generate 225-275 MW of electricity on 2,054 acres of previously disturbed private farmland in the Imperial Valley. Approximately 5 miles of new 230 kV transmission line. The line will connect solar farm on private land with the IV Substation.	Approximately 10 to 12 miles southwest of the town of El Centro, Imperial County (see #22 in Figure 6-1).	Draft plan for development dated November 2010.
Imperial Valley Solar Project	Stirling Energy Systems (SES) submitted an application to the Bureau of Land Management (BLM) for development of the proposed SES Solar Two Project, a concentrated solar electrical generating facility capable of generating 750 MW of renewable power. The proposed SES Solar Two Project site is located on approximately 6,140 acres of federal land managed by the BLM and approximately 300 acres of privately owned land.	The project site is in Imperial County, California, approximately 4 miles east of Ocotillo, and 14 miles west of El Centro (see #27 in Figure 6-1)	The Record of Decision was signed on October 5, 2010.
Dixieland Connection to IID Transmission System	Proposed 230 kV transmission line from the Dixieland Substation to the Imperial Valley Substation. Proposed route for the electrical transmission line is parallel to the proposed Imperial Solar Energy Center West 230 kV transmission line. The proposed access/maintenance road for the transmission line is proposed to be shared for both transmission lines.	Approximately 10 to 12 miles southwest of the City of El Centro, Imperial County (see #51 in Figure 6-1).	Application filed and currently working on the NEPA analysis.
Sunrise Powerlink Transmission Project (CACA-047658)	This would consist of a transmission line from Imperial County to coastal San Diego County. For the first 36 miles of the Selected Alternative, the 500 kV transmission line will be built on BLM lands adjacent to the existing Southwest Powerlink 500 kV line. The Selected Alternative crosses approximately 49 miles of BLM land, approximately 19 miles of Forest Service land, approximately two miles of Department of Defense land, and approximately 0.4 miles of state land. The remainder of the line would cross lands in various ownerships, including private and local agencies.	Imperial Valley to Peñasquitos. Located in the Yuha Basin Area of Critical Habitat in the southwestern portion of Imperial County. 8 to 9 miles southwest of the town of El Centro (see #28 in Figure 6-1).	POWER Engineers final Environmental Impact Statement (EIS) complete. ROW authorized February 2009.
Superstition Solar 1	The Superstition Solar 1 project is a photovoltaic solar energy facility capable of producing 500 MW of electricity on approximately 5,516 acres.	West of the community of Westmorland (see #47 in Figure 6-1)	Application filed and currently working on a Draft EIR/EIS.

Project Name	Description of Project	Size/ Location	Status
Silverleaf Solar, LLC (CUP 11-0023)	This project would entail the buildout of a 160 MW solar generating facility that would interconnect with SDG&E's Imperial Valley 500 kV/230 kV substation. The project includes up to 1,056 acres of new solar generation with an addition 22 acres being considered for transmission facilities.	Project area is bounded by Westside Main Canal on the west and south; W Diehl Road to the north, and Diehl Drain on the east (see #5 in Figure 6-1).	CUP application filed on September 6, 2011
Bethel Solar X, Inc.	The Bethel Solar X, Inc project is a solar-hybrid energy project that will produce approximately 49.40 MW of electricity on approximately 571 acres of land.	East of Calexico on the US/Mexico border (see #7 in Figure 6-1).	In Process
Energy Source Solar I, LLC	The Energy Solar Source I project is a solar energy project that will produce 80 MW of electricity on approximately 480 acres of land.	In the vicinity of Niland (see #56 in Figure 6-1)	Approved by Imperial County
Salton Sea Solar Farm I	The Salton Sea Solar Farm I project is a solar energy project that will produce approximately 49.9 MW of electricity on approximately 320 acres of land.	In the vicinity of Calipatria (see #54 in Figure 6-1)	Operational in 2013
Salton Sea Solar Farm II	The Salton Sea Solar Farm II project is a solar energy project that will produce approximately 100 MW of electricity on approximately 623 acres of land.	In the vicinity of Calipatria (see #55 in Figure 6-1)	Operational in 2013 or 2014
Cluster I Solar Power Projects	Consists of three photovoltaic (PV) solar farm facilities and associated infrastructure, which would collectively generate up to 255 MW on a total of approximately 1,731 acres. The three proposed solar farms are herein referred to as Calipatria Solar Farm I (Calipatria I), Midway Solar Farm I (Midway I) and Midway Solar Farm II (Midway II).	3 miles north of Calipatria (see #25 in Figure 6-1).	NOP comment period started in July 2011
IV Solar Company	The IV Solar Company project is a solar photovoltaic energy project that will produce approximately 23 MW of electricity on approximately 123 acres of land.	Near the community of Niland (see #31 in Figure 6-1).	Approved by Imperial County
Chocolate Mountain	The Chocolate Mountain is a solar photovoltaic energy project that will produce approximately 49.9 MW of electricity on approximately 320 acres of land.	Near the community of Niland (see #30 in Figure 6-1).	Approved by Imperial County
Ocotillo Express	The Ocotillo Express project is wind energy project that will produce approximately 750 MW of electricity on approximately 15,000 acres of land.	Near the community of Ocotillo Near (see #11 in Figure 6-1).	Application filed and currently working on a Draft EIR/EIS
Hudson Ranch II	The Hudson Ranch II project is a geothermal energy project that will produce approximately 49.9 MW of electricity on approximately 326.26 acres of land.	Near the community of Niland (see #49 in Figure 6-1).	MND in Process
Black Rock Unit #1 2 3	Black Rock Unit # 1 2 3 project is a geothermal energy project that will produce approximately 159 MW of electricity on approximately 160 acres of land.	Near the community of Niland (see #32 in Figure 6-1).	EIR in Process.
Ram/Power/Overlay	Ram Power Overlay is a geothermal energy project that will produce approximately 50 MW of electricity on approximately 27,875 acres of land.	South of Brawley (see #13 in Figure 6-1).	EIR in Process.
Orni 18, LLC Geothermal Power Plant	This would generate 49.9 MW of geothermal energy.	Brawley, Imperial County (see #52 in Figure 6-1)	

Project Name	Description of Project	Size/ Location	Status
SDG&E Proposed Photovoltaic Solar Field (CACA-051625)	SDG&E proposed photovoltaic solar field. Producing 12 to 14 MW of renewable energy.	Located on approximately 100 acres of federal land directly adjacent to SDG&E's Imperial Valley substation (see #29 in Figure 6-1).	Application submitted for transportation and utility systems. A draft Plan of Development has been submitted as of December 2010.
Other Existing Projects in Imperial Valley (Source: Imperial Valley Solar Project FEIS)			
U.S. Gypsum Mining	Existing gypsum plant; proposal to expand active gypsum quarry undergoing environmental review. Gypsum quarry is located 26 miles northwest of the plant located at Plaster City.	North of Plaster City (see #23 in Figure 6-1).	Existing; Quarry is undergoing expansion FEIR released Jan 2008.
IV Substation (Termo Electrica US, LLC, aka Sempra)	International Border and Department of Energy (DOE) was the NEPA lead for preparation of a joint EA. This involves a construction of a 230 kV transmission line from the IV substation to the international U.S./Mexico border. Requires Presidential Permit for border crossing.	From the IV Substation to the international U.S./Mexico border.	Existing.
IV Substation (Baja California Power, Inc., aka Intergen)	International Border and DOE were the NEPA lead for preparation of a joint EA. Involves construction of a 230 kV transmission line from the IV Substation to the international U.S./Mexico border. Requires Presidential Permit for border crossing.	From the IV Substation to the international U.S./Mexico border.	Existing.
IV Substation (SDG&E)	Involves construction of the La Rosita 230 kV transmission line from the IV Substation to the international U.S./Mexico border near Mt. Signal. 230 kV transmission line (IV-La Rosita line) that connects the IV Substation with Mexico's La Rosita Substation.	La Rosita Substation near the Mexicali border (see #53 in Figure 6-1).	Existing.
Future Foreseeable Projects in Imperial Valley			
101 Ranch	Project includes approximately 1,894.7 acres and would include 73 residential neighborhoods or planning areas. Proposed land uses would consist of a maximum total of 6,986 homes, up to four elementary schools, one junior high school, a community shopping center, and 183.5 acres of parks.	East side of SR 86 south of Lavender Road (see #12 in Figure 6-1).	Draft EIR issued June 2011
Alder 70	Project proposes a Specific Plan including a mix of single-family detached residences, attached townhomes, a cluster of manufactured homes and a commercial area consisting of a self-storage facility and a small business area.	South of Gillett Road, west of SR 111, and, east of the City of El Centro (see #14 in Figure 6-1).	Draft EIR issued March 2009
Linda Vista	The Linda Vista project is a mixed-use project consisting of 182 single-family homes and a 6-acre commercial lot.	West side of Clark Road and I-8 and McCabe Road (see #33 in Figure 6-1).	Still in permitting process

Project Name	Description of Project	Size/ Location	Status
Desert Village #6	The Desert Village Project #6 consists of 95 single family homes, 260 apartments, and 7.3 acres of commercial.	West of Clark Road between I-8 and Home Road (see #34 in Figure 6-1).	Approved-granted extension of 2 years for filing final map of subdivision (Aug. 2008)
Rancho Los Lagos	Project includes a mix of low, medium, and high density residential housing types, two elementary school sites, commercial, mixed use commercial/residential, a business park, community parks and a golf course	Site is located west of Dogwood Road and east of SR 86 (see #18 in Figure 6-1).	Draft EIR issued October 2009
Salton Sea Landfill Expansion	BWI is updating its SWFP to allow an increase in the maximum permitted daily and annual acceptance rates of municipal solid waste by laterally and vertically expanding the current disposal area within its 320-acre property.	935 West Highway 86S (see #19 in Figure 6-1).	Draft EIR issued July 2011
Willow Bend (East) & Willow Bend (West)	The Willow Bend (East) and Willow Bend (West) is a combined project of 216 single-family homes.	Northeast corner of Clark Road and McCabe Road (see #35 in Figure 6-1).	On hold
CM Ranch	The project site encompasses approximately 660 acres. The project is currently proposed for development of 1904 single family lots, 35 acres of multi-family residential, 47 acres of commercial, 2 elementary schools, 1 middle school, and 1 charter school.	East of Rivera Drive and north of Second Street/Anza Road (see #20 in Figure 6-1).	EIR certified in 2007
Mixed-Use Development	65 single-family lots on over 36 acres.	Southeast corner of 8th Street (Clark Road) about 630 feet south of Horne Road (see #36 in Figure 6-1).	MND proposal being reviewed by applicant
Mosaic	The Mosaic project is a residential project of 1,156 single-family units and 2.7 acres of commercial.	Located in the County of Imperial. South of SR-86 and bisected by Dogwood Ranch (see #15 in Figure 6-1).	EIR
Manzanita Casino	A mixed-use project of residential, commercial, and casino. The casino facility would include an approximately 93,880 square foot casino; 63,000 square feet of food/beverage and retail components; 38,660 square foot entertainment venue; and, 218,081 square feet of other operational facilities.	Southwest corner of SR-111 and Jasper Road (see #40 in Figure 6-1).	Approved
Calexico Mega Park	The Calexico Mega Park project is a mixed-use project of a commercial and regional shopping center.	Southeast corner of SR-111 and Jasper Road (see #48 in Figure 6-1).	EIR certified in July 2010
County Center II Expansion	The County Center II Expansion project is a mixed-use project of a commercial center, expansion of the Imperial County Office of Education, a Joint use Teacher Training and Conference Center, Judicial Center, County Park, Jail Expansion, County Administrative Complex, Public Works Administration, and a County Administration Complex.	Southwest corner of McCabe Road and Clark Road (8th Street in the City of El Centro) (see #17 in Figure 6-1).	EIR in Process
Pacific Ethanol	Project proposes to build a dry mill fuel ethanol production facility	305 E. Yokum Rd, Calipatria (see #21 in Figure 6-1).	EIR certified in 2007

Project Name	Description of Project	Size/ Location	Status
Desert Springs Resort	The Desert Springs Resort project is a member's only resort community for motorsports, water sports, and recreational vehicle (RV) enthusiasts with a maximum occupancy of 210 days per year. The resort includes an estimated total of up to 411 water sports lots, 792 recreational vehicle	Northwest of the Boley Road and Westmorland Road (see #16 in Figure 6-1).	EIR in Process.
McCabe Ranch	The McCabe Ranch II Specific Plan would create 2,300 new residential units as well as commercial and recreational areas within an approximately 457-acre area.	South of McCabe road and east of SR 86 (see #24 in Figure 6-1).	EIR certified in June 2010
Coyote Wells (Wind Zero)	The Coyote Wells (Wind Zero) project is a mixed-use, three-phase development on approximately 944 acres. The land uses include recreation, education and training, tourism, residential, storage, and hotel/resort. Wind Zero proposes to build a 400-acre training facility for law enforcement, government, college and public near Ocotillo (south of Interstate 8 (I-8) and north of State Route (SR) 98) on land that it purchased in 2007. Wind Zero proposes to use the additional 600-acre site to build a 6.1-mile road course and racetrack country club.	Ocotillo/Nomirage Area (see #39 in Figure 6-1).	Approved
Seeley Wastewater Treatment Plant Upgrade	The IVS project applicant would finance an upgrade to the existing facility to allow it to meet the Title 22 water quality standards.	New River Boulevard, Seeley, California Seeley County Water District (see #38 in Figure 6-1).	Engineering plans required, completion of project expected March 2010.
Calexico Gran Plaza	The project applicant (Charles Company) proposes to develop the site with a total of approximately 561,650 square feet of commercial/retail uses.	The approximately 62-acre project site abuts the Mexican border in the southwestern portion of the City of Calexico (see #37 in Figure 6-1).	Draft EIR released September 2010
Calexico Materials Recovery Facility, Revised SWFP	This project involves the reissuance of a revised Solid Waste Facility Permit for the County's Calexico MRF on the existing 72.8 acre site.	Located on SR 98 immediately east of the project study area (see #26 in Figure 6-1)	MND adopted August 2011
Brawley Bypass, SR-78/SR-111 Expressway	Caltrans will construct an eight-mile, four-lane divided expressway from State Route 86 north of the city of Brawley to 1.5 miles south of the eastern junction of SR-111 and SR-78 in Imperial County.	North of the City of Brawley (see #43 in Figure 6-1)	Begin construction in fall 2010 and complete early 2013.
SR 98 Widening Dogwood Road to Rockwood Avenue	The project proposes to widen SR 98 from two to four lanes from Dogwood Road to west of Ollie Avenue, and from four to six lanes from Ollie Avenue to SR 111.	City of El Centro (see #44 in Figure 6-1)	Construction date unknown; subject to funding
Interstate 8, Imperial Avenue Interchange	The project will reconstruct the interchange at Imperial Avenue and I-8.	City of El Centro (see #41 in Figure 6-1)	Construction date unknown; subject to funding

Project Name	Description of Project	Size/ Location	Status
Interstate 8/Dogwood Road Interchange	The project will widen the ramps from one to two lanes and the bridge overcrossing from two to six lanes, including two turning lanes.	City of El Centro (see #42 in Figure 6-1)	Construction is scheduled to begin in 2013, with completion in 2014.
SR 111 Widening, Calexico to El Centro	Project proposes two general-purpose lanes, three interchanges and a direct freeway to-freeway connector. This section of roadway would upgrade the existing four-lane expressway to a six-lane freeway.	El Centro south to Calexico (see #45 in Figure 6-1)	Construction date unknown; subject to funding
SR 98 Widening, SR-111 to SR-7	The plan calls for widening and/or realigning SR 98 between SR 111 and SR 7 from two to four lanes (six in some locations).	East of Calexico (see #46 in Figure 6-1)	Construction date unknown; subject to funding

Source: Compiled by HDR 2011.

6.3.1 Aesthetics

The cumulative study area for projects considered in the visual resources cumulative impact analysis considers a five mile radius within the study area. Views beyond five miles are obstructed by a combination of the flat topography coupled with the Earth's curvature. The short-term visual impacts of the projects would be in the form of general construction activities including grading, use of construction machinery, and installation of the transmission poles and stringing of transmission lines. Longer-term visual impacts of the projects would be in the form of the presence of solar array grids, inverter modules and transformer stations, an electrical distribution and transmission system, operations and maintenance (O&M facilities), and, a substation. The projects would be enclosed by a security fence, significantly limiting views onto the site, and screening most of the proposed equipment at the site from adjacent and nearby roadways.

As provided in Section 4.1, the solar facility portion of the study area is comprised of an agricultural landscape that is altered from its natural desert landscape. The OTF portion located within BLM lands is characterized as desert land with existing transmission infrastructure located in the general vicinity of the proposed OTF. Although the projects would entail a substantial change in the existing visual character of the study area to a solar generating use and transmission infrastructure, this use is located in an area with a general lack of any distinctive visual features, such as varied topography or other topographical features. These factors all contribute to only low to moderate levels of vividness and intactness. Because the visual changes associated with the projects would be located in a remote area viewed by a minimal number of people, the study area is not located within a scenic vista, and is not readily viewable from any frequently travelled interstates or scenic highways. Additionally, with the exception of OTF, the projects' structural features would generally be less than 15 feet in height and, therefore, would not substantially disrupt background view of mountains to the west and association landscape unity. Further, the study area would be restored to agricultural uses following the decommissioning of the solar uses. As a result, although the visual character of the proposed site of the solar energy facility would change from that of a rural agricultural nature to one with developed characteristics, a less than significant impact associated with the proposed projects has been identified.

Development of the proposed projects in conjunction with the cumulative projects identified in Table 6-1 will gradually change the visual character of this portion of the Imperial Valley. Cumulative projects affecting visual resources are either located within an existing utility corridor (Utility Corridor "N"), replacing existing utilities, located adjacent to existing utility lines and supporting utilities, and/or located within an area that is not identified as natural scenic beauty or a designated scenic resource. Projects

located within private lands and/or under the jurisdiction of the County of Imperial are being designed in accordance with the County of Imperial's General Plan and Land Use Ordinance, which includes policies to protect visual resources in the County.

Cumulative projects including the Imperial Solar Energy Center South, Imperial Solar Energy Center West, Dixieland Connection to the Imperial Irrigation District (IID) Transmission System, Centinela, USS Mount Signal, and others south of Interstate 8 (I-8) would not have a cumulative effect on a scenic vista because they are located in an area that is not identified as a designated scenic resource and would not affect a scenic vista. All cumulative projects would not impact scenic resources within a state scenic highway as no designated state scenic highway is located within five miles of these cumulative projects.

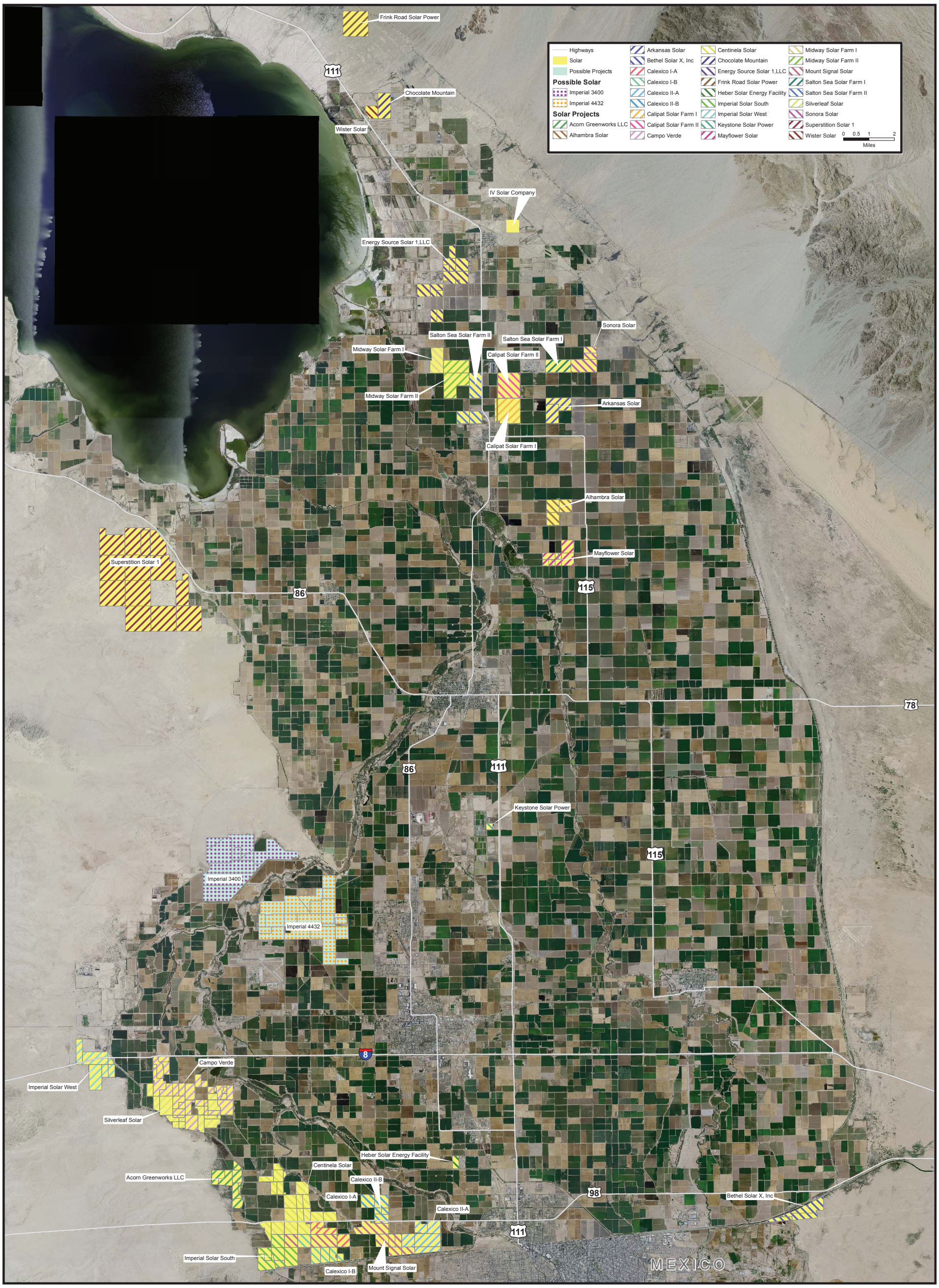
With respect to the OTF on BLM lands, existing cumulative projects, which include Imperial Valley Substation, Imperial Valley Rosita Line, Intergen Line, Sempra Line, Southwest Power Link would not substantially degrade the character of the site or its surroundings because they are located within designated Utility Corridor "N" where similar facilities already exist; therefore, the visual character would not be qualitatively altered. Potential cumulative project "S" Line Upgrade would not substantially degrade the character of the site or its surroundings because they are located within designated Utility Corridor "S" where similar facilities already exist; therefore, the visual character would not be qualitatively altered. Finally, all projects listed in Table 6-1 would not produce a substantial amount of light and glare, as no significant source of light or glare is proposed, or the projects will otherwise comply with the County lighting ordinance. Based on these considerations, no significant cumulatively considerable aesthetic impact is anticipated.

6.3.2 Agriculture and Forestry Resources

The geographic scope of cumulative impacts related to agricultural resources is Imperial County because the Imperial Valley Agricultural Complex is 500,000 acres of more-or-less contiguous farm fields located in the Imperial Valley and surrounded by desert and mountain habitat. Irrigated agriculture within the Imperial Valley is made possible by the Colorado Aqueduct and, more specifically with the study area, the All-American Canal. The timeframe considered is the life of the projects since the land would be returned to agriculture after the projects are dismantled in accordance with a project-specific Restoration Plan.

Continuing development within the Imperial County would result in the conversion of land currently utilized for agricultural production to urban and other land uses. This agricultural conversion has been a continuing trend in the County; based on Department of Conservation (DOC) farmland conversion reports (see Table 4.2-1). Since 1984, the DOC has recorded an approximately 21,190-acre reduction in important farmland to non-agricultural use (DOC 2010). Of this total, approximately 18,368 acres were designated as prime farmland. Based on records maintained by DOC, the annual average loss in important farmland within the County is approximately 883 acres; with 765 acres designated as prime farmland and 296 acres designated as farmland of statewide importance (DOC 2010).

Up until a few years ago, agricultural land conversion in the County was attributable to more traditional types of development, such as residential subdivisions. However, the residential housing market has fallen, but has been essentially replaced with an influx of renewable energy projects. In particular, the County has experienced a rapid influx of applications for solar development in very recent years. Currently, there are approximately 28 solar-related projects, including MSSF1, CSF1, and CSF2, proposed within the County. Figure 6-2 depicts the various proposed solar projects in the County and their relationship to agricultural lands. The cumulative projects identified in Table 6-1 for which acreages of impacts is available would impact approximately 10,089 acres of farmland (Imperial County 2011); for other projects, quantitative information was not available and, therefore, was not included within this evaluation. It is anticipated that up to 20,000 acres of farmland could be converted from agricultural uses to alternative energy projects. This acreage corresponds to a theoretical Megawatt Production that is essentially limited by the ultimate capacity of existing and planned transmission lines that would carry the power to other regions. While approximately 10,089 acres of farmland are proposed for solar energy use, it should also be noted that many of these projects may not ultimately be realized as they may not be able to obtain Power Purchase Agreements (PPAs) with applicable energy companies.



Source: Imperial County, 2011

Proposed Solar Projects in Imperial County

FIGURE 6.2

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As discussed in Section 4.2, the projects would result in the temporary conversion of 4,199 acres of Important Farmland, which would correspond with the duration of the lease of the properties for solar farm use. With the implementation of Mitigation Measures 4.2-1 and 4.2-4, this impact would be reduced to a level less than significant. As with the projects, cumulative projects would be required to provide mitigation for any impacts to agricultural resources. The cumulative impact associated with project-related agricultural conversion is less than 0.8% of all County-wide important farmlands. However the projects' conversion of up to 409 acres of prime farmland is more than half the annual average on record with the DOC. For this reason, Mitigation Measures 4.2-1a and 4.2-1b are proposed to minimize this impact to a less than significant level.

Cumulative projects would be required to provide mitigation for any impacts to agricultural resources. Current agricultural acreage in the County for alfalfa and Bermuda grass alone is approximately 415,365 acres. County-wide important farmland totaled 545,612 acres in 2006. In the County, the amount of agricultural land in production in any one year varies widely. Tens of thousands of acres of farmland is either out of production or intentionally fallowed at any given time. The cumulative impact of the projects quantified falls well within the annual variation of out-of-production/fallowed farmland.

Combined, the cumulative impact of agricultural conversion associated with the theoretical megawatt (MW) production is conservatively estimated at approximately 3.7% of all County-wide important farmland with the assumption that all the land converted is "important." For all of these reasons, the contribution of the proposed projects to any potentially significant loss of farmland, if any, would not be considerable. The incremental impact of the loss of 4,228 acres of farmland would be mitigated via full restoration of the solar site to comparable agricultural production post-project, purchase of an agricultural easement at a 2:1 ratio, or payment into the County's agricultural mitigation fund, which the County uses at its discretion to mitigate for farmland loss consistent with its General Plan policies.

It is also important to that the quantity of agricultural lands within Imperial County is always in flux and can vary widely year to year. IID currently implements a fallowing program with willing land owners and/or lessees with the IID to fallow fields to meet IID's Salton Sea mitigation water needs for the first 15 years of the IID's Quantification Settlement Agreement (QSA) Compromise Delivery Schedule. Starting in 2018, efficiency conservation replaces all fallowing. Each field's participation in the fallowing program is limited to two out of every four years. As a result, notwithstanding the landscape changes attributable to the projects, tens of thousands of acres of farmland are either out of production or intentionally fallowed at any given time within the Imperial Valley. In this context, the projects' impacts to agriculture would fall well within this annual variation of out-of-production/fallowed farmland and, therefore, is not cumulatively considerable.

Given that the incremental impact of the loss of approximately 4,288 acres would be mitigated via full restoration of the study area per the project Restoration Plan to comparable agricultural production under post-project conditions, following the conclusion of the lease, project-related agricultural conversion impacts would be minimized to a less than significant level. Additionally, with the County's decision to no longer participate in the Williamson Act program, parcels under existing active contracts within the study area are anticipated to covert to non-renewal status with or without the projects. Nevertheless, based on criteria parented in the CEQA guidelines, the cancellation of properties contracted under the Williamson Act to facilitate the projects is considered significant from a broader perspective and requires the application of Mitigation Measure 4.2-2 to reduce the impact to a less than significant level. Based on these circumstances, the projects would not result in any residual impacts to agricultural resources that could otherwise be cumulatively considerable.

6.3.3 Air Quality

The Salton Sea Air Basin (SSAB) is used as the geographic scope for the analysis of cumulative air quality impacts due to the geographic factors which are the basis for designating the SSAB, the existence of an Air Quality Management Plan (AQMP), State Implementation Plan (SIP), and requirements set forth by the Imperial County Air Pollution Control District (ICAPCD), which apply to all cumulative projects

within the SSAB. Table 6-1 lists the projects considered for the air quality cumulative impact analysis. Operation of the projects would not result in a long-term air quality impact because of the limited number of staff required during operation and the minimal maintenance work required for the solar energy center. However, potential short-term impacts of the projects would result due to vehicle and dust emissions associated with construction activities. Similar effects would also be realized upon site decommissioning, which would be carried out in conjunction with the projects' restoration plan, and subject to applicable ICAPCD standards.

During the construction and decommissioning phases, the projects would generate particulate matter less than 10 microns (PM_{10}), particulate matter less than 2.5 microns ($PM_{2.5}$), reactive organic gas (ROG), and nitrogen oxide (NO_X) emissions during each active day of construction. These emissions would exceed the applied thresholds for ROG, NO_x, and carbon monoxide (CO) at times during construction and represent a significant air quality impact. The projects' impact could be cumulatively considerable because: (1) portions of the SSAB are nonattainment already, although mitigated by ICAPCD Regulations, and (2) project construction would occur on most days, including days when ozone already in excess of State standards. Additionally, the effects would again be experienced in the future during decommissioning in conjunction with site restoration. However, with the implementation of the mitigation prescribed in Section 4.3, Air Quality, construction-related air quality emissions would be minimized to a less than significant level. In this context, although the projects would contribute to short-term increases in the generation of ROG, NO_x, and CO, these project-related emissions would not be cumulatively considerable. Likewise, these mitigation measures would also be required for site decommissioning activities in the future.

Cumulative projects would also be required to comply with the applicable laws and regulations as discussed in Section 4.3. The cumulative projects would also incorporate air quality mitigation measures, where required. During the operational phase of the projects, although emission of criteria air pollutants would be emitted, this increase would be minor in the context of the low number of operational vehicle trips and the applied significance thresholds. Therefore, the projects would not contribute to long-term cumulatively considerable air quality impacts. Further, alternative energy projects, such as the projects, would assist attainment of regional air quality standards and improvement of regional air quality by providing clean, renewable energy sources. Consequently, the projects would provide a positive contribution to the implementation of applicable air quality plan policies and compliance with Executive Order S-3-05. Based on these considerations, the projects would not result in cumulatively significant air quality impact.

6.3.4 Biological Resources

The geographic scope for considering cumulative impacts on biological resources includes the Imperial Valley and related biological habitats. The geographic scope also allows for the consideration of the Pacific Migration Flyway. Table 6-1 lists the projects considered for the biological resources cumulative impact analysis. This EIR incorporates by reference the cumulative analysis prepared for the Imperial Solar Energy Center South Project EIR/EA, which includes consideration of cumulative impacts to biological resources and, more specially, impacts to biological resources that occur within BLM's Utility corridor "N" and Yuha Desert FTHL Management Area.

In general terms, in instances where a potential impact could occur, the California Department of Fish and Game (CDFG) and the U.S. Fish and Wildlife Service (USFWS) have promulgated a regulatory scheme that limits impacts to these species. The effects of the projects would be rendered less than significant through mitigation requiring compliance with all applicable regulations that protect plant, fish, and animal species, as well as waters of the U.S. and State. Other cumulative projects in the study area would also be required to avoid impacts to special-status species and/or mitigate to the satisfaction of the CDFG and USFWS for the potential loss of habitat. As described in Section 4.4, the projects have the potential to result in impacts to biological resources. These impacts are generally focused on potential construction-related affects to burrowing owl, raptor species, migratory birds, mountain plover, long billed curlew, short billed dowitcher, horned lark, and loggerhead shrike. As discussed in more detail in the EIR/EA prepared

for the Imperial Solar Entergy Center South Project, the OTF within BLM lands could result in impacts to flat-tailed horned lizard and other desert species.

Burrowing Owls are protected by the CDFG mitigation guidelines for burrowing owl (1995) and Consortium guidance (1993), which require a suite of mitigation measures to ensure direct effects to burrowing owls during construction activities are avoided and indirect effects through burrow destruction and loss of foraging habitat are mitigated at prescribed ratios. Mitigation Measure 4.4-1a contains these requirements thereby minimizing potential impacts to these species to a less than significant level. Additionally, as provided in Section 4.4, the study area contains suitable habitat for migratory birds, raptors, mountain plover, long billed curlew, short billed dowitcher, horned lark, and loggerhead shrike. As a result of project-related construction activities, one or more of these species could be harmed. However, with the implementation of Mitigation Measures 4.4-1b, 4.4-1c, and 4.4-1d as identified in Section 4.4 of this EIR, these impacts would be reduced to a level of less than significant. Similarly, the cumulative projects within the geographic scope of the projects would be required to comply with the legal framework as described above. Based on these considerations, impacts to biological resources would not be cumulatively considerable.

As with the proposed projects, each of the cumulative projects would be required to provide mitigation for impacts to biological resources. Although some quantitative information regarding cumulative project biological impacts was available, such information was not available for most. Therefore, the analysis below is conducted qualitatively and in the context that the cumulative projects would be subject to a variety of statutes and administrative frameworks that require mitigation for impacts to biological resources.

Plant and animal species are protected by the Federal Endangered Species Act of 1973 (ESA), which provides a framework for the protection of plant and animal species that are at risk of becoming extinct. Section 7 of the ESA requires each federal agency to consult with the USFWS about projects that may adversely affect species listed as threatened or endangered under the ESA ("listed species"). Habitat critical to these listed species may also be separately designated under the ESA. ESA Section 9 prohibits "take" of federally listed species. Mitigation Measures 4.4-1a, 4.4-1b, 4.4-1c, and 4.4-1d are specifically intended to minimize and avoid the potential for any direct "take" of listed species or species eligible for listing.

The potential for the introduction and establishment of invasive plant species on BLM lands associated with the OTF would be prevented, controlled, and treated through an Integrated Pest Management approach per the *Vegetation Treatments on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Report (PER 2007).* This documentation is incorporated by reference into this EIR in conjunction with the Imperial Solar Energy Center South Project EIR/EA.

Birds listed at 50 CFR 10.3 are protected by the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703 et seq.), a Federal statute that implements treaties with several countries on the conservation and protection of Birds listed at 50 CFR 10.3 are protected by the MBTA (16 U.S.C. 703 et seq.), a Federal statute that implements treaties with several countries on the conservation and protection of migratory birds. The MBTA is enforced by U.S. Fish and Wildlife Service (USFWS). This act prohibits the killing of any migratory birds without a valid permit. Any activity which contributes to unnatural migratory bird mortality could be prosecuted under this act. With few exceptions, most birds are considered migratory under this act. Raptors and active raptor nests are protected under California Fish and Game Code 3503.5, 3503, 3513.

Burrowing Owls are protected by the California Department of Fish and Game mitigation guidelines for burrowing owl (1995) and Consortium guidance (1993), which require a suite of mitigation measures to ensure direct effects to burrowing owls during construction activities are avoided and indirect effects through burrow destruction and loss of foraging habitat are mitigated at prescribed ratios. These measures are included in Mitigation Measure 4.4-1a.

Flat-tailed horned lizards (FTHL) receive protection via the BLM's FTHL Rangewide Management Strategy (FTHL RMS). Flat-tailed Horned Lizard Interagency Coordinating Committee (ICC)'s *FTHL RMS* (2003) designated five Management Areas (MAs) to help focus conservation and management of FTHL key populations. The BLM has designated the Yuha Desert Management Area, the area in which the OTF on BLM Lands would be located, as a management unit.

Regional land designations also provide protection for wildlife species and biological resources. The California Desert Conservation Area (CDCA) encompasses 25 million acres of land in southern California that were designated by the Federal Lands and Policy Management Act. The BLM directly administers approximately 10 million acres of the CDCA. The CDCA Plan-designated Yuha Basin Area of Critical Environmental Concern (ACEC) Management Plan was prepared to give additional protection to unique cultural resource and wildlife values found in the region, while also providing for multiple use management.

The Federal Clean Water Act (CWA) and California's Porter-Cologne Water Quality Control Act provide protection for water-related biological resources by controlling pollution, setting water quality standards, and preventing jurisdictional streams, lakes, and rivers from being filled without a federal permit. No jurisdictional wetlands are included within the study area that could otherwise be directly impacted by construction of the projects. Likewise, Mitigation Measures 4.9-1a and 4.9-4 would be required to avoid or minimize potential water quality impacts that could otherwise indirectly impact biological resources.

The proposed projects would comply with these and other laws, regulations and guidelines and therefore would not contribute substantially to a cumulative biological resources impact. Similarly, the cumulative actions within the geographic scope of the proposed projects will be required to comply with the legal frameworks set forth above, as well as others. The cumulative actions will be required to mitigate their impacts to a less than significant level. Because the identified laws, regulations and guidelines are implemented at the Federal, State, and local level through the National Environmental Policy Act (NEPA), CEQA, and local planning compliance, they form comprehensive protection scheme for the biological resources identified in Section 4.4.

Table 5.1.12-2 of the Imperial Solar Energy Center South Final EIR/EA shows the habitat disturbances that have occurred since the adoption of the FTHL Management Strategy and those that could result from the proposed OTF and the reasonably foreseeable projects are estimated to impact a total of 354.8 acres of the 60,200-acre Yuha MA. These habitat disturbances constitute approximately 0.5 percent of the 1% of habitat take allowable within the Yuha MA. These impacts are under the applied 1% threshold for habitat acreage impacts and will be mitigated in accordance with the RMS, thereby reducing impacts to a level less than significant.

Indirect Impacts to Salton Sea

The proposed projects will result in a temporary fallowing of agricultural land as a result of conversion of the project sites to solar energy generation uses. Other cumulative projects which are proposed on privately-owned agricultural land will also result in this temporary conversion. Unlike a permanent conversion of agricultural land to urban or industrial use, the solar projects are required to restore the sites back to agricultural use. Unlike a permanent conversion of agricultural land to urban or industrial use, the solar projects are akin to a long-term fallowing because the projects are required to restore the site back to agricultural use pursuant to the terms of its lease. Although there is a reduction in water use as a result of the projects, the project sites will continue to contribute IID water to the New River and the Salton Sea via stormwater collection systems. In this context, changes in the quality and quantity of agricultural runoff caused by the projects' temporary agricultural land conversion to solar use is less than significant in relation to the total flows in New River that empty into the Salton Sea.

The proposed projects' reduction in agricultural water use would support IID's needs in fulfilling its legal obligations under State Water Resources Control Board (SWRCB) orders, the QSA, and IID Water Transfer Agreement, which includes mitigation of water quality and biological impacts to the Salton Sea.

As such, the proposed projects are consistent with the IID Water Transfer Agreement HCP EIR/EIS, the existing Section 7 Biological Opinion, and IID CESA Permit 2081. Further, IID has created an Equitable Distribution Plan (EDP) to give itself the flexibility to meet changing circumstances in supply and demand. The EDP would essentially create an agricultural fallowing incentive program in the event of a supply/demand imbalance (SDI). By October of each year, IID staff must forecast water demand and available supply and recommend whether there will be a SDI. With the knowledge that the proposed projects are anticipated to use only 1,310 acre-feet per year (AFY) of water during its long lease period, instead of a more intense agricultural water use, IID can account for this lower water demand when determining whether there will be a SDI and may help prevent the need to activate the EDP, which will allow more agricultural landowners to use their agricultural water supply, which is expected to result in a neutral net impact on water flowing to the sea (Imperial County 2011).

Likewise, in the years when IID must trigger the EDP, the water conservation from the proposed projects reduces the need to induce fallowing on as many agricultural acres to generate the additional water conservation needed to meet its transfer obligations and Salton Sea mitigation obligations. According to IID's EDP Negative Declaration, in 2003, IID implemented a rotation fallowing program to successfully create conserved water to deliver to the Salton Sea and now IID plans to increase fallowing incrementally to a -maximum of about 25,000 acres. With the knowledge that the proposed projects will be using less water, IID can fallow less than the 25,000 acres to produce the same amount of water needed to meet its transfer obligations and conserve water to deliver to the Salton Sea (Imperial County 2011). In this context, to the extent IID believes mitigation is needed in implementing the EDP, IID controls the mitigation by selecting how many farmland acres to enroll in its fallowing program to create the Salton Sea mitigation water.

In addition, IID acknowledged in its Negative Declaration adopting the EDP that the fallowing necessary to provide the transfer and Salton Sea mitigation water would not have a significant impact on water quality or biology. Specifically, it states for biology, "Implementation of the EDP would not have an effect on any biological resources within the IID water service area. The EDP could result in minor short-term changes in the location of water use and therefore, the volume of flows in the drains. However, any changes in the location of flows are expected to be both short-term and negligible, and well within historic variations, and therefore not to result in any adverse effects on biological resources that rely on the drains for habitat....[i]t is expected that under an SDI [state and federal refuges in the IID service area] will have sufficient supplied to maintain current uses and operations and/or to fulfill obligations under environmental permits issued to IID (Imperial County 2011). This EIR incorporates by reference finding the no impact determination for cumulative impacts related to the EDP as identified in the Imperial Solar Energy Center South Project EIR/EA.

For water quality, it states, "The proposed EDP would not result in any impacts associated with hydrology and water quality....the magnitude of any potential change is anticipated to be minimal and, due to constant variation in cropping patterns and locations of idled lands, most likely to undetectable when compared to the existing condition" (Imperial County 2011). This finding is incorporated by reference from the Imperial Solar Energy Center South Project EIR/EA into this EIR.

Finally, Figure 3 of the Negative Declaration shows how insignificant the IID's EDP fallowing program is in comparison with the historic variation in fallowing levels in Imperial Valley. This EIR tiers off this conclusion and incorporates it by reference into the proposed projects' analysis and response to comments. Therefore, not only do the projects reduce the need for as much fallowing under the Equitable Distribution Plan, but Figure 3 demonstrates, even without aiding the IID's EDP, the projects' long- term fallowing of agricultural lands is not significant compared to the historic levels of fallowing in Imperial County. As such, this EIR incorporates by reference finding the less than significant impact determination for cumulative impacts related to the proposed projects' reduction in agricultural use water use as compared to historic levels of agricultural use water reductions as attributed to fallowing and identified in the Imperial Solar Energy Center South Project EIR/EA.

The IID's EDP Negative Declaration also analyzed the cumulative impacts of the EDP fallowing program and concluded "Because there are no environmental impacts associated with implementation of the EDP, there are no cumulative impacts to consider." These findings are incorporated by reference in conjunction with the Imperial Solar Energy Center South Project EIR/EA. Based on these findings, it is reasonable to conclude that the proposed projects' conservation of water reduces the need fro IID to declare a SDI, aids IID in meeting its water transfer and mitigation water obligations, and is within the range of historic levels of fallowing within Imperial County and, therefore, the County concludes that no cumulatively considerable impact would occur.

6.3.5 Cultural Resources

As discussed in Section 4.5, no significant cultural sites are located within the solar facility portion of the study area. Therefore, the solar energy portion of the projects would not impact cultural resources and would not contribute to a cumulative impact to cultural resources. The proposed OTF on BLM Lands could impact one cultural resource site identified as significant, and, therefore, mitigation would be required to reduce this impact to a level less than significant. This finding is incorporated by reference from the Imperial Solar Energy Center South Project EIR/EA, which considers potential impacts to cultural resources within BLM's Utility Corridor "N."

In order to assess cumulative effects and whether the projects' incremental effect when added to other past, present, and reasonably foreseeable future actions within the geographic scope would be adverse and cumulatively considerable, a quantification of cumulative cultural resource impacts from the past, present, and foreseeable future projects is incorporated by reference from the Imperial Solar Energy Center South Project EIR/EA (see Table 5.1.7-1, List of Projects Considered for Cultural Resources Cumulative Impact Analysis). There are a total of 439 cultural resources sites within the geographic scope of the cumulative analysis including temporary camps, lithic scatters, ceramic and lithic scatters, ceramic scatters, rock features, trails or trail markers, historic period sites, and prehistoric isolates (see Table 5.1.7-2, Imperial County 2011). As discussed in Imperial Solar Energy Center South Project EIR/EA, 19 of these sites are located within the area of direct and indirect impacts for the OTF on BLM Lands; however, only one previously recorded site (IMP-3999) would be adversely affected by construction of the OTF on BLM Lands and within the Utility Corridor "N." To address the potential for adverse impacts to this resource, the OTF towers that impact IMP-3999 were relocated within the Utility Corridor "N" to avoid known artifacts based on surveys and meetings between the BLM and interested Tribal Representatives. Additionally, lattice-style transmission towers were selected instead of monopoles for their ability to span larger distances and placed at the edge of the site to reduce impacts. The towers were also placed in parallel to existing towers in order to utilize existing roads and create the shortest spur roads and the least new surface disturbance. With these measures in place, impacts to IMP-3999 are reduced to a less than significant level.

As with the projects, the other cumulative projects would likely be required to provide similar mitigation for any direct impacts to cultural resources to reduce impacts. This would include other cumulative projects on BLM lands. Because the cultural resources within the geographic scope of this cumulative impact analysis are important for their potential contribution to knowledge of history, additional mitigation measures are included in this EIR to ensure the proper collection and systematic data recovery for any undocumented archaeological resources that may be encountered during construction. Implementation of these mitigation measures would reduce the potential for cumulative impacts to these resources as a result of the projects.

Based on these findings, there would be no net loss in the cumulative value/context of cultural resources within the geographic scope of the cumulative analysis. With the inclusion and compliance with the required mitigation measures, the value of any undocumented archaeological resources encountered during construction would be exhausted through a data recovery program. With the implementation of measures required in conjunction with the Imperial Solar Energy Center South Project EIR/EA for the one significant cultural resource site located within the OTF in BLM lands, the affects to this resources would be less than significant and not cumulatively considerable.

6.3.6 Geology and Soils

The Imperial Valley portion of the Salton Trough physiographic province of Southern California is used as the geographic scope for the analysis of cumulative impacts on geology/soils and mineral resources. Cumulative development would result in an increase in population and development that could be exposed to hazardous geological conditions, depending on the location of proposed developments. Geologic and soil conditions are typically site specific and can be addressed through appropriate engineering practices. Cumulative impacts to geologic resources would be considered significant if the projects would be impacted by geologic hazard(s) and if the impact could combine with off-site geologic hazards to be cumulatively considerable. None of the projects identified within the geographic scope of potential cumulative impacts would intersect or be additive to the projects' site-specific geology and soils impacts; therefore, no cumulative effects are identified for geology/soils.

With regards to mineral resources, no mineral resources are located on the study area. Therefore, the projects would not result in a cumulative geology/soils impact for mineral resources.

6.3.7 Greenhouse Gas Emissions

Emissions of greenhouse gases (GHGs) have the potential to adversely affect the environment because such emissions contribute, on a cumulative basis, to global climate change. Although the emissions of the projects alone would not cause global climate change, GHG emissions from multiple projects throughout the world could result in a cumulative impact with respect to global climate change. In turn, global climate change has the potential to result in rising sea levels, which can inundate low-lying areas; affect rainfall and snowfall, leading to changes in water supply; and affect habitat, leading to adverse effects on biological resources. The South Coast Air Quality Management District (SCAQMD) has proposed a threshold of 10,000 metric tons (MT) of Carbon dioxide equivalent (CO_2e) for industrial projects; which was applied to the project analysis as provided in Section 4.7, Greenhouse Gases. As provided, the projects and OTF would exceed the applied threshold. Implementation of Mitigation Measures 4.7-1a and 4.7-1b would be required to reduce the generation of GHGs during construction of the projects and OTF to a less than significant level.

Given that the projects are characterized as a renewable energy projects and places emphasis on solar power generation, project operations would be almost carbon-neutral with the majority of the operational GHG emissions associated with employee vehicle trips. Based on these considerations, no significant long-term operational GHG impacts would occur and, therefore, project-related GHG impacts would not be cumulatively considerable.

6.3.8 Hazards/Hazardous Materials

The geographic scope considered for cumulative impacts from health, safety and hazardous materials/fire and fuels management is the area within one mile of the boundary of the study area. One mile is the standard American Society of Testing and Materials (ASTM) standard search distance for hazardous materials. This one mile standard distance was also applied to other potential safety risks associated with fire and fuels management.

Construction of the projects could encounter previously documented and un-documented hazardous materials sites within the study area. Mitigation Measure 4.8-1 identified in Section 4.8 would reduce the project-specific health and safety hazards to less than significant levels. Under cumulative conditions, implementation of the projects in conjunction with development of projects listed in Table 6-1 is not anticipated to present a public health and safety hazard to residents. Additionally, the projects and related projects would all involve the storage, use, disposal, and transport of hazardous materials to varying degrees during construction and operation. Impacts from these activities are less than significant for the projects because the storage, use, disposal, and transport of hazardous materials are extensively regulated by various Federal, state, and local laws, regulations, and policies. It is foreseeable that the

projects and related projects would implement and comply with these existing hazardous materials laws, regulations, and policies. Therefore, the related projects would not cause a cumulative impact, and the projects would not result in a cumulatively considerable incremental contribution to a cumulative impact related to use or routine transport of hazardous materials.

The OTF component of the projects would connect with other off-site proposed and planned transmission infrastructure to the west of the study area and run parallel to these facilities. As a result of this circumstance, the cumulative projects would be contained within the same right of way as the off-site project facilities and would not subject additional land areas to hazards associated with hazardous materials and fuels management. Thus, the projects' incremental contribution to any potential cumulative impacts would not be considerable.

6.3.9 Hydrology/Water Quality

Table 6-1 lists the projects considered for the hydrology and water quality cumulative impact analysis. The geographic scope for considering cumulative hydrology and water quality impacts is the Imperial Valley Hydrologic Unit as defined by the Colorado Basin Regional Water Quality Control Board (RWQCB) Basin Plan (2005). The construction of the projects are expected to result in short-term water quality impacts. It is expected that some of the cumulative projects, which are not yet built, could be under construction at the same time as the projects. Therefore, substantial short-term cumulative water quality impacts may occur during simultaneous construction of the projects and other cumulative projects identified in Table 6-1. However, compliance with the SWRCB's National Discharge Pollution Discharge Elimination System (NPDES) general permit for activities associated with construction (2009-0009-DWQ) would reduce water quality impacts. As with the projects, each of the cumulative projects would be required to comply with the Construction General Permit. The SWRCB has determined that the Construction General Permit protects water quality, is consistent with the Clean Water Act, and addresses the cumulative impacts of numerous construction activities throughout the State. This determination in conjunction with the implementation of Mitigation Measures 4.9-1a and 4.9-1b would ensure short-term water quality impacts are not cumulatively considerable.

The projects are not expected to result in long-term operations-related impacts related to water quality. The projects would mitigate potential water quality impacts by implementing site design, source control, and treatment control BMPs. Some Cumulative Projects would require compliance with the SWRCB's NPDES general permit for industrial activities, as well as rules found in the Federal Clean Water Act, Section 402(p)(1) and 40 CFR 122.26, and implemented Order No. 90-42 of the RWQCB. Quantitative information for cumulative projects considered for long-term water quality impacts was not available; however, with implementation of SWRCB, CRRWQCB, and County policies, plans, and ordinances governing land use activities that may degrade or contribute to the violation of water quality standards, cumulatively considerable impacts to water quality would be minimized to a less than significant level.

Based on a review of the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map, the study area and the majority of the cumulative projects listed in 6-1 are located within Zone X, which is an area determined to be outside of the 100-year floodplain. As such, the projects would not result in a significant cumulatively considerable impact to floodplains by constructing new facilitates within an identified flood hazard zone. Additionally, under the projects, operation could contribute additional stormwater runoff to local drains owned and operated by IID and Geeson Wash, resulting in potential downstream flooding. Implementation of Mitigation Measures 4.9-2 and 4.9-4, in Hydrology/Water Quality, and conformance with applicable state and regulations regulating surface water runoff, including the procedures outlined the County's Engineering Manual would reduce the long-term impacts from changes in drainage and runoff patterns to a less than significant level. Based on these considerations, the projects would not contribute that a significant cumulatively considerable adverse hydrological or water quality impact.

6.3.10 Land Use/Planning

The geographic scope for the analysis of cumulative land use and planning impacts is typically defined by government jurisdiction. The geographic scope for considering potential inconsistencies with the General Plan's policies, including agriculture, from a cumulative perspective includes all lands within the County's jurisdiction and governed by its currently adopted General Plan. In contrast, the geographic scope for considering potential land use impacts or incompatibilities includes the study area plus a one-mile buffer to ensure a consideration for reasonably anticipated potential direct and indirect effects.

As provided in Section 4.10, the projects would not involve any facilities that could otherwise divide an established community. Based on this circumstance, no cumulatively considerable impacts would occur. As discussed in Section 4.10, a majority of the project facilities, with the exception of the off-site transmission facilities (OTF), would not conflict with the goals and objectives of the County of Imperial General Plan. For this reason, the projects would generally not conflict with plans and polices adopted for the purposes of mitigating or avoiding significant environmental effects. In addition, a majority of the cumulative projects identified on Table 6-1 would not result in a conflict with applicable land use plans, policies, or regulations. In the event that incompatibilities or land use conflicts are identified for other projects listed in Table 6-1, similar to the projects, the County would require mitigation to avoid or minimize this type of land use impact. Based on these circumstances, no cumulatively considerable impact would occur.

In contrast to the rest of the projects, the OTF-Private component of the projects would extend above the height restrictions for the A-2, A-2-R, and A-3 zones of 120 feet. However, these facilities would be similar composition and structure as other transmission facilities within the Imperial Valley. Additionally, these facilities would interconnect with other approved or proposed transmission facilities that would be constructed in proximity to and blend with existing electrical transmission infrastructure. With the implementation of mitigation prescribed in Section 4.10 (Mitigation Measure 4.10-2), land use incompatibility impacts related to the OTF and CSF2(A) would be reduced to a less than significant level.

As provided in Section 4.10, the construction of the CSF2(A) site would result in the placement of solar array facilities within proximity of the Calexico International Airport ALUCP with the eastern extent of Zone B2 defined by Hammers Road (see Figure 4.10-2). As discussed in Section 4.10, the ALUC has not reviewed the projects, including the variance for transmission tower height, to provide a determination of projects' consistency with the Calexico International ALUCP. For this reason and as described in Table 4.10-1 under the related sub-headings, the County is unable to verify any height restrictions or other design considerations for the solar facilities; especially those located in proximity to Hammers Road. However, with the implementation of the prescribed mitigation (see Mitigation Measure 4.10-4), this impact would be minimized to a less than significant level and, therefore, this land use compatibility impact would not be cumulatively considerable.

6.3.11 Noise/Vibration

When determining whether the overall noise (and vibration) impacts from related projects would be cumulatively significant and whether the projects' incremental contribution to any significant cumulative impacts would be cumulatively considerable, it is important to note that noise and vibration are localized occurrences; as such, they decrease rapidly in magnitude as the distance from the source to the receptor increases. Therefore, only those related projects and identified in Table 6-1 that are in the direct vicinity of the study area and those that are considered influential in regards to noise and vibration would have the potential to be considered in a cumulative context with the projects' incremental contribution.

Construction equipment noise from the related projects identified in Table 6-1 would be similar in nature and magnitude to those discussed for the projects in Section 4.11, Noise. Specifically, noise levels from on-site construction activities would fluctuate depending on the particular type, number, and duration of usage for the varying equipment. The site preparation phase would be anticipated to generate the most substantial noise levels as the on-site equipment associated with grading, compacting, and excavation

tend to be the loudest. Although detailed information is not currently available, construction of the related projects would be anticipated to result in noise levels of approximately 74 decibels (dBA) equivalent sound level (Leq) to a maximum noise level of 79 dBA (L_{max}) at 100 feet from the simultaneous operation of heavy-duty equipment. These noise levels would exceed applicable standards at nearby sensitive receptors and/or result in substantial increases in ambient noise levels especially during the more noise-sensitive hours of the day. While temporary, short-term construction source noise levels from the related projects could be considered exempt if such noise would only occur during the daytime hours, there is no guarantee that all of the related projects would include such restrictions. Therefore, the related projects could generate significant impacts related to short-term exposure of sensitive receptors to increased equipment noise. Construction of the projects could also result in a significant impact from temporary, short-term equipment noise levels in the direct vicinity and possible during the same time frame as the related projects. Implementation of Mitigation Measures 4.11-1a, 4.11-1b, 4.11-1c, 4.11-1d, and 4.11-1e, by the applicant's construction contractor would be required to achieve reductions in these noise levels and may include the use of temporary noise barriers. These measures are expected to be sufficient in minimizing construction noise related impacts to a less than significant level. Thus, the incremental contribution of the projects to significant cumulative air quality impact would not be cumulatively considerable.

Groundborne noise and vibration levels from construction of the aforementioned related projects would be similar in nature and magnitude to those discussed in section 4.11, Noise. Specifically, construction activities would result in varying degrees of temporary groundborne noise and vibration, depending on the specific construction equipment used and activities involved (see, for example, Table 4.11-5). Although detailed information is not currently available, construction of the related projects would be anticipated to result in maximum groundborne noise and vibration levels associated with bulldozing activities. According to the Federal Transit Administration (FTA), levels associated with the use of a large bulldozer are 0.089 inches per second (in/sec) peak particle velocity (PPV) at 25 feet, respectively. With respect to the prevention of structural damage, bulldozing would not exceed the Caltrans-recommended level of 0.2 in/sec PPV even at a distance of 25 feet. Given that all adjacent structures would generally be 100 feet of more from construction activities, the projects would result in less than significant vibration impacts and, therefore, these impacts are not cumulatively considerable.

Stationary-source and vehicular noise from the aforementioned related projects would be similar in nature and magnitude to those discussed for the projects in Section 4.11 for mechanical heating, ventilation, and air conditioning (HVAC) equipment, emergency electrical generators, pumps, parking lot activities, delivery activities, employee vehicular trips, and electrical substation and transmission facilities. Operation of the related projects could result in the long-term stationary source noise levels that exceed applicable standards at nearby sensitive receptors and/or result in substantial increases in ambient noise levels. As discussed in Section 4.11, operation of the projects could result in a significant impact from long-term stationary source noise levels; however, implementation of Mitigation Measures 4.11-3 in Section 4.11 would reduce this impact to a less than significant level. In addition, given that the project facilities would be constructed within the A-2, A-2-R, or A-3 zones, long-term operational noise levels are not expected to exceed normally acceptable noise levels for these zones (e.g., 70 dBA day-night average sound level (L_{dn})). Thus, the incremental contribution of the projects to significant cumulative noise impacts would not be cumulatively considerable.

6.3.12 Public Services

The projects would not result in increased demand for public services (see Section 4.12, Public Services). However, future development in the Imperial Valley, including projects identified in Table 6-1, would increase the demand for public services. In terms of cumulative impacts, the appropriate service providers are responsible for ensuring adequate provision of public services within their jurisdictional boundaries. In conjunction with the projects' approval, the project applicant would also be conditioned ensure sufficient funding is available for any fire protection or prevention needs. Based on the type of projects proposed (e.g. solar energy generation) and their relatively low demand for public services, it is reasonable to

conclude that the projects would not increase demands for police, fire, education, or other public services and, therefore, no cumulatively considerable impacts would occur.

6.3.13 Recreation

The geographic scope for the analysis of cumulative impacts related to recreation includes the local and regional recreation facilities in the County of Imperial. This is the appropriate geographic scope because the projects are located entirely within the County and is not expected to have direct or indirect effects on recreation outside the County. As described in Section 4.13, Recreation, the projects do not involve the construction of recreation facilities. Further, the projects do not include a residential component that would increase the use of existing neighborhood or regional parks or other recreational facilities such that substantial physical deterioration would occur. In this context, the projects would not result in a cumulatively considerable impact to recreation.

6.3.14 Transportation/Traffic

The geographic scope of the cumulative analysis for transportation/circulation is based on the roadways in the vicinity of the study area that, based on the Traffic Impact Analysis (LL&G Engineers 2011), may be impacted by traffic generated by the projects and cumulative projects. As provided in the Traffic Impact Analysis, which is provided in Appendix J of this EIR, vehicle trips generated during construction-related (up to 300 employees) would be substantially higher as those compared to project operations (up to 30 employees) (see Section 4.14, Traffic/Transportation). Based on these trip generation rates, construction-related traffic was used in the assessment of the projects' cumulative impacts to local roadway operations.

To account for potential cumulative project traffic increases that may occur between existing conditions (2010) and the time of construction (2012), a 5% growth factor was applied to all existing 2010 traffic volumes throughout the study area. This 5% growth was assumed to conservatively represent the amount of traffic that may utilize the street system in the projects' vicinity proposed from future unapproved development and other solar energy projects planned in Imperial County, including those projects identified in Table 6-1. While it is most likely that these projects will be constructed sequentially over the course of the next few years, to be conservative, the cumulative analysis assumes that half of all construction traffic for all identified projects within the vicinity of the study area were assigned to the street system in addition to the 5% cumulative growth rate applied for the development projects.

As provided in Section 4.14. Traffic/Transportation, the intersection analysis revealed that all study intersections would continue to operate at Level of Service (LOS) C or better with the addition of project-related construction traffic (LL&G Engineers 2011). Although an increase in delay would occur, the delay would be minimal and would vary between 0.0 and 3.7 seconds at these intersections (LL&G Engineers 2011). This increase in delay is considered less than significant and, therefore, is not cumulatively considerable. See Appendix J for additional details. Similarly, roadway segments analyzed under the cumulative condition are calculated to operate at LOS B or better with the addition of the construction project traffic (LL&G Engineers 2011). Although an increase in volume to capacity ratio (V/C) due to the construction traffic would occur, V/C would vary between 0.0 and 0.02 at these segments and, is therefore, considered less than significant. Based on these findings, the projects would not result in cumulatively considerable roadway or intersection impacts.

6.3.15 Utilities/Service Systems

Future development in Imperial County would increase the demand for utility service in the region. In terms of cumulative impacts, the appropriate service providers are responsible for ensuring adequate provision of public utilities within their jurisdictional boundaries. As indicated in Sections 4.15, Utilities and Service Systems, the necessary public utilities would be provided to the projects by the Imperial Irrigation District (IID); however, the projects by themselves are not expected to substantially increase demands for

any particular service provider. The related projects identified in Table 6-1 would rely on similar service providers. Further, as provided in Table 3.14-3, the projects' water requirements are over 90% less than existing agricultural uses within the study area. Likewise, limited on-site wastewater facilities would be constructed for the projects and, therefore, no extension of sanitary sewer service would be required. Similarly, the projects would connect with existing drainage infrastructure owned and operated by IID or the County. Additionally, the projects would be comprised of mostly recyclable materials and would not generate significant volumes of solid waste that could otherwise contribute to significant decreases in landfill capacity. Based on these considerations, the projects would result in less than significant impacts to existing utility providers and, therefore, would not result in cumulatively considerable impacts.