SECTION 4.12
BIOLOGICAL RESOURCES

This section provides a background discussion of the regulatory framework, the affected environment and impacts to biological resources. The regulatory framework discussion focuses on the federal, state, and local regulations that apply to plants, animals and sensitive habitats. The affected environment discussion focuses on the topography and soils; general vegetation; general wildlife; sensitive biological resources; riparian habitat and sensitive natural communities; jurisdictional waters; and habitat connectivity and wildlife corridors. Information contained in this section is summarized from the *Wistaria Ranch Solar Energy Center Biological Technical Report* ("Biological Technical Report") dated March 17, 2014 (AECOM 2014e). This report along with associated appendices is provided on the attached CD of Technical Appendices as **Appendix J** of this EIR.

The "Biological Study Area" (BSA) was initially created based on preliminary Project design. Subsequent to the completion of surveys in 2012, the Project footprint changed in size due to design modifications for several of the Project components and to avoid impacts to sensitive biological resources. Therefore, for the purposes of this section, the BSA is defined as approximately 3,678 acres (1,488 hectares) including the Solar Energy Center footprint (all 32 parcels/all 17 CUP areas) within which all components of the Project (e.g., solar field arrays, Gen-Tie facilities, transmission lines, O&M building, substation, switchyard, and access roads) would be located (refer to **Figure 4.12-1**, *Biological Study Area*). The BSA also includes additional areas surveyed during 2012 that are located outside of the Project footprint generally described as follows: along the New River east of CUPs 13-0045, 13-0046 and 13-0047; east of CUPs 13-0039, 13-0040 and 13-0043; between CUPs 13-0037 and 13-0038; along the Greeson Drain southeast of CUP 13-0042 and bisecting CUP 13-0037; and areas adjacent to CUPs 13-0036, 13-0050, 13-0051 and 13-0052. Biological studies were not conducted within portions of the Project area located within the Mount Signal Solar Farm Project Gen-Tie line corridor because this was previously analyzed under CEQA for solar project transmission lines in the Mount Signal Solar Farm Project EIR (SCH #2011071066) (AECOM 2014e).

For the purposes of this section, the Full Build-out Scenario with disturbance of the Solar Energy Center, Electric Collector Line Corridor and new portions of the Gen-Tie line represents the worst-case scenario.

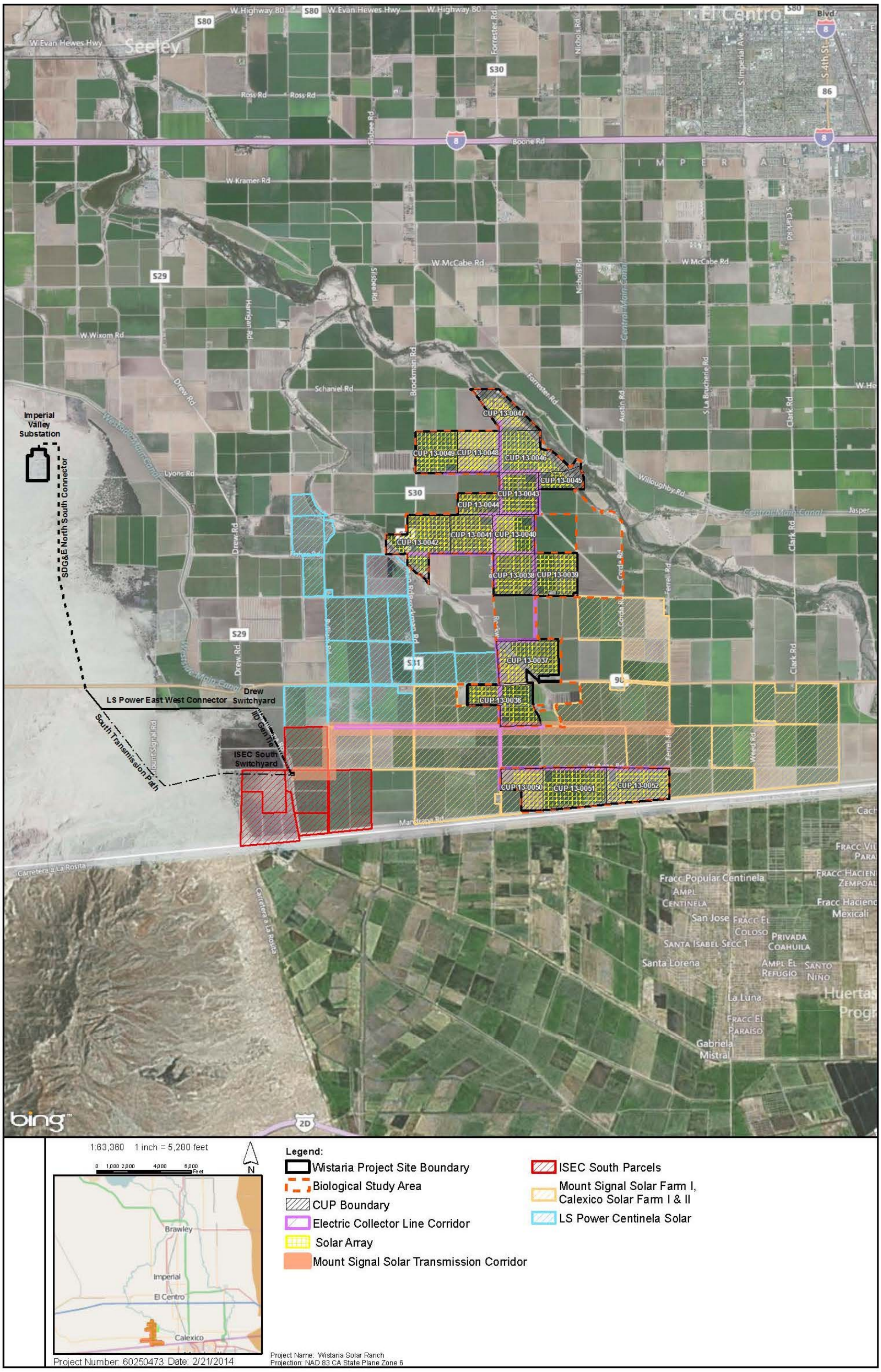
4.12.1 REGULATORY FRAMEWORK

FEDERAL

Clean Water Act

The Clean Water Act (CWA [33 U.S.C. 1251 et seq]) is intended to restore and maintain the quality and biological integrity of the Nation's waters. It prohibits the discharge of pollutants into Waters of the United States (WUS) without a National Pollutant Discharge Elimination System (NPDES) permit from the Environmental Protection Agency (EPA). By issuing NPDES permits, the EPA can regulate the discharge of pollutants to protect water quality.

Section 404 of the CWA provides that whenever any person discharges dredged or fill material into WUS (e.g., streams, wetlands, lakes, bays), a permit is required from the United States Army Corps of Engineers (USACE). The USACE has issued 52 separate Nationwide Permits (NWPs) for different types of projects with impacts to wetlands (as of September 2012). Depending on the level of impact, projects qualifying for an NWP may be required to provide the USACE with Pre-Construction Notification of the impacts and meet other restrictions. Projects with greater wetland impacts than those allowed under one of the NWPs require an Individual Permit. The process of obtaining an Individual Permit includes public notice and response to all comments received; the permit decision document includes a discussion of the environmental impacts of the project, the public and private needs, alternatives to



Source: AECOM 2014.

FIGURE 4.12-1
FACILITY LAYOUT

achieve project purposes if needed, and beneficial and/or detrimental effects of the project on public and private uses. In *SWANCC vs. USACE*, the Supreme Court ruled that the jurisdiction of the USACE does not extend to isolated, intrastate, non-navigable waters and wetlands such as vernal pools, ephemeral streams, and wetlands not associated with a stream channel.

Section 401 of the CWA requires that an applicant for a federal license or permit to discharge into navigable waters must provide the federal agency with a water quality certification. The certification must declare that the discharge would comply with water quality standards requirements of the CWA. USACE issuance of a Section 404 permit triggers the requirement that a Section 401 certification also be obtained. In California, the Regional Water Quality Control Boards (RWQCBs) issue this certification.

Executive Order 13112 – Invasive Species

Executive Order (EO) 13112 was signed in February 1999 and established the National Invasive Species Council. To the extent practicable and permitted by law, this EO requires agencies to: prevent the introduction of invasive species; provide for control of invasive species; and minimize the economic, ecological, and human health impacts that invasive species cause.

Executive Order 11990 – Protection of Wetlands

EO 11990 establishes a national policy to avoid adverse impacts on wetlands whenever there is a practicable alternative.

Federal Endangered Species Act

The Federal Endangered Species Act (ESA) designates threatened and endangered animals and plants and provides measures for their protection and recovery. "Take" of listed animal species and of listed plant species is prohibited without obtaining a federal permit. Take is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." Harm includes any act that actually kills or injures fish or wildlife, including significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife. Activities that damage the habitat of (i.e., harm) listed wildlife species require approval from the United States Fish and Wildlife Service (USFWS) for terrestrial species. ESA Section 7 and Section 10 provide two pathways for obtaining authority to take listed species. The ESA also generally requires determination of critical habitat for listed species. If critical habitat has been designated, impacts to areas that contain the primary constituent elements identified for the species, whether or not the species is currently present, is also prohibited.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implements international treaties between the United States and other nations that protect migratory birds, (including their parts, eggs, and nests) from killing, hunting, pursuing, capturing, selling, and shipping unless expressly authorized or permitted. Generally, the list of species protected under the MBTA includes those where evidence of natural occurrence in the United States or its territories exists, and the documentation of such records has been recognized by the American Ornithologists Union or other competent scientific authorities. Species not protected under the MBTA include those whose occurrences in the United States are strictly the result of intentional human introduction.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C 668–668d) prohibits take of the bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*), unless take is pursuant to its implementing regulations. The BGEPA defines take of an eagle to include a broad range of actions, including to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb. The

term "disturb" is defined in 50 CFR 22.3 to include agitation or bothering a bald or golden eagle to a degree that it causes, or is likely to cause, injury to an eagle; a decrease in its productivity by substantially interfering with normal breeding, feeding, or sheltering behavior; or nest abandonment by substantially interfering with normal breeding, feeding, or sheltering behavior, based on the best scientific information available.

STATE

California Endangered Species Act

The California Endangered Species Act (CESA) provides protection and prohibits the take of plant, fish, and wildlife species listed by the State of California. Unlike the federal ESA, state listed plants have the same degree of protection as wildlife, but insects and other invertebrates may not be listed. Take is defined similarly to the federal ESA and is prohibited for both listed and candidate species. Take authorization may be obtained from California Department of Fish and Wildlife (CDFW) under California ESA Sections 2091 and 2081. Section 2091, like federal ESA Section 7, provides for consultation between a state lead agency under CEQA and CDFW, with issuance of take authorization if the project does not jeopardize the listed species. Section 2081 allows take of a listed species for educational, scientific, or management purposes. In this case, private developers consult with CDFW to develop a set of measures and standards for managing the listed species including full mitigation for impacts, funding of implementation, and monitoring of mitigation measures.

California Environmental Quality Act

CEQA was enacted in 1970 to provide for full disclosure of environmental impacts to the public before issuance of a permit by state and local public agencies. In addition to federal or state listed species, "sensitive" plants and animals receive consideration under CEQA. Sensitive species include, but are not limited to, wildlife Species of Special Concern listed by CDFW and plant species on the CNPS's List 1A (Presumed extinct); List 1B (Rare, threatened, or endangered in California and elsewhere / eligible for state listing); or List 2 (Rare, threatened, or endangered in California but more common elsewhere eligible for state listing.).

California Fish and Game Code

California Native Sections 3511, 4700, 5050, and 5515 of California Fish and Game Code (CFGC) outline protection for "fully protected" (i.e. Fully Protected species refer to all vertebrate and invertebrate taxa of concern to the Natural Diversity Data Base regardless of legal or protection status species of mammals, birds, reptiles, amphibians, and fish. These species may not be taken or possessed without a permit from the Fish and Game Commission and/or CDFW. Species that are fully protected by these sections may not be taken or possessed at any time. CDFW cannot issue permits or licenses that authorize the "take" of any fully protected species, except under certain circumstances such as scientific research and live capture and relocation of such species pursuant to a permit for the protection of livestock. Furthermore, it is the responsibility of the CDFW to maintain viable populations of all native species. To that end, the CDFW has designated certain vertebrate species as Species of Special Concern because declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction.

Native Plant Protection Act

The Native Plant Protection Act (NPPA) of 1977 directed the CDFW to carry out the Legislature's intent to "preserve, protect, and enhance rare and endangered plants in this State." The NPPA gave the California Fish and Game Commission the power to designate native plants as "endangered" or "rare" and protect endangered and rare plants from take. The California ESA of 1984 expanded on the original NPPA and enhanced legal protection for plants, but the NPPA remains part of the Fish and Game Code.

To align with federal regulations, the California ESA created the categories of "threatened" and "endangered" species. It converted all "rare" animals into the ESA as threatened species but did not do so for rare plants. Thus, there are 3 listing categories for plants in California: rare, threatened, and endangered. Because rare plants are not included in the California ESA, mitigation measures for impacts to rare plants are specified in a formal agreement between CDFW and the project proponent.

Lake and Streambed Alteration Program

Prior to commencement of any activity that would substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank (which may include associated riparian resources) of a river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake, the project proponent shall submit a complete Lake or Streambed Alteration Program notification package and fee to the CDFW. The Lake and Streambed Alteration Program is a California law that requires that any person, state, local government agency, or public utility notify the CDFW prior to beginning of the activities listed above. The CDFW has 30 days to review the proposed actions and propose measures to protect affected fish and wildlife resources. The final proposal that is mutually agreed upon by CDFW and the project proponent becomes the Lake or Streambed Alteration Agreement (SAA). The conditions of agreement and a CWA Section 404 permit often overlap.

Porter-Cologne Act

The intent of the Porter-Cologne Act is to protect water quality and the beneficial uses of water, and applies to both surface and groundwater. Under this law, the California State Water Resources Control Board (SWRCB) develops statewide water quality plans, and the RWQCBs develop basin plans that identify beneficial uses, water quality objectives, and implementation plans. The RWQCBs have the primary responsibility to implement the provisions of both statewide and basin plans. Waters regulated under Porter-Cologne include isolated waters that are no longer regulated by the USACE. Developments which impact jurisdictional waters must demonstrate compliance with the goals of the Act by developing Storm Water Pollution Prevention Plans (SWPPPs), Standard Urban Storm Water Mitigation Plans, and other measures in order to obtain a CWA Section 401 Water Quality certification.

LOCAL

Imperial County General Plan

The Imperial County General Plan contains a variety of goals, objectives, policies and programs that relate to the preservation and conservation of biological resources. **Table 4.12-1** analyzes the consistency of the proposed Project with the applicable goals, objectives, policies and programs relating to biological resources from the Conservation and Open Space Element (Imperial County 2008a). In addition, an agriculture policy and program from the Land Use Element that directly applies to the Project with regard to burrowing owl is also included. While this EIR analyzes the Project's consistency with the General Plan pursuant to State CEQA Guidelines Section 15125(d), the Imperial County Board of Supervisors ultimately determines consistency with the General Plan.

TABLE 4.12-1
IMPERIAL COUNTY GENERAL PLAN CONSISTENCY ANALYSIS

General Plan Goals, Objectives Policies and Policies	Consistent with General Plan?	Analysis
CONSERVATION AND OPEN SPACE ELEMENT		
Preservation of Biological Resources		
Goal 2: The County will preserve the integrity, function productivity, and long-term viability of environmentally sensitive habitats, and plant and animal species.	Yes	The solar field site parcels are proposed for use as a solar farm complex on lands formerly used for agricultural activities. The Project also proposes improvements to the existing Electric Collector Line Corridor and co-location of the Gen-Tie with the Mount Signal Solar Farm Project Gen-Tie. As discussed in this section, habitats, and plant and animal species could be impacted by construction, operation, and decommissioning of the Project. Co-location and shared use of existing Gen-Tie infrastructure would allow the Project to minimize its disturbance of habitat area. In addition, mitigation measures (MM 4.12.1a, MM 4.12.1b, MM 4.12.1c, MM 4.12.1d, MM 4.12.1e, MM 4.12.1f, MM 4.12.2, MM 4.12.3, MM 4.12.6, and MM 4.12.14a and 4.12.14b) are identified to address habitat and sensitive species impacts. Therefore, the proposed Project is consistent with this objective.
Objective 2.1 Conserve wetlands, fresh water marshes, and riparian vegetation.	Yes	The solar field site parcels associated with CUPs 13-0037, 13-0038, 13-0039, 13-0040, 13-0042, 13-0043, 13-0046, 13-0047, and 13-0051 include Federal and State jurisdictional waters and wetland areas (wetland, non-wetland waters, CDFW jurisdictional riparian). The proposed Project would impact these features during construction and would mitigate impacts to jurisdictional areas through mitigation measure MM 4.12.2. Therefore, the proposed Project is consistent with this objective.
Objective 2.2 Protect significant fish, wildlife, plant species, and their habitats.	Yes	The solar field site parcels proposed to be developed as CUPs 13-0036 thru 13-0052, Electric Collector Line Corridor, and Mount Signal Solar Farm Project Gen-Tie line corridor contain potential habitat for

TABLE 4.12-1
IMPERIAL COUNTY GENERAL PLAN CONSISTENCY ANALYSIS

General Plan Goals, Objectives Policies and Policies	Consistent with General Plan?	Analysis
		several sensitive species. As such, direct and indirect impacts to individual species and/or their habitat could occur, primarily during construction of the Full Build-out Scenario. Mitigation measures MM 4.12.1a, MM 4.12.1b, MM 4.12.1c, MM 4.12.1d, MM 4.12.1e, MM 4.12.1f, MM 4.12.2, MM 4.12.3, MM 4.12.7, MM 4.12.14a and MM 4.12.14b are identified to reduce impacts to these species, if present. Therefore, the proposed Project is consistent with this objective.
Open Space Conservation Policy: The County shall participate in conducting detailed investigations into the significance, location, extent, and condition of natural resources in the County.	Yes	The Applicant prepared the *Wistaria Ranch Solar Energy Center Biological Technical Report* to identify biological resources that are present and could be affected by the Project (AECOM 2014e). This report identifies the existing conditions for each CUP and the Full Build-out Scenario, potential impacts resulting from Project implementation, and appropriate mitigation measures (MM 4.12.1a, MM 4.12.1b, MM 4.12.1c, MM 4.12.1d, MM 4.12.1e, MM 4.12.1f, MM 4.12.2, MM 4.12.3, MM 4.12.5, MM 4.12.7, MM 4.12.14a, MM 4.12.14b, and MM 4.12.14c) necessary to avoid significant impacts to natural resources in the County. Therefore, the proposed Project is consistent with this policy.
Program: Notify any agency responsible for protecting plant and wildlife before approving a project which would impact a rare, sensitive, or unique plant or wildlife habitat.	Yes	The Applicant will submit the *Wistaria Ranch Solar Energy Center Biological Technical Report* to the USACE and CDFW in Spring 2014. The Applicant will also consult with CDFW and USFWS in Spring 2014. CDFW and USFWS will also be consulted and provided an opportunity to comment on this EIR prior to the County's consideration of any Project approvals (MM 4.12.2). Therefore, the proposed Project is consistent with this program.

TABLE 4.12-1
IMPERIAL COUNTY GENERAL PLAN CONSISTENCY ANALYSIS

General Plan Goals, Objectives Policies and Policies	Consistent with General Plan?	Analysis
LAND USE ELEMENT		
Agriculture Policies and Programs		
Land Use Element Policy: The General Plan covers the unincorporated area of the County and is not site specific, however, a majority of the privately owned land is located in the area identified by the General Plan as "Agriculture," which is also classified as important burrowing owl habitat, typically in the berms and banks of agricultural fields.	Yes	Based on the Agriculture designation of the proposed all CUPs 13-0036 thru 13-0052, the potential for burrowing owl (BUOW) was examined as part of the *Wistaria Ranch Solar Energy Center Biological Technical Report* prepared for the Project. Refer to the BUOW program discussed under Impact 4.12.7 and mitigation measure MM 4.12.7, below.
Program: Prior to approval of development of existing agricultural land either in form of one parcel or a numerous adjoining parcels equally a size of 10 acres or more shall prepare a Biological survey and mitigate the potential impacts. The survey must be prepared in accordance with the United States Fish and Wildlife and California Department of Fish and Wildlife regulations, or as amended.	Yes	The *Wistaria Ranch Solar Energy Center Biological Technical Report* prepared for the Project included a focused BUOW survey. Mitigation measure MM 4.12.7 would address potential impacts to BUOW at each individual CUP (13-0036 thru 13-0052) in accordance with CDFW requirements. Therefore, the proposed Project is consistent with this program.

4.12.2 ENVIRONMENTAL SETTING

A. SOLAR ENERGY CENTER

The proposed Solar Energy Center site is contained within the approximately 3,678-acre BSA (**Figure 4.12-1**). The BSA includes all 32 parcels / all 17 CUP areas within which all components of the Project (e.g., solar field arrays, Gen-Tie facilities, O&M building, substation, switchyard, and access roads) would be located, plus additional areas outside of the Project footprint (see **Figure 4.12-1**) surveyed during 2012.

Elevation of the BSA is approximately at sea level. The solar field site parcels proposed for development with the Solar Energy Center are relatively flat with sparse vegetation between fields and traversed by irrigation canals and drains. The northern portion of the proposed Solar Energy Center is near the New River. The All American Canal and the U.S./Mexico border are immediately south of the proposed Solar Energy Center. Greeson Wash flows southeast through the Solar Energy Center site and is directly adjacent to the Solar Energy Center site on the western edge and through the central area. Other development features within and adjacent to the proposed Solar Energy Center include asphalt and compacted earthen roads, fencing, and farmhouses (AECOM 2014e).

Existing Setting by CUP Area

The predominant biological setting on all CUPs consists of privately-owned active and fallow agricultural fields and canals and/or drains for irrigating agricultural fields.

CUP 13-0036

CUP 13-0036 is bounded by the Woodbine Canal and SR-98 on the north; the Greeson Drain and an unnamed dirt farm road on the south; the Woodbine Canal and Mandrapa Road on the east; and agricultural land on the west. Rockwood Road aligns north-south through the center of the CUP geographically separating the CUP into eastern and western parcels. Aside from the roads and canals, the CUP area is surrounded by agricultural land and land that has been permitted for the Centinela Solar Energy Project, Mount Signal and Calexico Solar Farm Projects. CUP 13-0037 is proposed to the north of CUP 13-0036. The Electric Collector Line Corridor is proposed to align north-south along the entire length of Rockwood Road.

Two primary and secondary access points are proposed to CUP 13-0036. One primary and secondary access would be off of SR-98 west of Rockwood Road; the other primary and secondary access points would be off of Rockwood Road. The existing Mount Signal Solar Farm Project/Wistaria shared Gen-Tie borders the southern-most portion of the CUP area and extends west to the ISECS switchyard. The Gen-Tie originates at CUP 13-0036. The Project Gen-Tie would extend west from CUP 13-0036 along the same alignment as the Mount Signal Solar Farm Gen-Tie to connect to the ISECS switchyard. Substation and O&M facilities may be located in the southwest corner of the CUP area (refer to **Figure 2.0-6** in Chapter 2.0, Project Description).

CUP 13-0037

CUP 13-0037 is bounded by the Wistaria Drain and an unnamed dirt farm road on the north; SR-98 on the south; agricultural land on the east; and Greeson Drain Number 2 on the west. The Greeson Drain also aligns diagonally from the northwest to the southeast through CUP 13-0037. An area with several homes and structures borders the southern boundary of the CUP area adjacent to SR-98. Aside from roads and drains and the Centinela Solar Energy Project to the west, the entire CUP area is surrounded by agricultural land. CUP 13-0036 is proposed to the south of CUP 13-0037. The Electric Collector Line Corridor is proposed to align east-west along approximately two-thirds of the northern CUP border then align north-south along the western boundary.

Two primary and secondary access points are proposed to CUP 13-0037. Both primary access points are proposed off of Rockwood Road along the western boundary of the CUP area. One secondary access is proposed from the north off of the unnamed dirt farm road and the other is from the west off of Rockwood Road. The three access points off of Rockwood Road would cross IID's Greeson Drain Number 2 at existing vehicular access locations. The secondary access off the unnamed dirt farm road would require a new crossing of IID's Wistaria Drain. The electric line associated with CUP 13-0037 would extend south along Rockwood Road, over the Greeson Drain and SR-98 and through CUP 13-0036 to deliver electricity to the Gen-Tie. Substation and O&M facilities may be located in the southwest corner of the CUP area (refer to **Figure 2.0-7** in Chapter 2.0, Project Description).

CUP 13-0038

CUP 13-0038 is bounded by Wistaria Lateral 5 and an unnamed dirt farm road on the north; Wistaria Lateral 4 and Kubler Road on the south; and an unnamed farm road on the east and Rockwood Road on the west. Aside from the roads and laterals, the CUP is also surrounded by farmland on all sides. CUP 13-0038 is proposed to the west of CUP 13-0039. The Electric Collector Line Corridor is proposed to extend

east-west along the entire northern boundary as well as north-south along the western and eastern boundaries.

Three access points are proposed to CUP 13-0038. The two primary access points are proposed off of the unnamed dirt farm road on the east and Rockwood Road on the west of the CUP area. Both entrances are off of Kubler Road which is paved. The secondary access point is from Rockwood Road on the west. The electric line associated with CUP 13-0038 would extend south along the unnamed dirt farm road on the eastern boundary of CUP 13-0038, then align south (through APN 052-180-048), then connect with the Electric Collector Line Corridor as described in CUP 13-0037 to ultimately connect to the Gen-Tie. The Electric Collector Line Corridor will cross over IID's Wistaria Lateral 4 and IID Energy facilities. Substation and O&M facilities may be located in the southeast corner of the CUP area (refer to **Figure 2.0-8** in Chapter 2.0, Project Description).

CUP 13-0039

CUP 13-0039 is bounded by Wistaria Lateral 5 and an unnamed dirt farm road on the north; Wistaria Lateral 4 and Kubler Road on the south; George Road on the east; and an unnamed dirt farm road on the west. Two residences border the southern boundary: one residence is located at the southeast corner of the CUP area while the other is located centrally along the southern border of CUP 13-0039. The CUP is also surrounded by farmland on all sides. CUP 13-0039 is proposed to the east of CUP 13-0038. The Electric Collector Line Corridor aligns north-south along the entire length of the western boundary.

One primary and secondary point of access is proposed to CUP 13-0039. The primary access would be off of the unnamed dirt farm road on the west near the southwestern corner of the CUP. There is an existing vehicular crossing of IID's Wistaria Lateral 4 near this access. The secondary access point would be from George Road near the northeast corner of the CUP. There is an existing vehicular crossing at Wistaria Lateral 4 and George Road. The electric line associated with CUP 13-0039 would extend south parallel to the unnamed dirt farm road along the western boundary, continue south through APN 052-180-048, then connect with the Electric Collector Line Corridor as described in CUP 13-0037 to ultimately connect to the Gen-Tie. The Electric Collector Line Corridor will cross IID's Wistaria Lateral 4 and energy facilities. Substation and O&M facilities may be located in the southwest corner of the CUP area (refer to **Figure 2.0-9** in Chapter 2.0, Project Description).

CUP 13-0040

CUP 13-0040 is bounded by Wistaria Lateral 6 and Preston Road on the north; Wistaria Lateral 5 and an unnamed dirt road on the south; an unnamed dirt road on the east; and the Wistaria Drain 5 and Rockwood Road on the west. CUP 13-0040 is also surrounded by agricultural land on all sides. Three CUPs are proposed adjacent to CUP 13-0040: CUP 13-0041 is proposed to the west; CUP 13-0043 is proposed to the north; and CUP 13-0038 is proposed to the south. The Electric Collector Line Corridor is proposed along all four sides of the CUP area.

One primary and secondary point of access is proposed to CUP 13-0040. Both would be from the north off of Preston Road. The electric line associated with CUP 13-0040 would extend south along the unnamed dirt farm road. Electricity would flow from CUP 13-0040 through the Electric Collector Line Corridor for CUP 13-0038 or 13-0039 and then extend south through the Electric Collector Line Corridor as described in CUP 13-0038 or 13-0039 to connect to the Gen-Tie. The Electric Collector Line Corridor will cross IID's Wistaria Lateral 5, Drain 5 and energy facilities. Substation and O&M facilities may be located in the northeast corner of the CUP area (refer to **Figure 2.0-10** in Chapter 2.0, Project Description).

CUP 13-0041

CUP 13-0041 is bounded by Wistaria Lateral 6 and Preston Road on the north; Wistaria Drain 5 and an unnamed dirt farm road on the south; Rockwood Road and the Wistaria Drain 5 on the east; and an unnamed dirt farm road on the west. The CUP area is surrounded by agricultural land on all sides. Three CUPs are proposed adjacent to CUP 13-0041: CUP 13-0042 is proposed to the west; CUP 13-0040 is proposed to the east; and CUP 13-0044 is proposed to the north. The Electric Collector Line Corridor is proposed to align east-west along approximately one-third of the eastern portion of the northern boundary of the CUP adjacent to Preston Road as well as the entire length of the southern boundary. The Corridor also extends north-south along the entire length of the eastern boundary of CUP 13-0041.

One primary and secondary point of access is proposed to CUP 13-0041. Both would be from the north off of Preston Road. The electric line associated with CUP 13-0041 would extend east across Rockwood Road and through CUP 13-0040 and CUP 13-0038 or 13-0039 and then extend south through the Electric Collector Line Corridor as described in CUP 13-0038 or 13-0039 to connect to the Gen-Tie. Substation and O&M facilities may be located in the northeast corner of the CUP area (refer to **Figure 2.0-11** in Chapter 2.0, Project Description).

CUP 13-0042

CUP 13-0042 is bounded by Wistaria Lateral 6 and Preston Road on the north; Wistaria Lateral 5 and an unnamed dirt farm road on the south; an unnamed dirt farm road on the east; and IID operational discharge infrastructure, Brockman Road and Wistaria Lateral 6A on the west. The CUP is surrounded by farmland on all sides in addition to the Greeson Drain which aligns from the northeast to the southwest through the western-most portion of the CUP area. CUP 13-0042 is proposed to the west of CUP 13-0041. The Electric Collector Line Corridor is proposed to extend east-west along the majority of the CUP's southern border.

Three primary and three secondary access points are proposed to CUP 13-0042. Two of the primary and secondary access points are proposed off of the unnamed dirt farm road that aligns east-west through the western portion of the CUP area. The access points would be to the north and south off of this road. In addition, a primary and secondary access would extend to the west off of Brockman Road into the western-most portion of the CUP area west of Brockman Road. The solar field west of Brockman Road would require an electric line to cross Brockman Road and IID energy facilities along Brockman Road. The electric line associated with CUP 13-0042 would extend east along the southern boundary adjacent to the unnamed dirt farm road. From this point, the electric line would extend through CUP 13-0041, then align through CUP 13-0040 and CUP 13-0038 or 13-0039 and then extend south through the Electric Collector Line Corridor as described in CUP 13-0038 or 13-0039 to connect to the Gen-Tie. Substation and O&M facilities may be located centrally within the CUP area near Brockman Road and the unnamed dirt farm road aligning east-west (refer to **Figure 2.0-12** in Chapter 2.0, Project Description).

CUP 13-0043

CUP 13-0043 is bounded by the Wistaria Canal and Lyons Road on the north; Wistaria Lateral 6 and Preston Road on the south; the Wistaria Canal and George Road on the east; and Rockwood Road and the Wistaria Canal on the west. Aside from the roads and canals, the CUP is also surrounded by farmland on all sides. Two CUPs are proposed on either side of CUP 13-0043: CUP 13-0044 is proposed to the west and CUP 13-0045 is proposed to the east. The Electric Collector Line Corridor is proposed to extend the entire length of all four sides of the CUP area.

One primary and secondary point of access is proposed to CUP 13-0043 off of Lyons Road on the north. The electric line associated with CUP 13-0043 would extend south along George Road on the eastern

boundary of the CUP area and continue south across Preston Road, through CUP 13-0040, CUP 13-0038 or CUP 13-0039, APN 052-180-048 and then connect with the Electric Collector Line Corridor as described in CUP 13-0037 to connect to the Gen-Tie. The Electric Collector Line Corridor will cross IID's Wistaria Lateral 6. Substation and O&M facilities may be located in the northeast corner of the CUP area (refer to **Figure 2.0-13** in Chapter 2.0, Project Description).

CUP 13-0044

CUP 13-0044 is bounded by an unnamed dirt farm road to the north; Wistaria Lateral 6 and Preston Road on the south; Rockwood Road and the Wistaria Canal on the east; and an unnamed dirt farm road on the west. Aside from the roads, canals and laterals, the CUP area is surrounded by agricultural land on all sides. Three CUPs are proposed adjacent to CUP 13-0044: CUP 13-0043 is proposed to the east and CUPs 13-0041 and 13-0040 are proposed to the south. The Electric Collector Line Corridor is proposed to align north-south along the length of the entire eastern boundary and east-west along approximately one-half of the southern boundary.

One primary and secondary point of access is proposed to CUP 13-0044. Both would be from the east off of Rockwood Road. The electric line associated with CUP 13-0044 would extend east along Preston Road, then extend south across Preston Road and IID's Wistaria Lateral 6 and follow the Electric Collector Line Corridor as described in CUP13-0040. Substation and O&M facilities may be located in the southeast corner of the CUP area (refer to **Figure 2.0-14** in Chapter 2.0, Project Description).

CUP 13-0045

CUP 13-0045 is bounded by Lyons Road and the New River to the north; an unnamed dirt farm road on the south; New River on the east; and the Wistaria Canal and George Road on the west. The CUP area is surrounded by agricultural land on the north, south and west; the northeastern corner and eastern boundary are adjacent to the New River. CUP 13-0043 is proposed to the west of CUP 13-0045. The Electric Collector Line Corridor is proposed to align north-south along the length of the entire western boundary of the CUP area.

One primary and one secondary point of access is proposed to CUP 13-0045. Both would be from the north off of Lyons Road. The electric line associated with CUP 13-0045 would cross George Road into CUP 13-0043 and follow the Electric Collector Line Corridor identified in CUP 13-0043. Substation and O&M facilities may be located in the northwest corner of the CUP area (refer to **Figure 2.0-15** in Chapter 2.0, Project Description).

CUP 13-0046

CUP 13-0046 is bounded by the New River on the north; the Wistaria Canal and Lyons Road on the south; an unnamed dirt farm road on the east and the New River to the northeast; and the Wistaria Canal and Rockwood Road on the west. Agricultural land borders most of the north and east and all of the west and south sides of the CUP area. Four CUPs are proposed adjacent to CUP 13-0046: CUP 13-0047 is proposed to the north; CUP 13-0048 is proposed to the west; and, CUPs 13-0043 and 13-0045 are proposed to the south. The Electric Collector Line Corridor is proposed to extend north-south along the western boundary of the CUP area as well as east-west along the southern boundary.

One primary and secondary point of access is proposed to CUP 13-0046. The Primary Access would be off of Rockwood Road on the west and the secondary point of access would be from Lyons Road on the south. The primary access point off Rockwood Road contains two existing crossings of IID's Wistaria Lateral 7. The electric line associated with CUP 13-0046 would extend east along Lyons Road, turn south and cross Lyons Road and IID's Wistaria Lateral 7 extending under SDG&E's Southwest Powerlink, and align south along George Road to follow the Electric Collector Line Corridor identified in CUP 13-0043.

Substation and O&M facilities may be located in the southwest corner of the CUP area (refer to **Figure 2.0-16** in Chapter 2.0, Project Description).

CUP 13-0047

CUP 13-0047 is bounded by the New River on the north; Wahl Road on the south; New River on the east; and the Wistaria Canal on the west. Rockwood Road terminates at the southern border of the CUP. Agricultural land surrounds the CUP area on all sides. CUP 13-0046 is proposed to the south of CUP 13-0047. The Electric Collector Line Corridor is proposed to extend north-south from the southern portion of the CUP 13-0047 along Rockwood Road.

One primary and one secondary point of access is proposed to CUP 13-0047. Both are from the south, off of Wahl Road and require crossing over an existing crossing of IID's Wistaria Canal. The electric line associated with CUP 13-0047 would extend south along Rockwood Road and follow the corridor described in CUP 13-0046. Substation and O&M facilities may be located in the southwest corner of the CUP area (refer to **Figure 2.0-17** in Chapter 2.0, Project Description).

CUP 13-0048

CUP 13-0048 is bounded by Wahl Road to the north; Wistaria Lateral 7 and Lyons Road on the south; the Wistaria Canal and Rockwood Road on the east; and an unnamed farm road on the west. The CUP area is surrounded by agricultural land on all sides. Two CUPs are proposed on either side of CUP 13-0048: CUP 13-0049 is proposed to the west and CUP 13-0046 is proposed to the east. The Electric Collector Line Corridor is proposed to align north-south along the length of the eastern boundary and east-west along the southern boundary of the CUP area.

One primary and secondary point of access is proposed to CUP 13-0048. The primary access would be off of Rockwood Road on the east which utilizes an existing crossing over IID's Wistaria Lateral 7 and the secondary access is proposed off of Wahl Road on the north. The electric line associated with CUP 13-0048 would extend south along Rockwood Road and follow the corridor described in CUP 13-0046. Substation and O&M facilities may be located in the southeast corner of the CUP area (refer to **Figure 2.0-18** in Chapter 2.0, Project Description).

CUP 13-0049

CUP 13-0049 is bounded by Wahl Road on the north; Wistaria Drain 7 and Lyons Road on the south; an unnamed farm road on the east; and Brockman Road on the west. Agricultural land surrounds the CUP area on all sides with the Meloland Cattle Company immediately to the west across Brockman Road. CUP 13-0048 is proposed to the east of CUP 13-0049. The Electric Collector Line Corridor is proposed to extend east-west along approximately one-third of the southern boundary adjacent to Lyons Road.

One primary and secondary point of access is proposed to CUP 13-0049. Both would be from the west off of Brockman Road and over a private drain easement. The electric line associated with CUP 13-0049 would extend east along Lyons Road and follow the corridor outlined in CUP 13-0048. Substation and O&M facilities may be located in the southeast corner of the CUP area (refer to **Figure 2.0-19** in Chapter 2.0, Project Description).

CUP 13-0050

CUP 13-0050 is bounded by Anza Road to the north; the All American Canal (Drain Number 12) and the U.S-Mexico Border on the south; the Woodbine Canal and Mandrapa Road on the east; and Rockwood Road on the west. The CUP area is surrounded by agricultural land on the north, east and west. However, some of these lands have been permitted for solar energy generation as part of the Mount Signal and Calexico Solar Farm Projects. CUP 13-0051 is proposed to the east of CUP 13-0050. The

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Electric Collector Line Corridor is proposed to align north-south along approximately one-half the length of the western boundary and east-west along the entire northern boundary of the CUP area.

One primary and one secondary point of access is proposed to CUP 13-0050. The primary and secondary access locations would be from the north off of Anza Road. The electric line associated with CUP 13-0050 would extend west along Anza Road then turn north crossing Anza Road and IID Energy facilities and extend north along Rockwood Road to either the substation/switchyard located at CUP 13-0036 or the Gen-Tie. Substation and O&M facilities may be located in the northwest corner of the CUP area (refer to **Figure 2.0-20** in Chapter 2.0, Project Description).

CUP 13-0051

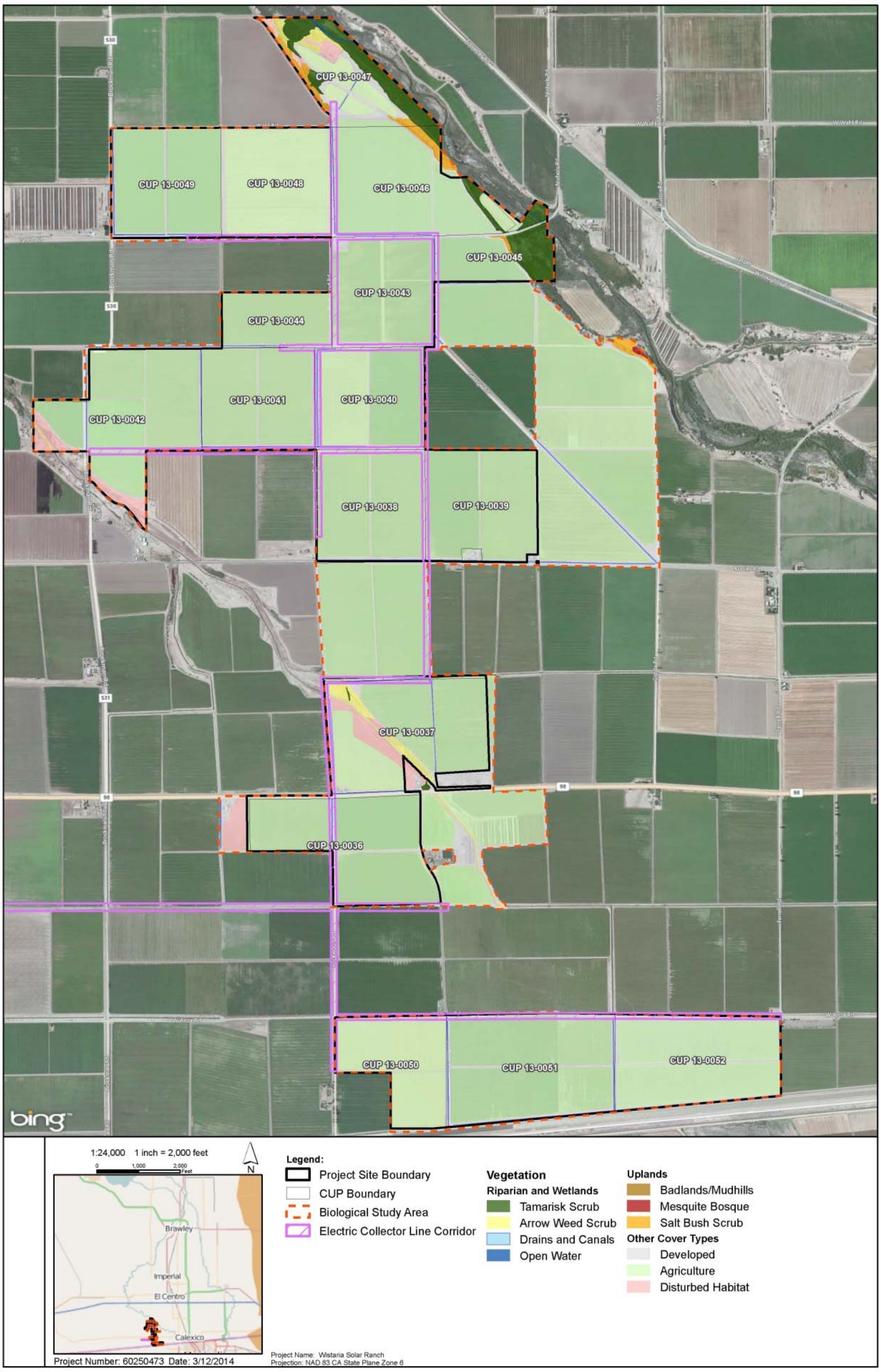
CUP 13-0051 is bounded by Anza Road to the north; the All American Canal (Drain Number 12) and the U.S-Mexico Border on the south; the Greeson Drain on the east; and the Woodbine Canal and Mandrapa Road on the west. The CUP area is surrounded by agricultural land on the north, east and west. However, some of the lands to the north have been permitted for solar energy generation as part of the Mount Signal and Calexico Solar Farm Projects. Two CUPs are proposed on either side of CUP 13-0051: CUP 13-0050 is proposed to the west and CUP 13-0052 is proposed to the east. The Electric Collector Line Corridor is proposed to align east-west along the entire northern boundary of the CUP area.

One primary and secondary point of access is proposed to CUP 13-0051. The primary and secondary access locations would be from the north off of Anza Road. The electric line associated with CUP 13-0051 would extend west along Anza Road across Mandrapa Road, the Woodbine Canal, and IID Energy facilities and follow the Electric Collector Line Corridor associated with CUP 13-0050. Substation and O&M facilities may be located in the northwest corner of the CUP area (refer to **Figure 2.0-21** in Chapter 2.0, Project Description).

CUP 13-0052

CUP 13-0052 is bounded by Wistaria Lateral 1 and Anza Road to the north; the All American Canal (Drain Number 11) and the U.S-Mexico Border on the south; Ferrell Road on the east; and the Greeson Drain on the west. The CUP area is surrounded by agricultural land on the north, east and west. However, some of these lands have been permitted for solar energy generation as part of the Mount Signal and Calexico Solar Farm Projects. CUP 13-0051 is proposed to the west. The Electric Collector Line Corridor is proposed to align east-west along the entire northern boundary of the CUP area.

One primary and one secondary point of access is proposed to CUP 13-0052. The primary and secondary access locations would be from the north off of Anza Road. The electric line associated with CUP 13-0052 would extend west along Anza Road across the Greeson Drain and IID Energy facilities and then follow the corridor described in CUP 13-0051. Substation and O&M facilities may be located in the northwest corner of the CUP area (refer to **Figure 2.0-22** in Chapter 2.0, Project Description).



Source: AECOM 2014.

FIGURE 4.12-2
VEGETATION COMMUNITIES AND COVER TYPES

Vegetation Communities

Ten vegetation communities and other cover types were identified within the BSA, including upland, riparian, and other cover types (**Table 4.12-2** and **Figure 4.12-2**). As previously noted, the BSA is dominated by agriculture fields. Vegetation communities and other cover types found in the BSA are described in detail below.

TABLE 4.12-2
EXISTING VEGETATION COMMUNITIES AND COVER TYPES WITHIN THE BSA (ACRES)

Vegetation Communities and Other Cover Types	Study Area[1]
Riparian and Wetlands	**145.32**
Arrow Weed Scrub	25.76
Drains and Canals	32.13
Open Water	1.61
Tamarisk Scrub	85.82
Uplands	**22.01**
Badlands/Mudhills	0.27
Mesquite Bosque	0.99
Salt Bush Scrub	20.75
Other Cover Types	**3,510.15**
Agriculture	3,017.39
Developed	428.11
Disturbed Habitat	64.65
TOTAL	**3,677.48**

Source: AECOM 2014e, p. 3-2.
[1] All values were rounded to the nearest hundredth-acre after summation.

Riparian and Wetland Vegetation Communities

Arrow Weed Scrub

The dominant and indicator plants of this community within the BSA was arrow weed (*Pluchea sericea*), as well as honey mesquite (*Prosopis glandulosa*), tamarisk (*Tamarix ramosissima*), Californiattail (*Typha spp*.), and ravenna grass (*Saccharum ravennae*). Arrow weed scrub occurs in the eastern portion of the BSA near the New River and within the drainage in the southern portion of the BSA (CUPs 13-0037 and 13-0047).

Drains and Canals

Concrete canals and earthen drains are located throughout the BSA (CUPs 13-0037, 13-0038, 13-0039, 13-0040, 13-0042, 13-0046, 13-0047, 13-0049). Concrete canals are used to convey water to the agricultural fields. While the earthen drains are used to convey water away from the agricultural fields. The drains and canals were mostly unvegetated due to high water velocity, depth, and mechanical vegetation clearing by farmers and/or IID maintenance crews. Some of the earthen canals with limited water flow had small stands of tamarisk, Californiattail, or ravenna grass.

Open Water

The main channel of the New River passes through the far eastern edge of the BSA (CUP 13-0047). The channel itself is open water, while the banks are lined with tamarisk, four-wing saltbush (*Atriplex canescens*), ravenna grass, arrow weed, and common reed (*Phragmites australis*).

Tamarisk Scrub

This non-native vegetation community is a monoculture of tamarisk species. Areas of tamarisk scrub were mapped and are associated with the drainage and canals in the southern portion of the BSA and near the New River in the eastern portion of the BSA (CUPs 13-0037, 13-0045, 13-0046, 13-0047). Other common associates with this vegetation community included quail brush (*Atriplex lentiformis*) and arrow weed.

Upland Vegetation Communities

Badlands and/or Mudhills

Badlands and/or mudhills are characterized by upland habitat that is unvegetated, highly unstable, and erosive. Badlands and/or mudhills occurred in the northern portion of the BSA along the western bank of the New River (outside of Project footprint near CUPs 13-0045, 13-0046, 13-0047).

Mesquite Bosque

Mesquite bosque occurs in areas where honey mesquite forms larger woodlands that are not directly associated with an artificial irrigation system. This community is considered sensitive by CNDDB (AECOM 2014e). One fragmented location of mesquite bosque was mapped on the western bank of the New River in the northeastern portion of the BSA (outside of the Project footprint, southeast of CUP 13-0045, east of CUPs 13-0040 and 13-0043 along New River).

Desert Saltbush Scrub

Desert saltbush scrub is located in low areas with denser soils possibly affected by caliche, and occurs on the dry edges of arrow weed scrub, which is dominated by two saltbush species, quail brush and four-wing saltbush, along with alkali golden bush (*Isocoma acradenia var. eremophila*) as an occasional associate. Desert saltbush scrub occurs in fragmented segments in the northeastern portion of the BSA along the western bank of the New River (CUPs 13-0045, 13-0046, 13-0047).

Other Cover Types

Agriculture

Agriculture fields are located throughout the BSA. The majority of the lands mapped as agriculture within the BSA are for hay production, mainly alfalfa. Large fields were recently cleared at the time of vegetation mapping or had been temporarily fallow but did not support any substantial emergent native vegetation.

Developed

The developed land within the BSA consists of roads, commercial agricultural buildings, and residences (all CUPs 13-0036 thru 13-0052). Roads are located throughout the BSA. Farm houses were limited to a few locations (near CUPs 13-0036, 13-0037, 13-0038, 13-0039, 13-0042, 13-0049).

Disturbed Habitat

The disturbed habitat was found along Greeson Wash and the western and northeastern portions of the BSA (CUPs 13-0036, 13-0037, 13-0047). This habitat consists of previously graded areas that are either devoid of vegetation or dominated by Saharan mustard (*Brassica tournefortii*).

Jurisdictional Waters and Wetlands

A jurisdictional delineation of waters was performed by RECON on September 8 and 9, 2012 (Appendix A included in **Appendix J** of this EIR). A total of approximately 135.5 acres (54.8 hectares) of WUS and/or state occur within the BSA (**Table 4.12-3**). Of this total, approximately 68.7 acres (27.8 hectares) are jurisdictional WUS and WS under the purview of theUSACE, RWQCB, and CDFW, composed of vegetated wetlands (56.6 acres [22.9 hectares]) and non-wetland waters (12.1 acres [4.9 hectares]). The remainder of the jurisdictional resources exclusively under the purview of CDFW are composed of approximately 66.8 acres (27.0 hectares), and include riparian habitat (58.3 acres [23.6 hectares]) and unvegetated channels (8.5 acres [3.4 hectares]) (AECOM 2014e, p. 3-4). The locations of jurisdictional features identified during the delineation are provided in **Figure 4.12-3a thru Figure 4.12-3k.**

TABLE 4.12-3
POTENTIAL JURISDICTIONAL WATERS WITHIN THE BSA

Type of Jurisdictional Waters	Vegetation Community	Regulatory Authority	Total Acreage
Jurisdictional WUS and WS			
Wetland	Tamarisk Scrub and Arrow Weed Scrub	USACE, RWQCB, and CDFW	56.6
Non-Wetland Waters	Unvegetated Channel	USACE, RWQCB, and CDFW	12.1
Subtotal of Jurisdictional WUS and WS			**68.7**
Jurisdictional Waters Exclusively CDFW			
Riparian	Tamarisk Scrub and Arrow Weed Scrub	CDFW Only	58.3
Other Waters	Unvegetated Channel	CDFW Only	8.5
Subtotal Jurisdictional Waters of the State			**66.8**
TOTAL JURISDICTIONAL WATERS			**135.5**

Source: AECOM 2014e, p. 3-4.

Wetland WUS and WS occur along the New River, Greeson Wash/Drain, and within the IID drains. Wetlands associated with the New River occur along and adjacent to the primary low flow channel, secondary channels, and within the lower floodplain terraces. Wetlands associated with Greeson Wash/Drain occur along the low flow channel and along the major secondary channels of the floodplain. Wetlands associated with the IID drains are restricted to the low flow channel and a portion of the lower banks subject to prolonged flooding or wetness. Non-wetland waters of the U.S. and state within the BSA include a few small ephemeral drainages within the Greeson Wash/Drain floodplain and the concrete-lined IID canals that lacked hydrophytic vegetation (AECOM 2014e, p. 3-4).

CDFW exclusive jurisdictional resources include larger portions of the New River and Greeson Wash/Drain floodplains that support the xeroriparian habitat occurring outside of the limits of WUS. These xeroriparian areas support hydrophytic vegetation dominated by salt cedar (*Tamarix chilensis*), arrow weed, iodine bush (*Allenrolfea occidentalis*), bush seepweed (Suaeda moquinii), and big saltbush (Atriplex lentiformis) stands of varying density and distribution; however, these areas lack hydric soils and indicators of wetland hydrology. All features delineated within the BSA convey natural flows that originate from sources that have a direct or indirect connection to a traditional navigable water (e.g., Salton Sea) (AECOM 2014e, p. 3-4).

Detailed survey methods and results for the jurisdictional determination can be found in the 2013 RECON Biological Technical Report (Appendix A included in **Appendix J** of this EIR).

Source: AECOM 2014.

FIGURE 4.12-3A
POTENTIAL JURISDICTIONAL WATERS OF THE U.S. AND STATE – CUP 13-0049

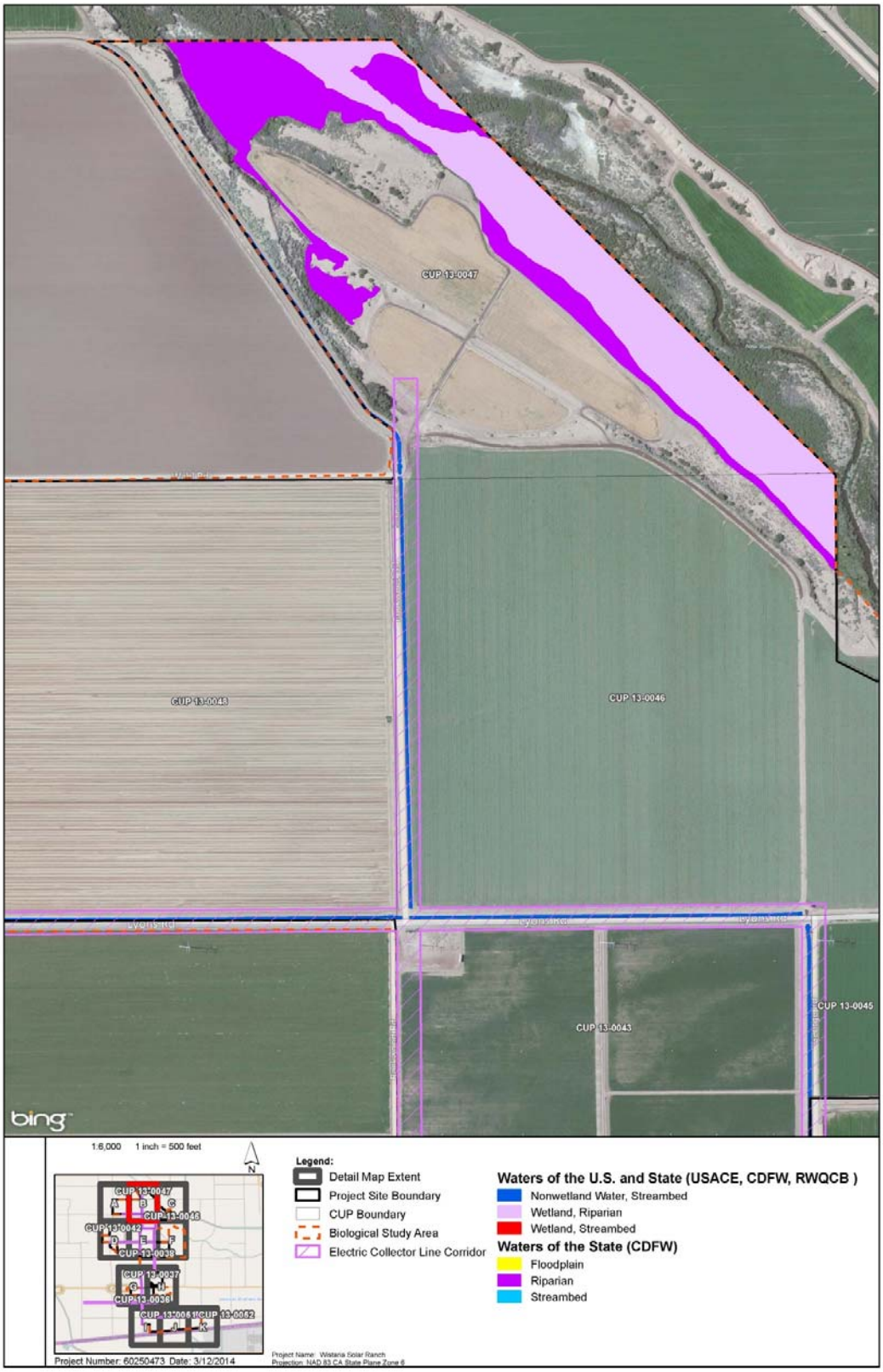
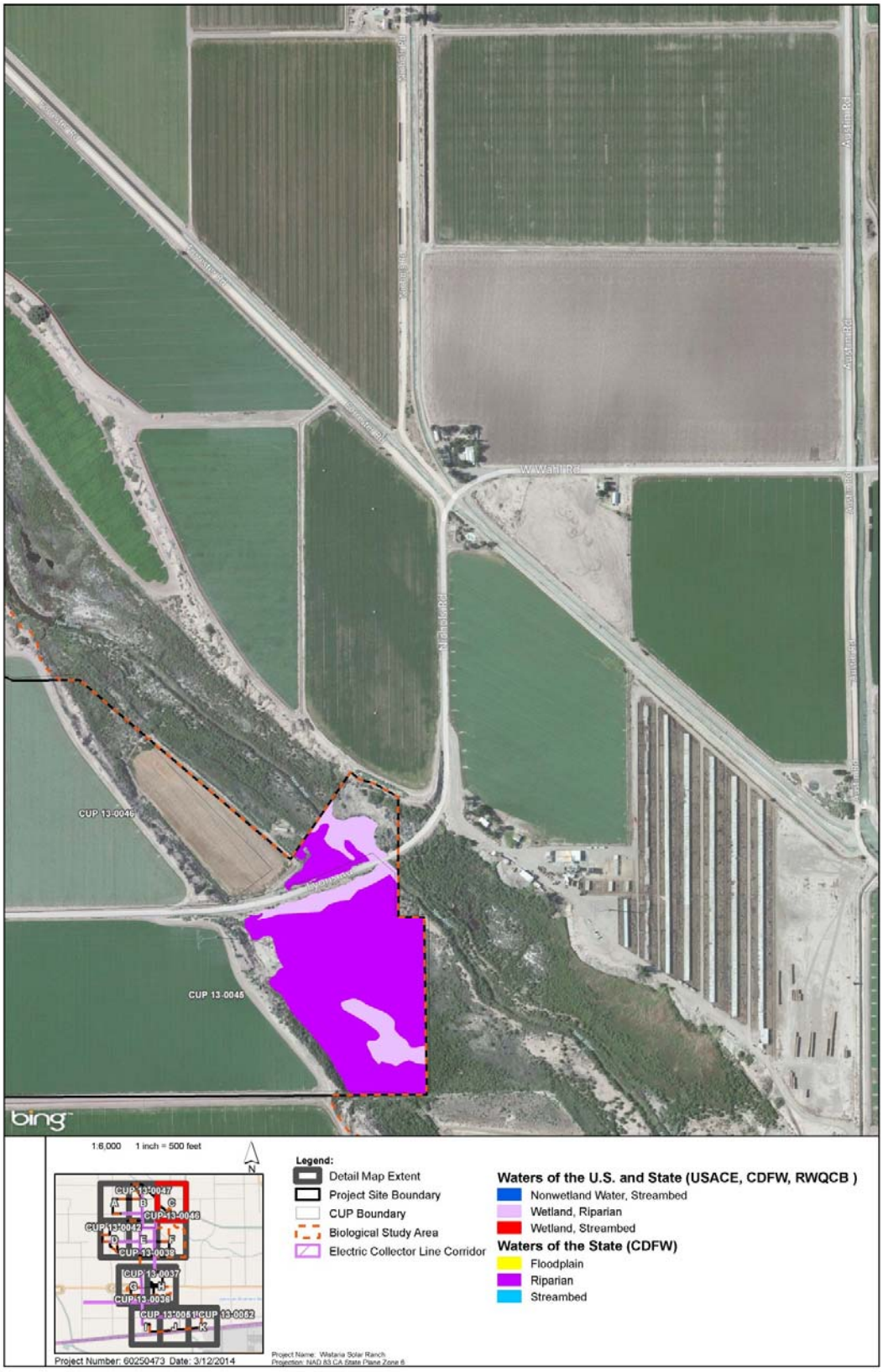


FIGURE 4.12-3B
POTENTIAL JURISDICTIONAL WATERS OF THE U.S. AND STATE – CUPS 13-0046, 13-0047 AND 13-0048

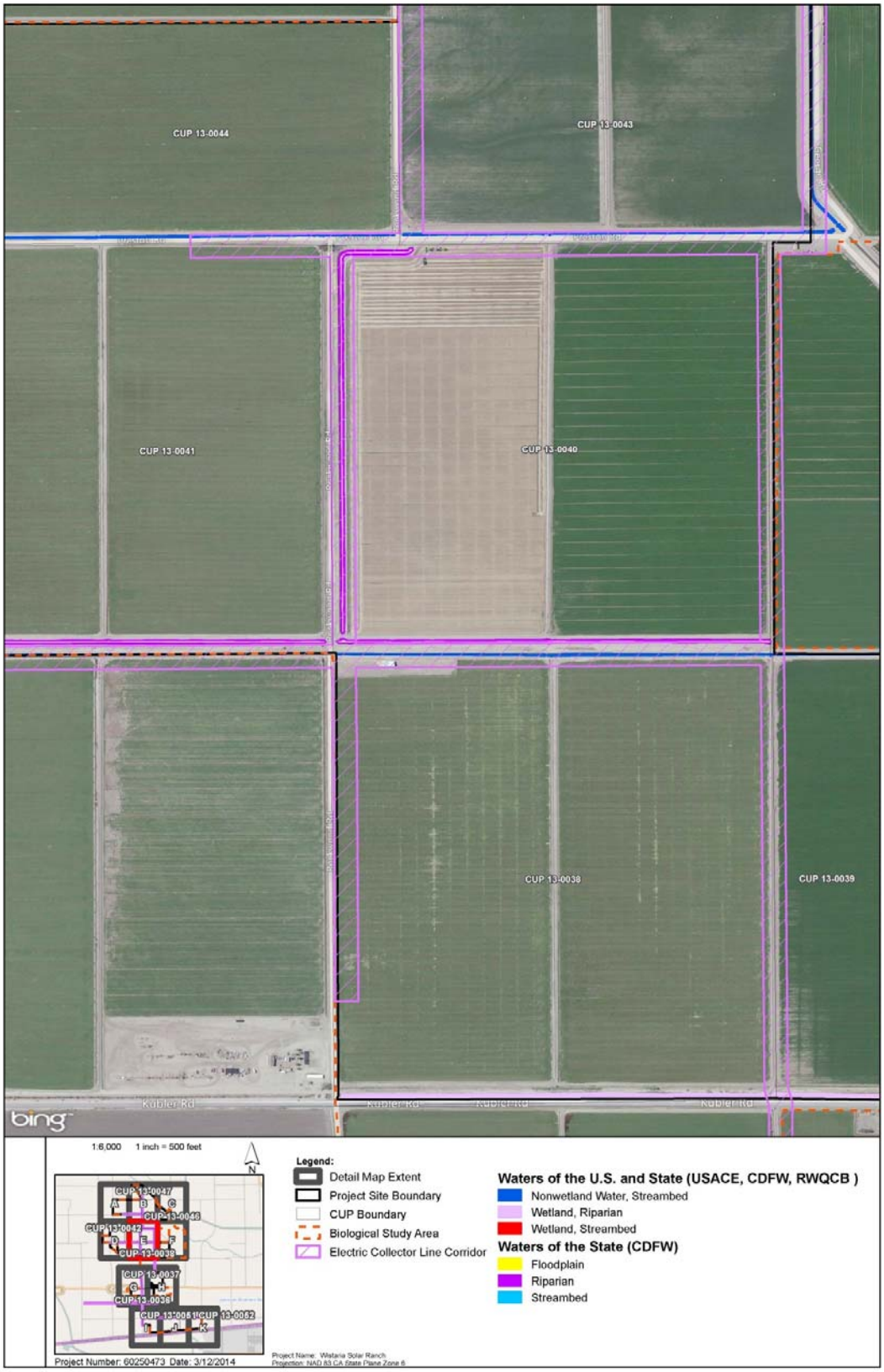


Source: AECOM 2014.

FIGURE 4.12-3C
POTENTIAL JURISDICTIONAL WATERS OF THE U.S. AND STATE – CUPS 13-0045 & 13-0046

Source: AECOM 2014.

FIGURE 4.12-3D
POTENTIAL JURISDICTIONAL WATERS OF THE U.S. AND STATE – CUP 13-0042



Source: AECOM 2014.

FIGURE 4.12-3E

POTENTIAL JURISDICTIONAL WATERS OF THE U.S. AND STATE – CUPS 13-0030 THRU 13-0041 & 13-0043

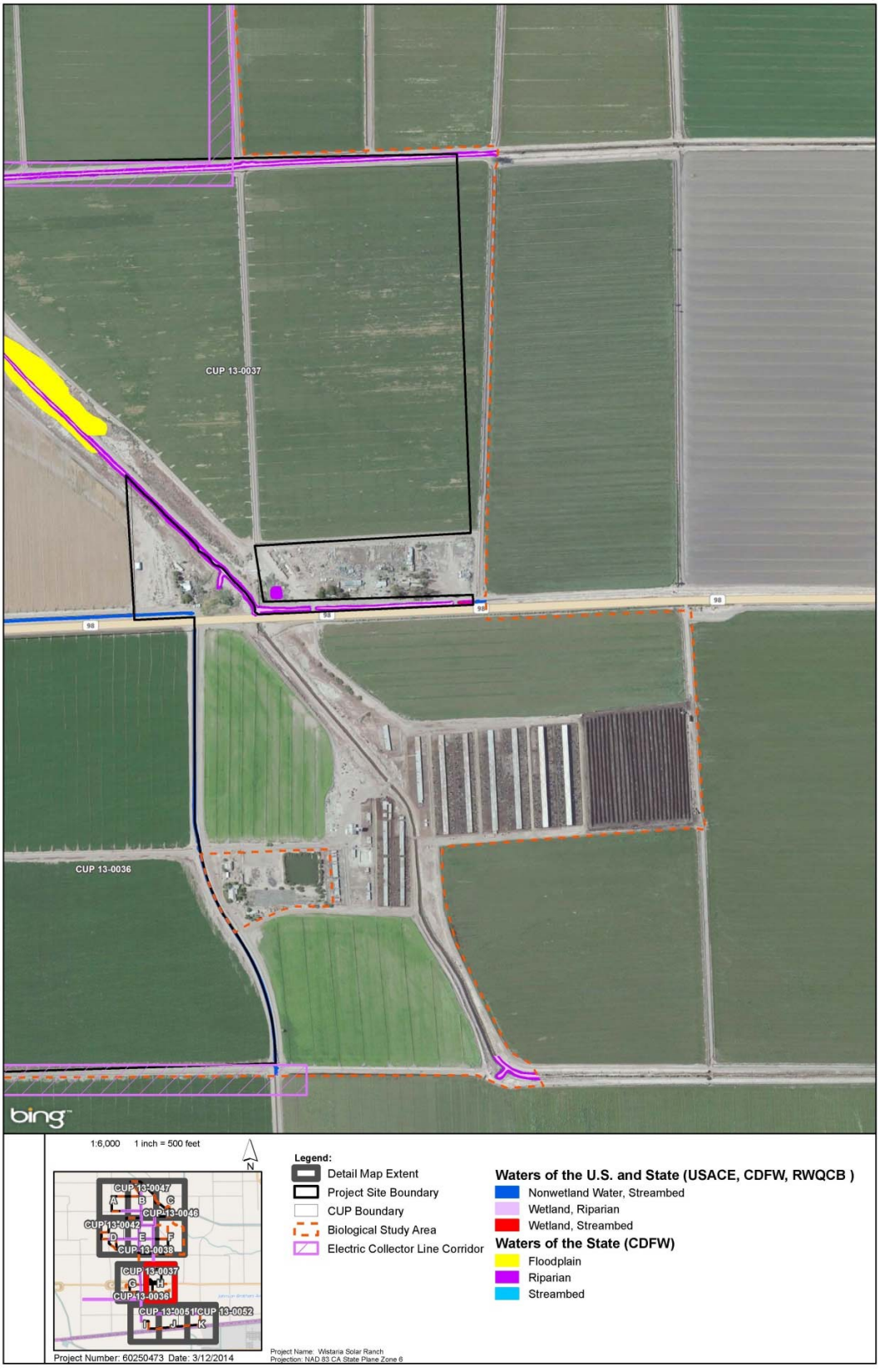
Source: AECOM 2014.

FIGURE 4.12-3F
POTENTIAL JURISDICTIONAL WATERS OF THE U.S. AND STATE – CUP 13-0039

Source: AECOM 2014.

FIGURE 4.12-3G

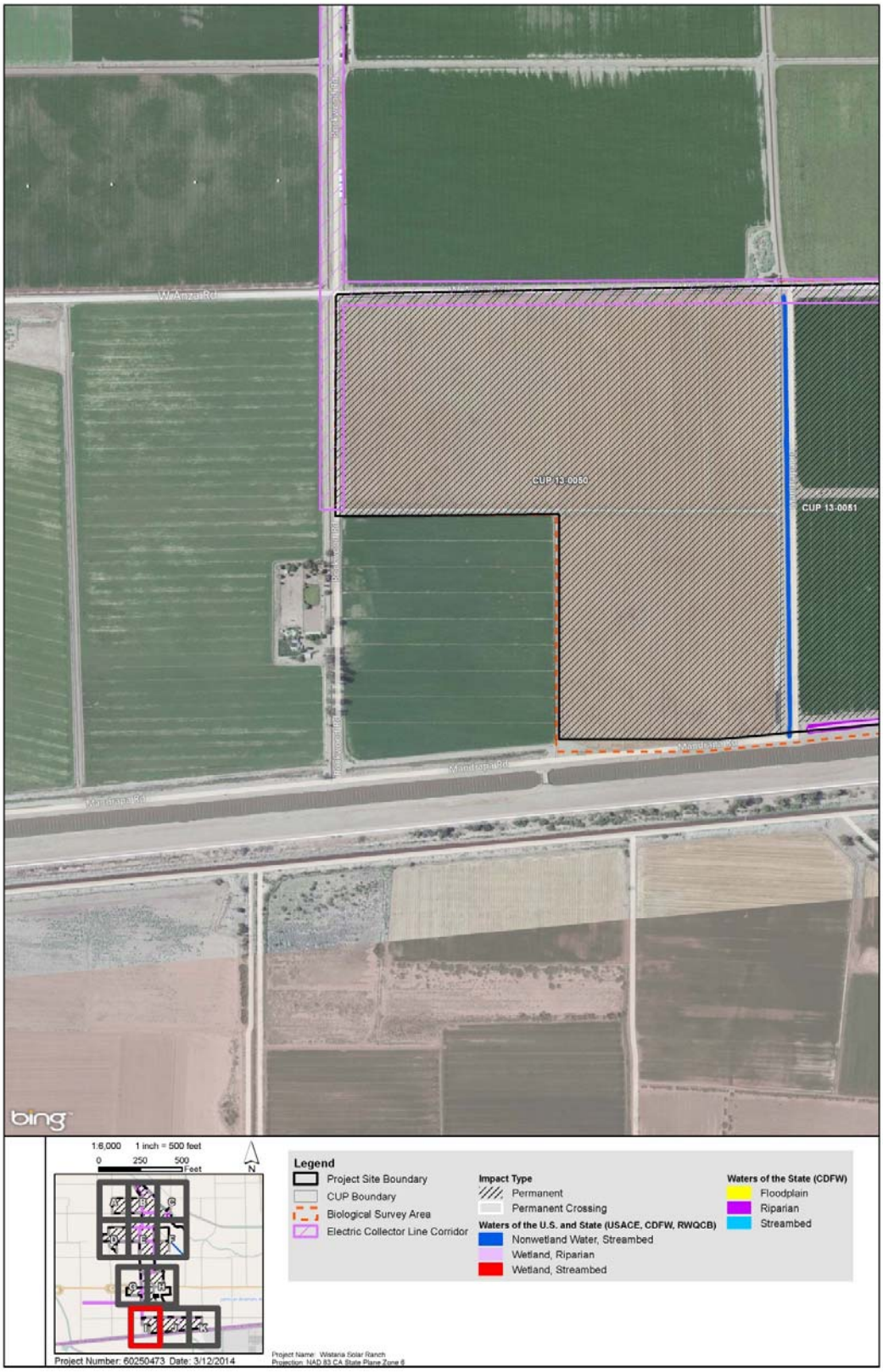
POTENTIAL JURISDICTIONAL WATERS OF THE U.S. AND STATE – CUPS 13-0036 & 13-0037



Source: AECOM 2014.

FIGURE 4.12-3H

POTENTIAL JURISDICTIONAL WATERS OF THE U.S. AND STATE – CUPS 13-0036 & 13-0037



Source: AECOM 2014.

FIGURE 4.12-3I
POTENTIAL JURISDICTIONAL WATERS OF THE U.S. AND STATE – CUPS 13-0050 & 13-0051

Source: AECOM, 2014.

FIGURE 4.12-3J
POTENTIAL JURISDICTIONAL WATERS OF THE U.S. AND STATE – CUPS 13-0051 & 13-0052

Source: AECOM 2014.

FIGURE 4.12-3K
POTENTIAL JURISDICTIONAL WATERS OF THE U.S. AND STATE – CUPS 13-0051 & 13-0052

Flora

This section discusses plant species detected and special-status plant species with the potential to occur within the BSA or known from the vicinity of the BSA. A total of 34 plant species were detected during botanical surveys. Of these, 24 plant species are native to the region. Past and current agricultural activities have decreased the diversity of native plants within the BSA. These activities have also influenced the exotic weeds found within the BSA. Ten of the plant species detected on-site were non-native: ravenna grass, Mediterranean grass (*Schismus arabicus*), Saharan mustard, London rocket (*Sisymbrium irio*), lambs quarters (*Chenopodium album*), russian thistle (*Salsola tragus*), white sweetclover (*Melilotus albus*), redstem stork's bill (*Erodium cicutarium*), gum (*Eucalyptus sp.*), and tamarisk (AECOM 2014e, p. 3-5). A complete list of all plant species detected during botanical surveys is included as Appendix E to **Appendix J** of this EIR).

Table 4.12-4 summarizes special-status plant species that were evaluated based on the six-quad CNDDB search and pre-field investigations. Field surveys determined that there was moderate potential for one special-status plant species, Californialifornia satintail (*Imperata brevifolia*) to occur along the drains and canals within the BSA. If present, this conspicuous species would have been observed during the rare plant habitat assessment and/or vegetation mapping, but it was not detected. No other special-status plant species had potential to occur within the BSA. Based on the results of the habitat assessment, rare plant surveys were determined to not be necessary (AECOM 2014e, p. 3-5). The following sections discuss the special-status plant species with potential to occur within the BSA or buffer.

TABLE 4.12-4
SPECIAL-STATUS PLANT SPECIES POTENTIALLY OCCURRING WITHIN THE BSA AND/OR THE VICINITY

Common Name Scientific Name	Sensitivity Status[1]	Habitat Requirements	Findings	Potential for Occurrence within the BSA[2]	Potential for Occurrence within a 500-foot Buffer of the BSA[2]
Watson's Amaranth *Amaranthus watsonii*	CRPR 4.3	Usually occurs in wetlands, but occasionally found in non-wetlands	Not detected. No known locations from the vicinity. No suitable habitat present in BSA or buffer. Not expected to occur in BSA or buffer.	Not Expected	Not Expected
Salton Milk-Vetch *Astragalus crotalariae*	CRPR 4.3	Creosote bush scrub, <3,640 feet (1,110 meters)	Not detected. No known locations from the vicinity. No suitable habitat present in BSA or buffer. Not expected to occur in BSA or buffer.	Not Expected	Not Expected
Pink Fairy-Duster *Calliandra eriophylla*	CRPR 2B.3	Sonoran Desert, sandy washes, slopes and mesas, typically found at ± 5,000 feet (1,524 meters)	Not detected. Nearest known location is a historical (1970) CNDDB point approximately 8 miles (13 kilometers) west of the BSA. No suitable habitat present in BSA or buffer. Not expected to occur in BSA or buffer.	Not Expected	Not Expected
Emory's Crucifixion-Thorn *Castela emoryi*	CRPR 2B.2	Desert areas on dry, gravelly washes, slopes, plains found at ±2,150 feet (655 meters)	Not detected. Nearest known location is a historical (1956) CNDDB point approximately 12 miles (19 kilometers) west of the BSA. No suitable habitat present in BSA or buffer. Not expected to occur in BSA or buffer.	Not Expected	Not Expected

TABLE 4.12-4
SPECIAL-STATUS PLANT SPECIES POTENTIALLY OCCURRING WITHIN THE BSA AND/OR THE VICINITY

Common Name Scientific Name	Sensitivity Status[1]	Habitat Requirements	Findings	Potential for Occurrence within the BSA[2]	Potential for Occurrence within a 500-foot Buffer of the BSA[2]
Wiggins' Croton *Croton wigginsii*	CRPR 2B.2	Creosote bush scrub, dunes	Not detected. Nearest known location is a 2010 CNDDB point approximately 10 miles (16 kilometers) northwest of the BSA near Plaster City, California. No suitable habitat present in BSA or buffer. Not expected to occur in BSA or buffer.	Not Expected	Not Expected
Ribbed Cryptantha *Cryptantha costata*	CRPR 4.3	Desert dunes, quite specific to loose drifting sand <1,625 feet (495 meters)	Not detected. No known locations from the vicinity. No suitable habitat present in BSA or buffer. Not expected to occur in BSA or buffer.	Not Expected	Not Expected
Winged Cryptantha *Cryptantha holoptera*	CRPR 4.3	Sonoran desert scrub, primarily on rocky slopes <5500 feet (1676 meters)	Not detected. No known locations from the vicinity. No suitable habitat present in BSA or buffer. Not expected to occur in BSA or buffer.	Not Expected	Not Expected
Wolf's Cholla *Cylindropuntia wolfii*	CRPR 4.3	Alluvial fans and rocky slope in Sonoran desert scrub	Not detected. Nearest known location is from 2010 surveys for 8minutenergy solar projects approximately 5 miles (8 kilometers) to the west in native desert habitat. No suitable habitat present in BSA or buffer. Not expected to occur in BSA or buffer.	Not Expected	Not Expected
Annual Rock-Nettle *Eucnide rupestris*	CRPR 2B.2	Creosote bush scrub	Not detected. No known locations from the vicinity. No suitable habitat present in BSA or buffer. Not expected to occur in BSA or buffer.	Not Expected	Not Expected
Utah Vine Milkweed *Funastrum utahense*	CRPR 4.2	Mojave or Sonoran Desert, dry sandy or gravely areas <3,280 feet (1,000 meters)	Not detected. No known locations from the vicinity. No suitable habitat present in BSA or buffer. Not expected to occur in BSA or buffer.	Not Expected	Not Expected
Baja California Ipomopsis *Ipomopsis effusa*	CRPR 2B.1	Creosote bush scrub, alluvial fans	Not detected. Nearest known location is a 2004 CNDDB point approximately 8 miles (13 kilometers) west of the BSA. No suitable habitat present in BSA or buffer. Not expected to occur in BSA or buffer.	Not Expected	Not Expected
Brown Turbans *Malperia tenuis*	CRPR 2B.3	Sonoran desert scrub; sandy areas and rocky slopes; <1,640 feet (500 meters)	Not detected. Nearest known location is a 1992 CNDDB point approximately 8 miles (13 kilometers) west of the BSA. No suitable habitat present in BSA or buffer. Not expected to occur in BSA or buffer.	Not Expected	Not Expected

TABLE 4.12-4
SPECIAL-STATUS PLANT SPECIES POTENTIALLY OCCURRING WITHIN THE BSA AND/OR THE VICINITY

Common Name Scientific Name	Sensitivity Status[1]	Habitat Requirements	Findings	Potential for Occurrence within the BSA[2]	Potential for Occurrence within a 500-foot Buffer of the BSA[2]
Thurber's Pilostyles *Pilostyles thurberi*	CRPR 4.3	Creosote bush scrub, sandy alluvial plains	Not detected. Nearest known location is from 2010 surveys for 8minutenergy solar projects approximately 5 miles (8 kilometers) to the west in native desert habitat. No suitable habitat present in BSA or buffer. Not expected to occur in BSA or buffer.	Not Expected	Not Expected
Parish's Desert Thorn *Lycium parishii*	CRPR 2B.3	Sonoran desert scrub. sandy–rocky slopes and canyons; <3,281 feet (<1000 meters)	Not detected. Nearest known location is from 2010 surveys for 8minutenergy solar projects approximately 5 miles (8 kilometers) to the west in native desert habitat. Low potential to occur in CUP 13-0047 and portions of parcels along the New River due to the presence of sandy or rocky areas along the edge of the New River.	Low	Low
Chaparral Sand Verbena *Abronia villosa* var. *aurita*	CRPR 1B.1	Chaparral, coastal scrub, desert dunes.	Not detected. Nearest known location is a historical (1949) CNDDB point approximately 5 miles (8 kilometers) away in Calexico, California. Low potential to occur in CUP 13-0047 and portions of parcels along the New River due to the presence of sandy or rocky areas along the edge of the New River.	Low	Low
Abram's Spurge *Chamaesyce abramsiana*	CRPR 2B.2	Mojavean desert scrub and Sonoran desert scrub within sandy areas. <656 feet (<200 meters)	Not detected. Nearest known location is a historical (1904) CNDDB point approximately 4 miles (6 kilometers) away in Heber, California. Low potential to occur in CUP 13-0047 and portions of parcels along the New River due to the presence of sandy or rocky areas along the edge of the New River.	Low	Low
Gravel Milk-Vetch *Astragalus sabulonum*	CRPR 2B.2	Desert dunes, Mojavean desert scrub, Sonoran desert scrub, usually sandy sometimes gravelly, flats, washes, and roadsides.	Not detected. Nearest known location is a historical (1902) CNDDB point approximately 5 miles (8 kilometers) away in Calexico, California. Low potential to occur in CUP 13-0047 and portions of parcels along the New River due to the presence of sandy or rocky areas along the edge of the New River.	Low	Low

TABLE 4.12-4
SPECIAL-STATUS PLANT SPECIES POTENTIALLY OCCURRING WITHIN THE BSA AND/OR THE VICINITY

Common Name Scientific Name	Sensitivity Status[1]	Habitat Requirements	Findings	Potential for Occurrence within the BSA[2]	Potential for Occurrence within a 500-foot Buffer of the BSA[2]
Mud Nama *Nama stenocarpum*	CRPR 2B.2	Marshes and swamps; riparian, lake-margins, streambanks, edges.	Not detected. Nearest known location is a historical (1902) CNDDB point approximately 5 miles (8 kilometers) northwest of the BSA. Low potential to occur in CUP 13-0047 and portions of parcels along the New River due to the presence of sandy or rocky areas along the edge of the New River.	Low	Low
Hairy Stickleaf *Mentzelia hirsutissima*	CRPR 2B.3	Creosote bush scrub; washes, fans, and slopes; <1,969 feet (<600 meters).	Not detected. Nearest known location is a historical (1961) CNDDB point on the edge of the BSA at the intersection of Brockman Road and Preston Road. Low potential to occur in CUP 13-0047 and portions of parcels along the New River due to the presence of sandy or rocky areas along the edge of the New River.	Low	Low
Sand Food *Pholisma sonorae*	CRPR 1B.2	dunes;<656 feet (<200 meters)	Not detected. Nearest known location is a historical (1915) CNDDB point approximately 10 miles (16 kilometers) northeast of the BSA. Low potential to occur in CUP 13-0047 and portions of parcels along the New River due to the presence of sandy or rocky areas along the edge of the New River.	Low	Low
California Satintail *Imperata brevifolia*	CRPR 2B.1	Chaparral, coastal scrub, Mojavean desert scrub, meadows and seeps, riparian scrub.	Not detected. Nearest known location is a historical (1963) CNDDB point approximately 0.25 mile (0.4 kilometer) from east side of the BSA. If present, this species would have been observable during vegetation mapping. Suitable habitat for this species occurs within the drains and/or canals that traverse the BSA.	Moderate	Moderate

Source: AECOM 2014e, pp. 3-6 and 3-7.

[1] Sensitivity Status Key

CRPR California Rare Plant Rank: 1B: Considered rare, threatened, or endangered in California and elsewhere
2B: Plants rare, threatened, or endangered in California, but more common elsewhere;
3: Plants for which we need more information – review list; 4: Plants of limited distribution a watch list
Decimal notations: .1 - Seriously endangered in California, .2 – Fairly endangered in California, .3 – Not very endangered in California

[2] Species Potential for Occurrence: Not Expected = Species not detected during Project surveys and not expected to occur; Low Potential = Species not detected during Project surveys, but has low potential to occur because suitable habitat present, but of marginal quality; Moderate Potential = Species not detected during Project surveys, but has moderate potential to occur because suitable habitat present; High Potential – Species not detected during Project surveys, but has high potential to occur because suitable habitat present, and species known to occur within the vicinity; Present = Species detected during Project surveys.

Federally Listed Plant Species

Federally listed plant species include those listed, or proposed for listing (including candidate species), as threatened or endangered per Section 4 of the ESA. Based on site-specific habitat evaluations conducted by AECOM and a literature review, including a CNDDB records search, it was determined that no federally listed plant species have potential to occur within the BSA (AECOM 2014e, p. 3-5).

State-listed Plant Species

State-listed plant species include those listed, or candidates for listing, as threatened or endangered under the CESA. Based on site-specific habitat evaluations conducted by AECOM and a literature review, including a CNDDB records search, it was determined that no state-listed plant species have potential to occur within the BSA (AECOM 2014e, p. 3-5).

Other Special-Status Plant Species

Other special-status plant species including those species not protected under the ESA or CESA were identified by CNPS's CRPR System. Eight non-listed special-status plant species were evaluated for potential occurrence within the BSA based on habitat conditions and regional proximity (**Table 4.12-4**) (AECOM 2014e, p. 3-10).

During field surveys within the BSA, excluding CUP 13-0047 and portions of parcels along the New River, one species, California satintail, was determined to have potential to occur within the BSA based on regional occurrence data and habitat analysis. This species was not detected during vegetation mapping of the BSA. Rare plant surveys were not conducted for this species because, if present, this conspicuous perennial, rhizomatous grass would have been observed during the rare plant habitat assessment and/or vegetation mapping (AECOM 2014e, p. 3-10).

CUP 13-0047 and portions of parcels along the New River were added to the BSA subsequent to the completion of the field rare plant assessment. Based on desktop analysis, Parish's desert thorn (*Lycium parishii*), chaparral sand verbena (*Abronia villosa* var. *aurita*), Abram's spurge (*Chamaesyce abramsiana*), gravel milk-vetch (*Astragalus sabulonum*), mud nama (*Nama stenocarpum*), hairy stickleaf (*Mentzelia hirsutissima*), sand food (*Pholisma sonorae*), and California satintail may have some potential to occur in these areas due to the presence of sandy or rocky areas along the edge of the New River. An on-site rare plant habitat assessment would be required to determine if focused rare plant surveys are necessary for these species (AECOM 2014e, p. 3-10).

Wildlife Species

This section discusses wildlife species detected, with potential to occur within the BSA, or known from the vicinity of the BSA. A total of 88 wildlife species were detected during the habitat assessment and protocol BUOW surveys (refer to **Appendix J**). This included five reptile and amphibian species, 72 avian species, and nine mammal species. Commonly observed reptiles included the desert spiny lizard (*Sceloporus magister)* and side-blotched lizard (*Uta stansburiana).* Commonly observed avian species included red-winged blackbird (*Agelaius phoeniceus*), western meadowlark (*Sturnella neglecta*), black phoebe (*Sayornis nigricans*), common yellowthroat (*Geothlypis trichas*), mourning dove (*Zenaida macroura*), killdeer (*Charadrius vociferus*), and long-billed curlew (*Numenius americanus*). Commonly observed mammal species included desert cottontail (*Sylvilagus audubonii*), Botta's pocket gopher (*Thomomys bottae*), and round-tailed ground squirrel (*Spermophilus tereticaudus*). A complete list of all wildlife species detected during wildlife surveys is included as Appendix F to **Appendix J** of this EIR.

Of these species, ten special-status wildlife species were observed (or definitive sign detected) within the BSA (AECOM 2014e, p. 3-10):

- Willow flycatcher (*Empidonax traillii*) – CESA: Endangered

- Northern harrier (*Circus cyaneus*) – CDFW: Species of Special Concern
- Western burrowing owl (*Athene cunicularia hypugaea*) – CDFW: Species of Special Concern
- American peregrine falcon (*Falco peregrinus anatum*) – CDFW: Fully Protected Species
- Merlin (*Falco columbarius*) – CDFW: Watch List
- Prairie falcon (*Falco mexicanus*) – CDFW: Watch List
- Yellow-headed blackbird (Xanthocephalus xanthocephalus) – CDFW: Species of Special Concern
- Loggerhead shrike (*Lanius ludovicianus*) – CDFW: Species of Special Concern
- White-faced Ibis (*Plegadis chihi*) – CDFW: Watch List
- American badger (*Taxidea taxus*) – CDFW: Species of Special Concern

Table 4.12-5 summarizes special-status wildlife species evaluated based on the six-quad CNDDB search and pre-field investigations. A discussion of the special-status wildlife species detected within the BSA or buffer is included the following sections (AECOM 2014e, p. 3-11).

TABLE 4.12-5
SPECIAL-STATUS WILDLIFE SPECIES POTENTIALLY OCCURRING WITHIN THE BSA AND/OR THE VICINITY

Common Name Scientific Name	Sensitivity Status[1]	Habitat Requirements	Findings[2]	Potential for Occurrence within the BSA[2]	Potential for Occurrence within a 500-foot Buffer of the BSA[2]
Amphibians					
Lowland Leopard Frog (*Lithobates yavapaiensis*)	CDFW: Species of Special Concern	Permanent water associated with small streams and rivers, springs marshes, and shallow ponds. Abundant aquatic vegetation.	Not detected. Nearest known location is a historical (1909) CNDDB point approximately 8 miles (13 kilometers) northwest of the BSA. Currently not known to inhabit the Imperial Valley. Suitable habitat is present, but it is not expected to occur within the BSA or buffer due to disturbance from agriculture.	Not Expected	Not Expected
Sonoran desert toad (Incilius alvarius)	CDFW: Species of Special Concern	Inhabits grasslands, arid desert lowlands, mountain canyons with oaks and sycamores, and pinyon-oak-juniper mountain forests. Found in washes, river bottoms, springs, reservoirs, canals, irrigation ditches, streams, temporary pools, and away from water.	Not detected. Nearest known location is a historical (1912) CNDDB point approximately 10 miles (16 kilometers) northeast of the BSA near Holtville, California (AECOM 2014e, p. 3-13). Formerly found in irrigated lowlands of the southern Imperial Valley, but possibly extirpated (AECOM 2014e, p. 3-13).	Not Expected	Not Expected
Reptiles					
Flat-Tailed Horned Lizard (*Phrynosoma mcallii*)	CDFW: Species of Special Concern	Found in desert habitat, often associated with sand flats and sand dunes, but also found on concreted silt and gravel substrates	Not detected. No suitable habitat for this species exists within the BSA or buffer. Historical (1934) CNDDB point approximately 0.7 mile (1.1 kilometers) west of the	Not Expected	Not Expected

TABLE 4.12-5
SPECIAL-STATUS WILDLIFE SPECIES POTENTIALLY OCCURRING WITHIN THE BSA AND/OR THE VICINITY

Common Name Scientific Name	Sensitivity Status[1]	Habitat Requirements	Findings[2]	Potential for Occurrence within the BSA[2]	Potential for Occurrence within a 500-foot Buffer of the BSA[2]
			BSA. Point is presumed extirpated, current population exists 4 miles to the west in Yuha desert.		
Colorado Desert Fringe-toed Lizard (*Uma notata*)	CDFW: Species of Special Concern	Arid habitat with sparse vegetation. A key component of suitable habitat is fine, uncompacted, wind-blown sand. Can occupy barren, shifting dunes but often needs vegetated areas, which are important for forage and escape cover.	Not detected. No suitable habitat for this species exists within the BSA or buffer. The nearest known location is a 2004 CNNDB observation approximately 7 miles (11 kilometers) to the west in the Yuha desert.	Not Expected	Not Expected
Birds					
Cooper's Hawk (*Accipiter cooperii*)	CDFW: Watch List (nesting)	Mature forest, open woodlands, wood edges, river groves. Parks and residential areas.	Not detected. No known locations in the vicinity of the BSA. Does not nest within the Imperial Valley. Migrant and winter visitor. Margin quality winter forage habitat occurs in Greeson Wash due to sparse vegetation. Winter forage habitat within the New River is more abundant and provides moderate potential for the species to occur.	Low (non-breeding)	Moderate (non-breeding)
Sharp-Shinned Hawk (*Accipiter striatus*)	CDFW: Species of Special Concern (nesting)	Breeds in dense forests preferring a closed canopy. Prefers forest habitats but may migrate through open habitats and hunt along forests edges.	Not detected. Does not nest within the Imperial Valley. High potential to forage in BSA during winter or migration due to the presence of agriculture. No known locations in the vicinity of the BSA.	High (non-breeding)	High (non-breeding)
Golden Eagle (*Aquila chrysaetos*)	CDFW: Species of Special Concern; Fully Protected (nesting and wintering) Bald and Golden Eagle Protection Act	Found in open and semi-open areas with native vegetation. Nests on cliffs and steep areas in grassland, chaparral, shrubland, forest, and other vegetated areas.	Not detected. No cliff nesting habitat within 10 miles (16 kilometers) of the BSA. Nearest known nesting habitat is in the east Coyote Mountains approximately 20 miles northwest of BSA. No known locations in the vicinity of the BSA. It is not expected to forage within the BSA or buffer due to the long	Not Expected	Not Expected

TABLE 4.12-5
SPECIAL-STATUS WILDLIFE SPECIES POTENTIALLY OCCURRING WITHIN THE BSA AND/OR THE VICINITY

Common Name Scientific Name	Sensitivity Status[1]	Habitat Requirements	Findings[2]	Potential for Occurrence within the BSA[2]	Potential for Occurrence within a 500-foot Buffer of the BSA[2]
			distance from nesting habitat.		
Short-Eared Owl (*Asio flammeus*)	CDFW: Species of Special Concern (nesting)	Prefers open grasslands, agricultural areas, prairie, meadows, tundra, marshes, savanna, and open woodland. Roosts on the ground or in low trees or bushes. Nest is scraped out depression on the ground.	Not detected. Does not typically nest within the Imperial Valley. No known locations in the vicinity of the BSA. Suitable habitat is present, but this species is a rare winter visitor to the Salton Sea region.	Low (non-breeding)	Low (non-breeding)
Long-Eared Owl (*Asio otus*)	CDFW: Species of Special Concern (nesting)	Roosts in dense vegetation in temperate forests during the day, and hunts in open grassland, shrubland, or open forests during the day. Nests in trees, often coniferous trees.	Not detected. Does not typically nest within the Imperial Valley. Rare winter visitor to the Salton Sea (AECOM 2014e, p. 3-13). No known locations in the vicinity of the BSA. Suitable habitat is present and although a rare winter visitor, it has been historically documented along the New River near Westmorland, California.	Moderate (non-breeding)	Moderate (non-breeding)
Western Burrowing Owl (*Athene cunicularia hypugaea*)	CDFW: Species of Special Concern (burrow sites and some wintering sites)	BUOWs in California are found in habitat with sparse, low-growing vegetation in habitat types such as grassland, desert, agricultural areas, vacant lots, and pastures. Existing burrows is a habitat requirement for this species for nesting and for cover in periods outside the nesting season.	Approximately 148 occupied burrows were detected within the BSA and buffer. Nesting habitat present along roads, canals, and drains. Agriculture fields provide suitable foraging habitat.	Present (breeding)	Present (breeding)
Swainson's Hawk (*Buteo swainsoni*)	CESA: Threatened (Nesting)	Nesting habitat consists of open habitats with trees, either isolated, scattered, or in windrows. Prairies, open land, agricultural fields.	Not detected. No known locations in the vicinity of the BSA. Does not nest within the Imperial Valley and a rare transient/winter visitor. It has low potential to forage in BSA and buffer as well as the Imperial Valley during the spring and fall migration.	Low (non-breeding)	Low (non-breeding)

TABLE 4.12-5
SPECIAL-STATUS WILDLIFE SPECIES POTENTIALLY OCCURRING WITHIN THE BSA AND/OR THE VICINITY

Common Name Scientific Name	Sensitivity Status[1]	Habitat Requirements	Findings[2]	Potential for Occurrence within the BSA[2]	Potential for Occurrence within a 500-foot Buffer of the BSA[2]
Ferruginous Hawk (*Buteo regalis*)	CDFW: Watch List (wintering)	Open country, primarily plains, prairies, badlands, sagebrush, shrubland, desert. Also uses agricultural lands in winter for foraging in California.	Not detected. Nearest known location is a 2003 CNDDB occurrence approximately 10 miles (16 kilometers) northeast of the BSA. Low potential to occur in the BSA and buffer as this species is only a rare winter visitor to Imperial Valley.	Low (non-breeding)	Low (non-breeding)
Mountain Plover (*Charadrius montanus*)	CDFW: Species of Special Concern (wintering)	Winters in California, but does not breed here. Winters primarily in plowed fields, heavily grazed annual grasslands, or burned fields.	Not detected. Does not nest within the Imperial Valley. Imperial Valley supports largest wintering population of mountain plover known anywhere. Approximately 30–38 percent of the world population of the species winters in the Imperial Valley. Flooded agriculture fields within the BSA and buffer provide foraging habitat for this species.	High (non-breeding)	High non-breeding)
Northern Harrier (*Circus cyaneus*)	CDFW: Species of Special Concern (nesting)	Open fields, grasslands, prairies, marshes.	Present. Detected during Project surveys. Common winter visitor to Imperial Valley; non-breeders may remain throughout the summer. Forages and roosts in agricultural areas. Detected during Project surveys and known to occur in the Imperial Valley in spring and summer (AECOM 2014e, p. 3-14). Fallow fields provide possible breeding habitat for this species. Does not nest in the BSA.	Present (possible breeding)	Present (possible breeding)
Sonoran Yellow Warbler (*Dendroica petechia sonorana*)	CDFW: Species of Special Concern (nesting)	Breeds in riparian woodland, also tamarisk. Some breeding pairs have been observed in native and restored cottonwood and willow habitats and sometimes in tamarisk.	Not detected. Winters in Imperial Valley, non-breeding. Recent (2010) known locations occur within mesquite habitat found along Westside Main Canal approximately 2 miles (3 kilometers) west of the BSA. Historical (1921) CNDDB points are also located approximately 5 miles (8 kilometers) away in Calexico, California. Minimal riparian	Low (non-breeding)	High (non-breeding)

TABLE 4.12-5
SPECIAL-STATUS WILDLIFE SPECIES POTENTIALLY OCCURRING WITHIN THE BSA AND/OR THE VICINITY

Common Name Scientific Name	Sensitivity Status[1]	Habitat Requirements	Findings[2]	Potential for Occurrence within the BSA[2]	Potential for Occurrence within a 500-foot Buffer of the BSA[2]
			habitat occurs within the BSA. Winter forage habitat occurs in Greeson Wash and New River. There is a high potential for this species to occur in the New River due to the more abundant winter forage habitat.		
Southwestern Willow Flycatcher (*Empidonax trailii extimus*)	ESA: Endangered; CESA: Endangered (nesting)	Breeds in dense riparian habitat near surface water or saturated soil. Migration flyways include major river corridors and their tributaries such as the Gila River, Rio Grande River, and the lower Colorado River.	Not detected. No known locations in the vicinity of the BSA. One migrant willow flycatcher (unknown subspecies) was detected during surveys. Considered uncommon spring and common fall migrant in Imperial Valley (AECOM 2014e, p. 3-14). The presence of migrant willow flycatcher indicate that this species has high potential to stopover in riparian habitat within the BSA and buffer.	High (non-breeding)	High (non-breeding)
Merlin (*Falco columbarius*)	CDFW: Watch List (wintering)	Breeds in open woodlands wintering in a variety of habitats including more open areas like grasslands and coastlines.	Present. Detected during Project surveys. Rare winter visitor to the Imperial Valley where it is most frequent along the immediate shore of the Salton Sea and along the borders of fallow or weedy fields. Does not nest in the BSA.	Present (non-breeding)	Present (non-breeding)
Prairie Falcon (*Falco mexicanus*)	CDFW: Watch List (nesting)	Frequents open arid lands, expanding to agricultural lands in winter. Nests on bare ledges of cliffs.	Present. Detected during Project surveys. Rare winter visitor to the Imperial Valley where it is most frequently found foraging in agricultural lands. Does not nest in the BSA.	Present (non-breeding)	Present (non-breeding)
American Peregrine Falcon (*Falco peregrinus anatum*)	ESA: Delisted CESA: Delisted CDFW: Fully Protected Species (nesting)	Frequents wetlands, agricultural lands, and other areas that attract large numbers of birds. Nests on bare ledges of cliffs or man-made structures.	Present. Detected during Project surveys. Rare perennial visitor to the Imperial Valley, most frequent along the shore of the Salton Sea in summer and in agricultural lands in winter. Does not nest in the BSA.	Present (non-breeding)	Present (non-breeding)

TABLE 4.12-5
SPECIAL-STATUS WILDLIFE SPECIES POTENTIALLY OCCURRING WITHIN THE BSA AND/OR THE VICINITY

Common Name Scientific Name	Sensitivity Status[1]	Habitat Requirements	Findings[2]	Potential for Occurrence within the BSA[2]	Potential for Occurrence within a 500-foot Buffer of the BSA[2]
Greater Sandhill Crane (*Grus canadensis tabida*)	CESA: Threatened, Fully Protected (nesting and wintering)	Prairies, fields, marshes.	Not detected. Regularly winters in the Imperial Valley in small numbers. Most roosting sites are to the southeast of Brawley, where birds return nightly. No known locations in the vicinity of the BSA. Flooded agriculture fields within the BSA and buffer provide foraging habitat for this species.	High (non-breeding)	High (non-breeding)
Yellow-Breasted Chat (*Icteria virens*)	CDFW: Species of Special Concern (nesting)	Nests in dense riparian thickets and brushy tangles.	Not detected. Summer resident in the Imperial Valley. Rare spring and fall migrant; rare breeder at Salton Sea. Nearest last known breeding locations are from the 1990s along the New River approximately 4 miles (6 kilometers) northwest of the BSA. Dense suitable riparian habitat does not occur within the BSA or buffer and it is not expected to occur.	Not Expected	Not Expected
Least Bittern (*Ixobrychus exilis*)	CDFW: Species of Special Concern (nesting)	Freshwater and brackish marshes and breeds in low areas associated with large rivers, lakes, and estuaries (Gibbs et al. 1992). Less commonly found along irrigation and runoff ditches from agricultural areas.	Not detected. Known to occur in the Imperial Valley. Recent (2010) known locations occur within cattail marsh habitat near the Westside Main Canal approximately 2 miles (3 kilometers) west of the BSA. Moderate potential due to recent location in the vicinity and marginal suitable forage in the drains and canals in BSA. New River provides suitable breeding habitat.	Moderate (non-breeding)	Moderate (breeding)
Loggerhead Shrike (*Lanius ludovicianus*)	CDFW: Species of Special Concern (nesting)	Found in open areas; year-round resident within this area. Nests within dense bushes and trees.	Present. Detected during Project surveys. Fairly common breeding resident in Imperial Valley, more numerous in winter. Forages in desert scrub and agricultural fields. Any trees/shrubs present provide breeding habitat.	Present (breeding)	Present (breeding)

TABLE 4.12-5
SPECIAL-STATUS WILDLIFE SPECIES POTENTIALLY OCCURRING WITHIN THE BSA AND/OR THE VICINITY

Common Name Scientific Name	Sensitivity Status[1]	Habitat Requirements	Findings[2]	Potential for Occurrence within the BSA[2]	Potential for Occurrence within a 500-foot Buffer of the BSA[2]
California Black Rail (*Laterallus jamaicensis coturniculus*)	CESA: Threatened, Fully Protected	Inhabits tidal marshes and freshwater marshes in the western U.S. and Mexico. Inhabits the drier areas of wetlands; characterized by shallow and stable water levels along gently sloping shorelines with vegetation dominated by fine-stemmed bulrush (*Scirpus* spp.), grasses, or dense stands of three-square bulrush.	Not detected. Known to occur in the Imperial Valley. Nearest known location is a 2001 CNDDB occurrence approximately 7.5 miles (12 kilometers) northwest of the BSA along the New River. This species is also known to historically occur along the All American Canal near Calexico, California, approximately 5 miles (8 kilometers) to the east of the BSA. Suitable marsh habitat was not observed within the BSA. New River contains marginal quality marsh habitat in buffer.	Not Expected	Low (breeding)
Gila Woodpecker (*Melanerpes uropygialis*)	CESA: Endangered	In Imperial Valley, known to nest in palm (especially Mexican fan palm), eucalyptus, Fremont cottonwoods, figs, Athel tamarisk, sycamores, and mulberry trees in urban areas.	Not detected. No suitable breeding habitat within the BSA. Buffer contains palms and eucalyptus that are suitable for nesting. This species is known to breed at Sunbeam Lake approximately 5 miles (8 kilometers) north of the BSA. Known to be a locally common breeding resident in the Imperial Valley, particularly at Brawley and El Centro. Sometimes will nest on utility poles.	Not Expected	Moderate (breeding)
White-Faced Ibis (*Plegadis chihi*)	CDFW: Watch List (Nesting Colony)	Nests mainly in tall stands of cattail and emergent snags in wetlands. Forages in agricultural lands, primarily in flooded fields.	Present. Detected during Project surveys. Common perennial visitor to the Imperial Valley with largest numbers present in winter. Known to breed locally in the Imperial Valley at Finney and Ramer Lakes and near the shore of the Salton Sea. Does not nest in the BSA.	Present (Non-breeding)	Present (Non-breeding)
Vermilion Flycatcher (*Pyrocephalus rubinus*)	CDFW: Species of Special Concern (nesting)	Open farmlands, grasslands with shrubs, often near water. Will use cottonwood-willow woodland, oaks, mesquites, and sycamores, but will also	Not detected. A historical (1909) CNDDB location occurs approximately 3 miles (5 kilometers) to the north of the BSA. Although suitable habitat occurs within the BSA and buffer, this species is	Low (breeding)	Low (breeding)

TABLE 4.12-5
SPECIAL-STATUS WILDLIFE SPECIES POTENTIALLY OCCURRING WITHIN THE BSA AND/OR THE VICINITY

Common Name Scientific Name	Sensitivity Status[1]	Habitat Requirements	Findings[2]	Potential for Occurrence within the BSA[2]	Potential for Occurrence within a 500-foot Buffer of the BSA[2]
		inhabit golf courses, residential areas, and parks, with surface water and pastureland frequently nearby. Also breeds in mesquite bosques where honey mesquite is the dominant tree species.	known to be a rare winter visitor and rare breeder in the Imperial Valley. Thus, this species has low potential to occur within the BSA and buffer.		
Yuma Clapper Rail (*Rallus longirostris yumanensis*)	ESA: Endangered; CESA: Threatened, CDFW: Fully Protected	Found in freshwater marshes habitats dominated by emergent plants, including southern cattail, and bullwhip/California bulrush, three-square bulrush and sedges (Todd 1986) in the southwestern U.S. and northern Mexico. Also known to breed in willows, arrow weed, and salt cedar-dominated habitat.	Not detected. Marginal marsh habitat in CUPs 13-0047, 13-0046 and 13-0045. Marginal marsh habitat also occurs in the New River in the buffer. The nearest known location is a 2007 CNDDB occurrence approximately 4.5 miles (7 kilometers) northwest of the BSA in Fig Lagoon along the New River. Significant populations are found in marshes at the south end of the Salton Sea in the Imperial Valley.	Moderate (breeding)	Moderate (breeding)
Crissal Thrasher (*Toxostoma crissale*)	CDFW: Species of Special Concern	Found in arid areas associated with desert washes, riparian brush, and mesquite thickets (dense, low scrubby vegetation) at lower elevations and dense scrub in arroyos at higher elevations. Prefers desert riparian and wash habitats, typically only if sufficient mesquite and ground cover, sometimes found in ironwood.	Not detected. The nearest known location is a 2010 occurrence in mesquite habitat found along Westside Main Canal approximately 2 miles (3 kilometers) west of the BSA (AECOM 2014e, p. 3-16). Uncommon breeding resident in Imperial Valley Salton Sink. No suitable habitat is present within the BSA. Suitable habitat is present in the New River within buffer.	Not Expected	Moderate (breeding)
Le Conte's thrasher (*Toxostoma lecontei*)	CDFW: Species of Special Concern	Desert resident; primarily of open desert wash, desert scrub, alkali desert scrub, and desert succulent scrub habitats	Not detected. Nearest known location is a historic (1933) CNDDB point approximately 10 miles (16 kilometers) northwest of the BSA near Plaster City, California. Casual post-breeding visitor to Imperial Valley Salton Sink. No suitable habitat is	Not Expected	Not Expected

TABLE 4.12-5
SPECIAL-STATUS WILDLIFE SPECIES POTENTIALLY OCCURRING WITHIN THE BSA AND/OR THE VICINITY

Common Name Scientific Name	Sensitivity Status[1]	Habitat Requirements	Findings[2]	Potential for Occurrence within the BSA[2]	Potential for Occurrence within a 500-foot Buffer of the BSA[2]
			present within the BSA or buffer.		
Least Bell's Vireo (*Vireo bellii pusillus*)	ESA: Threatened; CESA: Endangered (nesting)	Found in riparian woodland habitats. Riparian vegetation may include cottonwoods; oak woodlands with a dense understory of species such as willow, mulefat, and California wild rose; and in desert areas with arrow weed and wild grape as dominant species.	Not detected. No suitable habitat is present within the BSA or buffer. This species rarely occurs in the Imperial Valley. No known locations in the vicinity of the BSA.	Not Expected	Not Expected
Yellow-Headed Blackbird (*Xanthocephalus xanthocephalus*)	CDFW: Species of Special Concern (nesting)	Requires freshwater marshes or ponds with dense cattail for breeding; generally avoids ditches or plants other than cattail; forages in agricultural fields, often partly flooded ones.	Present. Detected during Project surveys. Suitable foraging habitat present in BSA. Nesting habitat is located in the New River within the buffer. Fairly common breeder in the Salton Sea, confined to marshes of Salton Sink.	Present (non-breeding)	Present (breeding)
Mammals					
Pallid Bat (*Antrozous pallidus*)	CDFW: Species of Special Concern	Arid and semi-arid locations; roosts in caves, abandoned mines, desert outcrops; gregarious.	Not detected. No suitable roosting or nesting habitat present within the BSA or buffer. No known locations in the vicinity of the BSA.	Not Expected	Not Expected
Western Mastiff Bat (*Eumops perotis californicus*)	CDFW: Species of Special Concern	Tends to be colonial; roosts in high cliffs with long drops (at least 20 feet [6 meters] but prefers up to 100 feet [30 meters]); forages long distances from roost site (greater than 60 miles [97 kilometers] is common); low-density populations, locally common; insectivorous; roost sites tend to be on public lands but species can forage in agricultural areas.	Not detected. No suitable roosting or nesting habitat present within the BSA or buffer. Agriculture fields provide moderate quality foraging habitat. The nearest known location is a 1996 CNDDB occurrence located approximately 5 miles (8 kilometers) away in Calexico, California.	Moderate (non-breeding)	Moderate (non-breeding)
Western Yellow Bat (*Lasiurus*	CDFW: Species of Special	Highly adaptable species that occupies a wide range of habitats	Not detected. Palm trees within the BSA and buffer provide moderate quality	Moderate (breeding)	Moderate (breeding)

TABLE 4.12-5
SPECIAL-STATUS WILDLIFE SPECIES POTENTIALLY OCCURRING WITHIN THE BSA AND/OR THE VICINITY

Common Name Scientific Name	Sensitivity Status[1]	Habitat Requirements	Findings[2]	Potential for Occurrence within the BSA[2]	Potential for Occurrence within a 500-foot Buffer of the BSA[2]
xanthinus)	Concern	from arid areas to tropical forests. This bat can be found in woodlands, pasture or croplands, savannas, and residential areas. Most often found in trees, prefers to roost in thatch of palm trees but can also be found in other trees (such as coconut, mango, and banana). Roosting is usually solitary. This bat does not hibernate.	roost sites. The nearest CNDDB occurrence a historical point (1977) located approximately 2 miles (3 kilometers) north of the BSA. More recent (1999) locations are known from the vicinity of El Centro, California, approximately 5 miles (8 kilometers) to the northeast.		
Pocketed Free-Tailed Bat (*Nyctinomops femorosaccus*)	CDFW: Species of Special Concern	Desert habitat; roosts in rock crevices, but may not need high cliffs for roosting; colonial.	Not detected. No suitable roosting habitat within BSA or buffer. Agriculture fields provide moderate quality foraging habitat. The nearest known location is a 1996 CNDDB occurrence located approximately 5 miles (8 kilometers) away in Calexico, California.	Moderate (non-breeding)	Moderate (non-breeding)
Big Free-Tailed Bat (*Nyctinomops macrotis*)	CDFW: Species of Special Concern	Roosts in rocky tallis slope, cliff-like habitat, railroad tunnels; typically roosts in rocks, sometimes in buildings or holes in trees; gregarious.	Not detected. No suitable habitat occurs within the BSA or buffer. Nearest known location is 1987 CNDDB occurrence from the vicinity of El Centro, California, approximately 5 miles (8 kilometers) to the northeast.	Not expected	Not expected
Townsend's big-eared bat (*Corynorhinus townsendii*)	CDFW: Species of Special Concern	Occurs throughout California in a wide variety of habitats, most commonly in mesic sites. Extremely sensitive to human disturbance.	Not detected. Nearest known locations are along Colorado river and in Jacumba mountains over 30 miles (48 kilometers) away. Suitable foragina habitat occurs within the BSA or buffer; however, this species is sensitive to disturbance from agriculture. Thus, the species is not expected to occur within the BSA or buffer.	Not expected	Not expected
Yuma Mountain Lion (*Puma concolor browni*)	CDFW: Species of Special Concern	Uses a variety of habitats including desert scrub, chaparral, swamps, and forests but avoids agricultural	Not detected. Surveys for the 8minutenergy projects detected mountain lion scat approximately 6 miles (10 kilometers) northwest of the	Not expected	Not expected

TABLE 4.12-5
SPECIAL-STATUS WILDLIFE SPECIES POTENTIALLY OCCURRING WITHIN THE BSA AND/OR THE VICINITY

Common Name Scientific Name	Sensitivity Status[1]	Habitat Requirements	Findings[2]	Potential for Occurrence within the BSA[2]	Potential for Occurrence within a 500-foot Buffer of the BSA[2]
		areas, flat shrubless deserts, and other areas that lack topographic or vegetative cover.	BSA. The BSA does not contain suitable habitat and/or cover for this species.		
Yuma Hispid Cotton Rat (*Sigmodon hispidus eremicus*)	CDFW: Species of Special Concern	Most common in grass-dominated habitat and grass height and density have been documented as important habitat components. Agricultural crops such as cotton or corn are suitable.	Not detected. Suitable crops may be present depending on crop rotations. The closest known occurrence in the CNDDB is a location from 2008 within the Westside Main Canal approximately 3 miles (5 kilometers) to the west of the BSA (CDFW 2013).	Low	Moderate
American Badger (*Taxidea taxus*)	CDFW: Species of Special Concern	Coastal sage scrub, mixed chaparral, grassland, oak woodland, chamise chaparral, mixed conifer, pinyon-juniper, desert scrub, desert wash, montane meadow, open areas, and sandy soils.	A burrow exhibiting signs of predation by a badger was observed adjacent to the BSA within the buffer. The closest known occurrence in the CNDDB is a historical location from 1911 approximately 2.5 miles (4 kilometers) to the north of the BSA.	High	Present
Desert Kit Fox (*Vulpes macrotis arsipus*)	Calif. Code of Regulations: Protected Furbearing Mammal	Suitable habitat for this fossorial mammal consists of arid open areas, shrub grassland, and desert ecosystems. Desert kit foxes may be found in agricultural areas in Imperial County, with burrows mainly found at the edges of the active agriculture fields.	No desert kit fox or sign (burrows or scat) was observed during surveys. There is suitable habitat for this species within the BSA and buffer, but it is not adjacent to unfragmented desert habitat. The closest known location of this species is approximately 7.5 miles (12 kilometers) to the northwest of the BSA in desert habitat.	Low	Low
Fish					
Razorback Sucker (*Xyrauchen texanus*)	ESA: Endangered; CESA: Endangered	Known to historically occur in the major rivers of the Colorado River Basin. Individuals from this species are believed to inhabit the canal system in Imperial County, but the inhabitants are believed to be non-reproductive due to no recruitment	Not detected. Known to occur in the All American Canal, but not believed to be reproductive. Not known to occur within the small irrigation drains and canals present within the BSA or buffer.	Not expected (breeding)	Not expected (breeding)

TABLE 4.12-5
SPECIAL-STATUS WILDLIFE SPECIES POTENTIALLY OCCURRING WITHIN THE BSA AND/OR THE VICINITY

Common Name Scientific Name	Sensitivity Status[1]	Habitat Requirements	Findings[2]	Potential for Occurrence within the BSA[2]	Potential for Occurrence within a 500-foot Buffer of the BSA[2]
		of wild-spawned fish, likely due to predation by introduced fish.			
[1] Sensitivity Status Key Federal Endangered Species Act (ESA) State California Department of Fish and Game (CDFW) California Endangered Species Act (CESA) [2] Species Potential for Occurrence Not Expected – Species not detected during Project surveys and not expected to occur.			**Low Potential** – Species not detected during Project surveys, but has low potential to occur because suitable habitat present, but of marginal quality **Moderate Potential** – Species not detected during Project surveys, but has moderate potential to occur because suitable habitat present **High Potential** – Species not detected during Project surveys, but has high potential to occur because suitable habitat present, and species known to occur within the vicinity. Present – Species detected during Project surveys		

Source: AECOM 2014e, pp. 3-11 through 3-15.

With the exception of BUOW, no special-status wildlife species were detected within the Mount Signal Solar Farm Project Gen-tie line corridor (AECOM 2014e, p. 3-11). The Mount Signal Solar Farm Project has completed construction of its Gen-Tie line and its corridor is disturbed from activities and access roads. IID canals and/or drains and agriculture fields remain in the areas adjacent to the corridor. In addition, the Mount Signal Solar Farm Project Gen-Tie line corridor is nearly completely enclosed by solar panel fields or directly adjacent to solar panel fields operating or under construction. The potential for BUOW to occur within the Mount Signal Solar Farm Project Gen-Tie line corridor is discussed below under Impact 4.12.6. The potential for other special-status species to occur in this corridor is not discussed further in this section (AECOM 2014e, p. 3-11). However, foraging habitat for other special status species within the Mount Signal Solar Farm Project Gen-Tie line corridor is discussed below. **Figure 4.12-4** and **Figure 4.12-5** depicts Special status wildlife species identified within the BSA during focused BUOW field surveys.

Federally-Listed Wildlife Species

Federally-listed wildlife species include those species listed or proposed for listing (including candidate species) as threatened or endangered per Section 4 of the ESA. Based on site-specific surveys conducted by AECOM and literature review, including a CNDDB records search, it was determined that one federally listed wildlife species, the southwestern willow flycatcher (*Empidonax traillii extimus*), has high potential to occur as a migrant within the BSA, but is not expected to breed within the BSA. No other federally listed wildlife species are expected to occur within the BSA (AECOM 2014e, p. 3-11).

Southwestern Willow Flycatcher

Species Background

Southwestern willow flycatcher, a subspecies of willow flycatcher (*Empidonax trailli*), was listed as endangered on February 27, 1995 (60 Federal Register [FR] 10695–10715). The southwestern willow flycatcher (one of three subspecies of willow flycatcher occurring in California) is federally listed as endangered under the ESA. Final critical habitat was designated on October 19, 2005 (70 FR 60886–61009), although revised critical habitat for the species is proposed (76 FR 50542–50629). Critical habitat for this species does not occur within the BSA or immediate vicinity. A recovery plan for southwestern willow flycatcher was published in August 2002 (AECOM 2014e, p. 3-12).

Southwestern willow flycatcher nests in dense patches of riparian forest interspersed with small open areas and open water. Many plant species are used for nesting, including willow (*Salix* spp.), cottonwood (*Populus* spp.), coyote brush (*Baccharis* spp.), and tamarisk (*Tamarix ramosissima*), but nest

sites must have dense canopies reaching all or much of the way to the ground. The majority of nests are in willows with nest height varying from 14 inches to 62 feet (36 centimeters to 19 meters). Southwestern willow flycatchers forage by perching at the top or edge of the canopy and either catching insects in the air or gleaning them from foliage (AECOM 2014e, p. 3-12).

Southwestern willow flycatcher winters in South and Central America, arriving in North American breeding grounds as early as May. Depending on individual characteristics of the site, they may not leave breeding sites until September. Several subspecies of willow flycatcher migrate through southern California, with the most common migrant being little willow flycatcher (*E. t. brewsteri*). The little willow flycatcher is a state endangered species that breeds in northern California. It is virtually impossible to differentiate between subspecies of willow flycatcher during migration (AECOM 2014e, p. 3-12).

In California, southwestern willow flycatchers breed from the U.S./Mexico border north to Independence in the Owens Valley, the South Fork Kern River, and the Santa Ynez River in Santa Barbara County (Craig and Williams 1998). Breeding populations in southern California currently remain small, isolated, and disjunct (AECOM 2014e, p. 3-12).

Habitat and Occurrence in the BSA and Vicinity

A non-vocal flycatcher exhibiting characteristics consistent with those of willow flycatcher was seen perching and foraging on May 7, 2010, within an IID drain ROW in the BSA, during a focused protocol BUOW survey (**Figure 4.12-5**). It is unknown if this non-vocal flycatcher was a southwestern willow flycatcher. Willow flycatcher subspecies cannot be identified in the field without vocalization. However, all subspecies of willow flycatcher are state-listed as endangered under the CESA. No willow flycatcher breeding habitat occurs within the BSA or the buffer; thus the unknown subspecies detected during surveys was likely a migrant passing through the BSA. Additionally, there is no evidence that the

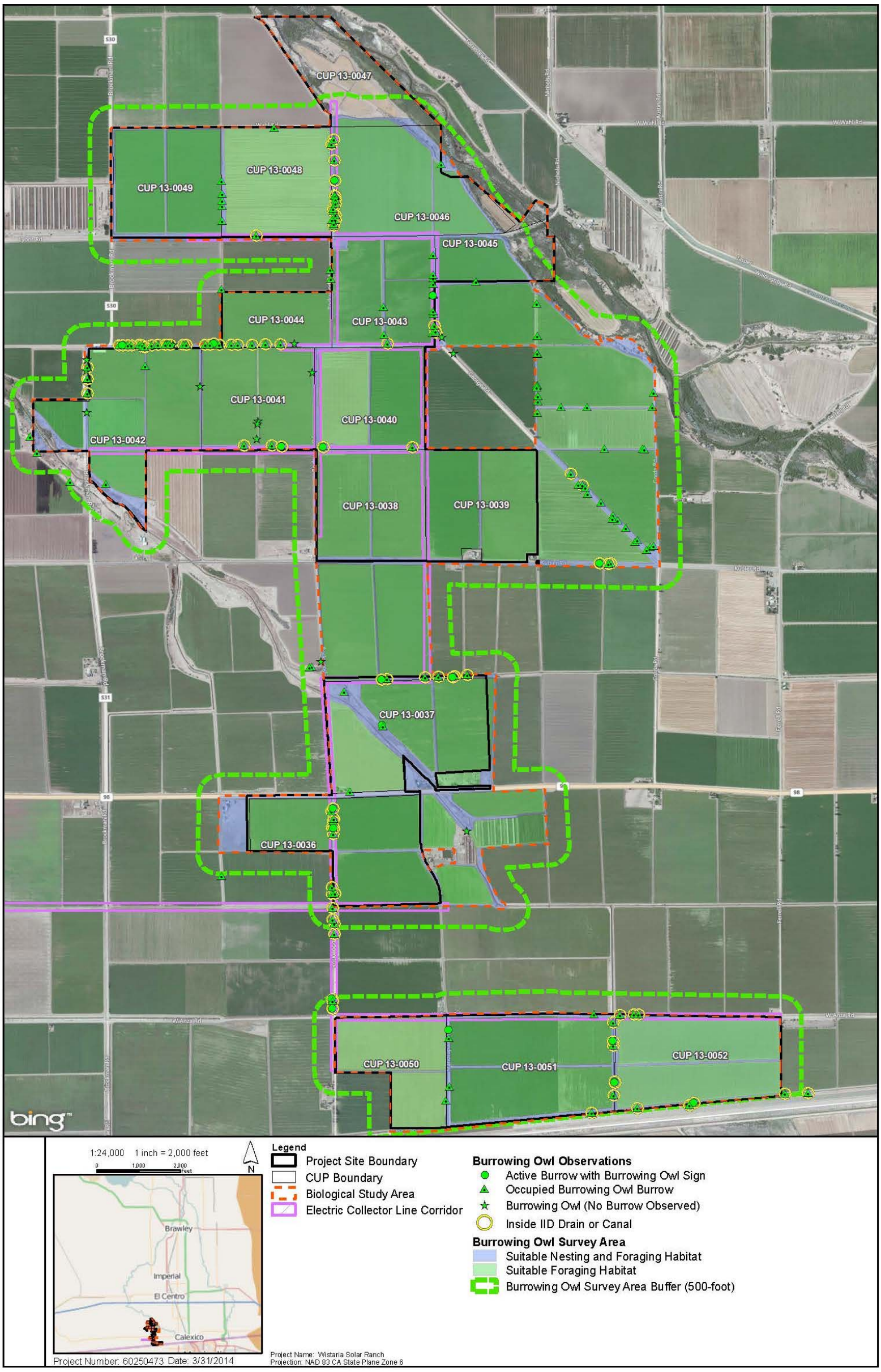
southwestern willow flycatcher has ever nested in the Imperial Valley. Suitable willow flycatcher migration stopover habitat, including drains and canals, arrow weed scrub and tamarisk scrub, occurs within some IID ROWS and along Greeson Wash and the New River throughout the 32 Parcel/17 CUP Solar Energy Center footprint (AECOM 2014e, p. 3-12).

Yuma Clapper Rail

Species Background

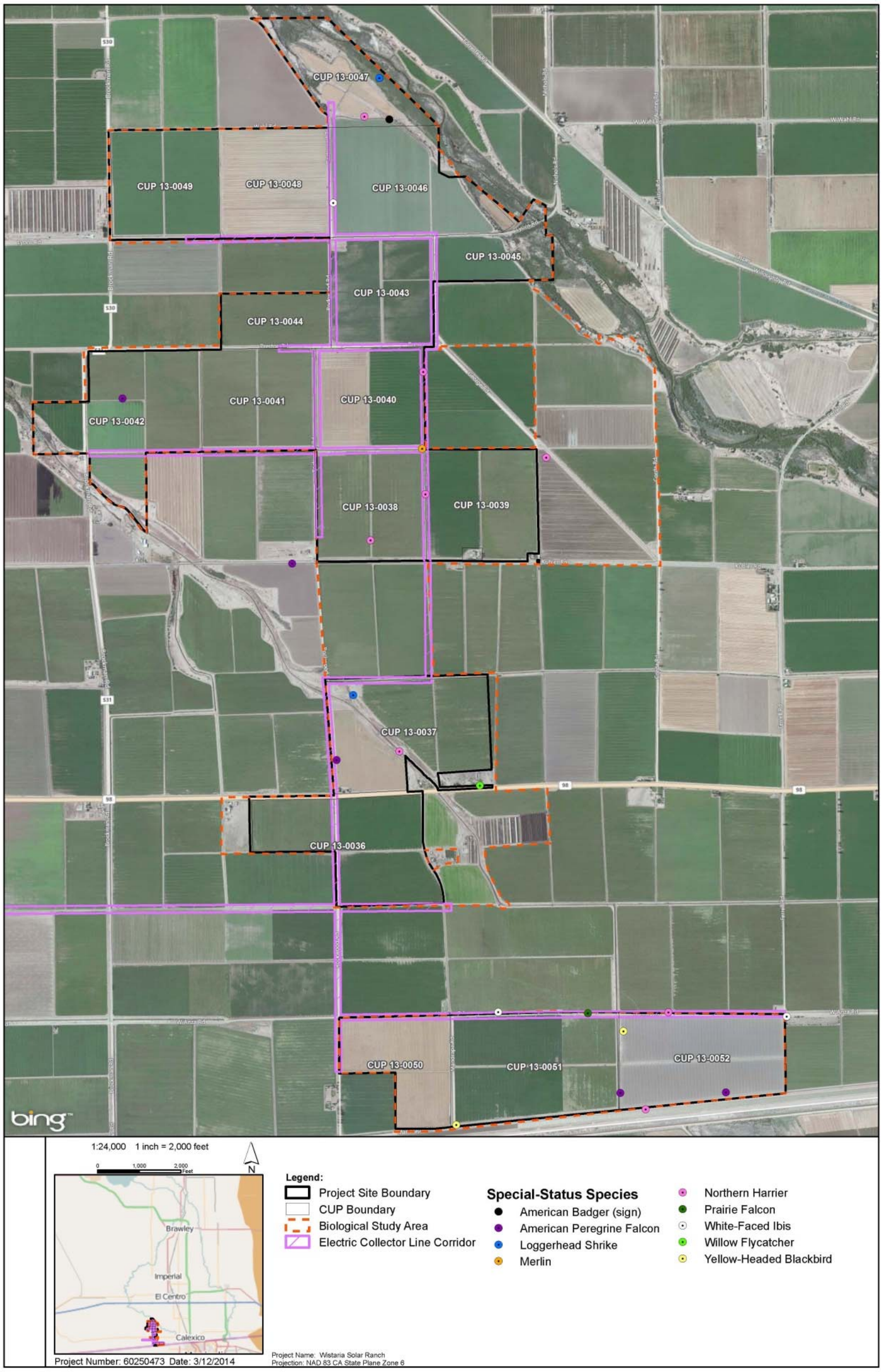
Yuma clapper rail (*Rallus longirostris yumanensis*) was listed as endangered by the ESA on March 11, 1967 (32 Fed. Reg. 4001). It is also listed as threatened under the CESA, and is fully protected by CDFW. The Yuma clapper rail is one of three clapper rail subspecies listed as endangered by the ESA. No critical habitat is designated for the Yuma clapper rail. A recovery plan for Yuma clapper rail was originally published in 1983 and draft revised version was released in February 2010 (AECOM 2014e, p. 3-12 & 3-21).

The Yuma clapper rail is unique among the clapper rails in being the only one that occupies fresh-water marshes during the breeding seasons yet largely winters in brackish marshes south of the United States (AECOM 2014e, p. 3-21). In California, Yuma clapper rail is found along the lower Colorado River and at the Salton Sea (AECOM 2014e, p. 3-21). This subspecies breeds in heavily-vegetated fresh-water marshes with cover ranging from moderately dense stands of cattail (*Typha domingensis*) and bulrush (*Scirpus* spp.) with a mix of riparian tree and shrub species (*Salix exigua*, *S. gooddingii*, *Tamarix* sp., *Tessaria serica*, and *Baccaris* sp.) to dense, near monotypic stands of *Typha* (AECOM 2014e, p. 3-21). This subspecies is partially migratory, with many birds wintering in brackish marshes along the Gulf of California (AECOM 2014e, p. 3-21). Some remain on their breeding grounds throughout the year; for example, the Salton Sea (south) Christmas Bird Count frequently records this species in the fresh-water marshes in and around the Imperial Wildlife Area (Wister Unit).



Source: AECOM 2014.

FIGURE 4.12-4
BURROWING OWL OBSERVATIONS



Source: AECOM 2014.

FIGURE 4.12-5
OTHER SPECIAL STATUS WILDLIFE SPECIES OBSERVATIONS

Habitat and Occurrence in the BSA and Vicinity

This species was not detected during biological surveys; however, focused Yuma clapper rail surveys were not conducted for the Project. The only potentially suitable marsh habitat for Yuma clapper rail within the BSA occurs along the New River in the northeast corner (associated with CUP 13-0047, 13-0046, and 13-0045). CUP-0047 was assessed via desktop analysis as it was added to the BSA after completion of focused biological surveys. There are no known locations of this species in the BSA and buffer. The nearest known location is a 2007 CNDDB occurrence approximately 4.5 miles (7 kilometers) northwest of the BSA in Fig Lagoon along the New River (AECOM 2014e, p. 3-21). Significant populations are found in marshes at the south end of the Salton Sea (AECOM 2014e, p. 3-21).

Small stands of cattail within the irrigation drains and canals are not dense enough to support Yuma clapper rail. Additionally, irrigation drains and canals are not protected from frequent human disturbance. Some cattail marsh habitat is present within the arrow weed scrub and tamarisk scrub along the edge of the New River, but it forms a very narrow border to the open water of the New River and is of marginal suitability for Yuma clapper rail. This habitat is generally outside and immediately adjacent to the eastern side of the BSA. Portions of the New River occur in the northeast corner of the BSA and intersect with CUPs 13-0047, 13-0046, and 13-0045. Given the connectivity to known occurrences in Fig Lagoon along the New River, it is considered to have a moderate potential to occur near mapped open water along the New River adjacent to the BSA and/or within the BSA.

State-listed Wildlife Species

State-listed wildlife species include those species listed or candidates for listing as threatened or endangered under the CESA. The willow flycatcher was the only species listed under the CESA within the BS. As discussed above, the observation was a non-vocal willow flycatcher and thus the subspecies could not be determined in the field. This observed individual was likely a migrant because no suitable breeding habitat occurs within the BSA or buffer (AECOM 2014e, p. 3-21).

Three other species listed under the CESA, Yuma clapper rail (*Rallus longirostris yumanensis*), Swainson's hawk (*Buteo swainsonii*) and greater sandhill crane (*Grus canadensis tabida*), have potential to occur within the BSA or buffer. Yuma clapper rail is discussed in above in the section above entitled "Federally-listed Wildlife Species." Swainson's hawk, a California state threatened species, does not breed in, and is a rare visitor to, the Imperial Valley. There is low potential for this species to occur in the BSA and it is not addressed further in this section. The greater sandhill crane, a California state threatened species, has a high potential to winter in the BSA and is discussed in detail below (AECOM 2014e, p. 3-22).

Greater Sandhill Crane

Species Background

The greater sandhill crane is a CDFW fully protected, state-listed threatened species within its breeding and wintering ranges. It roosts along river channels, on alluvial islands of braided rivers, and in natural basin wetlands, often feeding and resting in fields and agricultural lands. This species breeds in open grasslands, marshes, marshy edges of lakes, and ponds, and along river banks where it nests on open tundra or in the shallow waters of large marshes, bogs, fens, or wet forest meadows. The greater sandhill crane breeds throughout the southern regions of central and western Canada and the northern half of the central and western United States. The Great Lakes population winters in Florida; the rocky mountain population along the Rio Grande in New Mexico and into northern Chihuahua, Mexico; and the westernmost breeding populations in California, including the Central Valley and Imperial Valley (AECOM 2014e, p. 3-22).

Habitat and Occurrence in the BSA and Vicinity

This species was not detected during biological surveys; however, wintering avian surveys were not conducted for the Project. There are no known locations of this species in the vicinity of the BSA. The presence of agriculture fields within the BSA and buffer provide suitable wintering and foraging habitat for this species. Greater sandhill crane regularly winters in the Imperial Valley in small numbers. Most roosting sites are to the southeast of Brawley, where birds return nightly. Given that this species is known to occur within the Imperial Valley, it is considered to have a high potential to occur within the BSA during the winter (AECOM 2014e, p. 3-22).

Non-listed Special-Status Wildlife Species

Non-listed special-status wildlife species include those species not protected under the ESA or CESA but identified by CDFW as a Species of Special Concern (SSC), fully protected, or watch list species or covered as a state protected furbearing mammal. Nine non-listed special-status wildlife species were detected within the BSA: BUOW, northern harrier, merlin, prairie falcon, peregrine falcon, loggerhead shrike, white-faced ibis, yellow-headed blackbird, and American badger (**Figures 4.12-4 and 4.12-5**). No other non-listed special-status wildlife species were detected (AECOM 2014e, p. 3-22).

Sensitive avian species identified by CDFW are also identified by their season of concern. For resident species, the season of concern is year-round, but for long distance migrants the season of concern is either wintering or nesting. During Project surveys, northern harrier, prairie falcon, peregrine falcon, and white-face ibis were detected in the BSA; however, the season of concern for northern harrier, prairie falcon, peregrine falcon, and white-face ibis is nesting (i.e., breeding) (**Table 4.12-5**). No suitable breeding habitat occurs within the BSA nor are they known to nest in the Imperial Valley. There is only potential for white-faced ibis to winter in the Mount Signal Solar Farm Gen-Tie line corridor, and project effects to the species are addressed generally in the discussion of potential impacts to migratory birds. All other remaining avian species evaluated in **Table 4.12-5** are not expected to occur in the BSA during their season of concern or have a low potential to occur in their season of concern (AECOM 2014e, p. 3-23). These species are not discussed further in this section.

Both merlin and mountain plover (*Charadrius montanus*) have a high potential to occur within the BSA during winter, which is these species season of concern (**Table 4.12-5**). In addition, BUOW, loggerhead shrike, and yellow-headed blackbird were detected within the BSA during their season of concern (**Table 4.12-5**), As such, these are the only avian species discussed in further detail in this section (AECOM 2014e, p. 3-23).

American badger and bats have moderate potential to occur in the BSA and are also discussed in detail below. Mammals not expected to occur in the BSA, or mammals with low potential to occur in the BSA, are not discussed further in this section (AECOM 2014e, p. 3-23).

Western Burrowing Owl

Species Background

BUOW is designated as an SSC by CDFW due to habitat loss and degradation from urbanization. Suitable BUOW habitat consists of annual and perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Suitable BUOW habitat may also include trees and shrubs if the canopy covers less than 30 percent of the ground surface. Burrows are the essential component of BUOW habitat, and both natural and artificial burrows provide protection, shelter, and nests for this species. BUOW typically use burrows made by mammals such as kit foxes, ground squirrels, or badgers, but also may use human-made structures, such as cement culverts; cement, asphalt, or wood debris piles; or openings beneath cement or asphalt pavement (AECOM 2014e, p. 3-23).

The breeding season for BUOW in California is defined as February 1 through August 31. Geographic region and/or annual climatic conditions may cause some variation in the start or length of the breeding season (AECOM 2014e, p. 3-23). BUOW in California are generally non-migratory and most abundant in the Central and Imperial Valleys, primarily in agricultural areas. Although the BUOW population in the southern desert region is primarily resident (i.e., present year-round), some migration from northern populations to the southern desert region occurs during winter. Seasonal population density seems to correlate with prey availability (AECOM 2014e, p. 3-23).

The Imperial Valley has approximately 70 percent of the California BUOW population, which is located primarily in active agricultural areas associated with human activities. In the Imperial Valley, BUOW have become tolerant of human activity due to the ongoing agricultural activities present within the valley. A large majority of occupied BUOW burrows are located adjacent to permanent water conveyance structures, such as IID canals/drains and private farmer field ditches (AECOM 2014e, p. 3-23).

The agroecosystem in the Imperial Valley supports a substantial orthoptera (i.e., grasshoppers and crickets) population on which BUOW forage in the Imperial Valley. Male BUOW nocturnally forage primarily within 1,969 feet (600 meters) of their nest. Approximately 40 percent of foraging occurs within 0 to 656 feet (0 to 200 meters), 20 percent of foraging occurs within 656 to 1,312 feet (200 to 400 meters), and 20 percent of foraging occurs within 1,312 to 1,969 feet (400 to 600 meters) of a nest. Nocturnal home ranges of male BUOW in the Imperial Valley are approximately 280 acres (113 hectares) around the nest site using a Minimum Convex Polygon estimator, and 111 acres (46 hectares) using a 95 percent Fixed Kernel Home Range estimator. Diurnal movements are limited to within 360 feet (110 meters) of the nest site and average diurnal home range size is approximately 0.8 acre (0.3 hectare) in the Imperial Valley (AECOM 2014e, p. 3-23).

Habitat and Occurrence in the BSA and Vicinity

Suitable breeding habitat (i.e., suitable for burrows) is present within the areas adjacent to canals, drains, and dirt roads (**Figure 4.12-4**). Suitable BUOW burrows commonly consist of round-tailed ground squirrel (*Xerospermophilus tereticaudus*) burrows and/or burrows created by water erosion associated with use of the irrigation canals and drains. The majority of the BSA and buffer contain suitable BUOW foraging habitat which includes all vegetation types except developed habitat (approximately 3,249 acres [1,315 hectares]). Agricultural areas and the habitat along and within the canals/drains are likely the primary foraging areas. As noted previously, the agroecosystem in the Imperial Valley supports a substantial orthoptera (i.e., grasshoppers and crickets) population on which BUOW forage. Orthoptera remains were noted during examination of several BUOW pellets within the BSA. In addition, dead bird, small mammal, and crayfish (*Procambarus clarkii*) remains were observed at the entrances of several burrows (AECOM 2014e, p. 3-24).

Each survey provided a snapshot of BUOW activity in the BSA for a specific survey number within the approximately 11-week time period when the four surveys were conducted (**Table 4.12-6**). The number of BUOW individuals documented at occupied burrows varied between each survey (**Table 4.12-7**). During the daylight survey periods, most BUOW were present at burrow entrances, on perches adjacent to burrows, or peeking out from within burrows. Upon approach, BUOW would produce alarm calls and would either retreat to burrows, fly to satellite burrows, or fly into agricultural fields and hide within high vegetation. Very rarely was foraging observed and when observed, it was nearly always after sunset when surveys had been discontinued. Additionally, BUOW were sometimes detected at locations other than at burrows and individuals could not be associated with any particular burrow (**Table 4.12-8**). These individuals may have been passing through the BSA or were out foraging in areas far from their burrow (AECOM 2014e, p. 3-24).

TABLE 4.12-6
SURVEY STATUS OF BURROWS DETECTED IN THE BSA AND 500-FOOT BUFFER OF THE BSA[1]

Survey Number	Occupied	Active	Inactive	Total[2]
1	79	39	101	219
2	94	53	168	325
3	83	43	236	362
4	106	37	233	376

Source: AECOM 2014e, p. 3-25.

[1] Survey status refers to burrows that were classified as follows during a given survey visit:

- Occupied – presence of owls directly at the burrow • Active – presence of fresh or recent sign
- Inactive – absence of fresh or recent sign or a burrow previously documented as suitable was documented as no longer suitable during a subsequent protocol survey due to erosion, a natural burrow collapse, or inadvertent damage from anthropogenic activities.

[2] Ten burrows recorded during survey one could not be found during survey two; however, the status of these burrows was determined to be inactive during survey three.

TABLE 4.12-7
BUOW OBSERVATIONS AT BURROWS IN THE BSA AND 500-FOOT BUFFER OF THE BSA

Survey Number	Adults			Number of Juveniles	Number of Unknown Age	Total[2]
	Number of Singles	Number of Pairs	Number of Adult (pairs and individuals)[1]			
1	29	50	129	0	0	129
2	75	19	113	0	0	113
3	61	22	105	1	0	106
4	51	55	161	52	1	214

Source: AECOM 2014e, p. 3-25.

[1] The number of adult owls is equal to the number of pairs of owls observed multiplied by two plus the number of single adult owls.

[2] The total is the number of adult owls, juveniles, and unknown summed together.

TABLE 4.12-8
NUMBER OF BUOW OBSERVATIONS NOT AT BURROWS IN THE BSA AND 500-FOOT BUFFER OF THE BSA[1]

Survey Number	Number of Adults	Number of Juveniles
1	9	0
2	22	0
3	21	0
4	14	1

Source: AECOM 2014e, p. 3-26.

[1] BUOW observations not at burrows are detections of individual owls that could not be associated with a burrow.

TABLE 4.12-9
FINAL STATUS OF BURROWS DETECTED IN THE BSA AND 500-FOOT BUFFER OF THE BSA1

Survey Number	Occupied	Active	Inactive	Total
1	81	37	101	219
2	127	35	163	325
3	138	27	197	362

TABLE 4.12-9
FINAL STATUS OF BURROWS DETECTED IN THE BSA AND 500-FOOT BUFFER OF THE BSA1

Survey Number	Occupied	Active	Inactive	Total
4	148	20	208	376

Source: AECOM 2014e, p. 3-26.

[1] Final status refers to burrows that were classified as follows:

- Occupied – presence of owls directly at the burrow during any survey (i.e., 1, 2, 3, or 4).
- Active – presence of fresh or recent sign during either the habitat assessment or any survey (i.e., 1, 2, 3, or 4) (no owls observed at the burrows).
- Inactive – absence of fresh or recent sign during either the habitat assessment or Surveys 1 through 4 or a burrow previously documented as suitable during at least one of the four protocol surveys that was later documented as no longer suitable during a subsequent protocol survey due to erosion, a natural burrow collapse, or inadvertent damage from anthropogenic activities.

The final status is a useful metric for counting the number of occupied burrows within the BSA for two reasons. First, during some surveys biologists may not have seen BUOW at burrows because BUOW were not outside their burrows or may have flushed before observers detected them and it may have taken multiple surveys to confirm a burrow was indeed occupied. Second, adult and young BUOW may occupy several non-nest (satellite) burrows and multiple surveys are sometimes necessary to document these additional burrows. The final status likely provides a conservative estimate of the number of occupied burrows because some previously occupied burrows may become unoccupied if nests were abandoned or if BUOW were predated (AECOM 2014e, p. 3-26).

In general, the areas with the highest BUOW densities consisted of multiple ditches and/or canals and dirt roads. Linear areas that consisted of a dirt road and a small earthen berm generally had low to no BUOW present. The number of BUOW territories in a given area has been shown to be influenced by the availability of burrows. Higher BUOW density in some locations of the BSA versus others may be due to greater burrow availability in areas consisting of more complex habitat (i.e., multiple canals/drains/berms present) or a high density of burrowing mammals present. Additionally, IID management and maintenance practices avoid known BUOW locations and reduce vegetation along canals and drains, which may allow for greater burrow availability. Of the 148 burrows (or burrow clusters) documented as occupied within the BSA at some point during the course of the four surveys, approximately 84 (57 percent) were documented within IID ROWs (**Figure 4.12-4**) (AECOM 2014e, p. 3-27).

As discussed above under "Methodology," no transect surveys were completed within CUP 13-0047 due to the area being added to the proposed Project after completion of surveys. A portion of CUP 13-00467 was scanned for BUOW using binoculars, but none were detected. This area has a high potential for BUOW due to the presence of canals, drains, and dirt roads that could contain burrows for nesting. Surveys would be required prior to the construction of facilities in this area (AECOM 2014e, p. 3-27).

Approximately 16 occupied burrows were detected by RECON and Barrett Biological during surveys conducted in 2010 and 2011 within portions of the Project's Gen-Tie facilities that would be shared with the Mount Signal Solar Farm Project's existing structures. These areas are now developed but occupied burrows may be present along disturbed habitat or IID canals and/or drains that remain in these areas. It is unknown if the number of occupied burrows within the Mount Signal Solar Farm Project's Gen-Tie corridor has changed during construction of the Mount Signal Solar Gen-Tie line and associated Mount Signal Solar Farm Project (AECOM 2014e, p. 3-27).

Loggerhead Shrike

Species Background

The loggerhead shrike is a CDFW SSC. This species inhabits open habitat types such as grasslands, fallow fields, pastures, farmland, and desert scrub. For foraging, it requires perches of tall enough stature to overlook hunting areas, such as tree snags, stumps, and fence posts. Loggerhead shrike also requires vegetation with thorns (or barbed-wire fences) for impaling prey. Prey includes invertebrates and small vertebrates, including small mammals, birds, and reptiles. While this species has been in steady decline throughout much of its range, beginning in the northeast in the 1930s and in the southeast and mid-west by the 1960s, it was still fairly common in California as late as 1970. Loggerhead shrike showed declines in most of California beginning around 1968; however, in the southern California deserts, it has shown no marked decline. Loggerhead shrikes remain on permanent territories throughout the year. Outside of the breeding season, males and females defend neighboring territories, which coalesce at the beginning of the nesting period (AECOM 2014e, p. 3-27).

Habitat and Occurrence in the BSA and Vicinity

Loggerhead shrike was observed twice during BUOW surveys. It was observed perching and foraging along the New River at the north end of the BSA and in Greeson Wash in the center of the BSA (**Figure 4.12-5).** Both of these areas contain suitable breeding habitat, but breeding was not observed in the BSA. Loggerhead shrike is a fairly common breeding resident of the Imperial Valley, becoming more common in winter. During the breeding season, this species is scarce in agricultural areas, but fairly common in desert scrub (AECOM 2014e, p. 3-27).

Yellow-Headed Blackbird

Species Background

Yellow-headed blackbird is a CDFW SSC. This species inhabits freshwater marshes and ponds with dense cattail. It nests colonially and is more particular in its habitat requirements than the red-winged blackbird, generally avoiding ditches or plants other than cattail for nesting. It forages in agricultural areas, and is often found in flooded fields and at cattle feed lots. The yellow-headed blackbird once bred throughout most of California, but its numbers and range have been greatly reduced with the loss of marsh breeding habitat to drainage and conversion to agriculture. It currently occurs in California primarily as a migrant and summer resident with small numbers wintering in the Central Valley and Imperial and Colorado River Valleys (AECOM 2014e, p. 3-28).

Habitat and Occurrence in the BSA and Vicinity

Yellow-headed blackbird was observed on several occasions near the southern portion of the BSA during BUOW surveys (**Figure 4.12-5**). All observations were of flying individuals. Suitable foraging habitat exists throughout the BSA in agricultural fields and at cattle feed lots. Potential breeding habitat exists just outside the BSA in a stockyard pond west of Greeson Wash and south of SR 98 (just east of CUP 13-0036). The yellow-headed blackbird is a fairly common breeder in the Imperial Valley with the largest concentration of breeding birds currently found at Finney and Ramer Lakes. Winter abundance is variable with larger numbers being found in milder years (AECOM 2014e, p. 3-28).

Merlin

Species Background

Merlin is a CDFW Watch List species. This species frequents coastlines, open grasslands, savannahs, woodlands, lakes, wetlands, edges, and early successional stages. It breeds in open woodlands and

winters in a variety of habitats including more open areas like grasslands and coastlines. This species breeds in Alaska, Canada, northeast U.S., and northwestern central U.S. (AECOM 2014e, p. 3-28).

Habitat and Occurrence in the BSA and Vicinity

Merlin was observed on one occasion in early April near the central portion of the BSA during BUOW surveys (**Figure 4.12-5**). Suitable foraging habitat exists throughout the BSA in agricultural fields. No potential breeding habitat exists in the BSA. This species is considered a rare winter visitor (mid-September to mid-April) to the Imperial Valley (AECOM 2014e, p. 3-28).

Mountain Plover

Species Background

Mountain Plover is a CDFW SSC. Mountain plover does not breed in California; however, this species winter in central and southern California, southern Arizona, southern Texas, and northern Mexico, primary wintering areas are the Central and Imperial valleys of California. In California, mountain plover primarily occur from September to mid-March, with peak numbers from December through February. Currently, the largest wintering numbers occur in the Imperial Valley and the portion of the Central Valley from southern Colusa County south to Kern County. The species winters primarily in plowed fields, heavily grazed annual grasslands, or burned fields (AECOM 2014e, pp. 3-28 and 3-29).

Habitat and Occurrence in the BSA and Vicinity

This species was not detected during biological surveys; however, wintering avian surveys were not conducted for the Project. There are no known locations of this species in the vicinity of the BSA. The presence of agriculture fields within the BSA and buffer provide suitable wintering and foraging habitat for this species. The Imperial Valley supports the largest wintering population of mountain plover known anywhere in the world. Given that Mountain Plover is known to occur within the Imperial Valley, it is considered to have a high potential to occur within the BSA during the winter (AECOM 2014e, p. 3-29).

Bats

Species Background

Several bat species, including western mastiff bat (*Eumops perotis californicus*), western yellow bat (*Lasiurus xanthinus*), and pocketed free-tailed bat (*Nyctinomops femorosaccus*), are CDFW SSC. These species forage in open areas, including agriculture fields. Western mastiff bat tends to be colonial and roosts in high cliffs. Western yellow bat is most often found in trees, but prefers to roost in thatch of palm tree. Pocketed free-tailed bat roosts in rock crevices (AECOM 2014e, p. 3-29).

Habitat and Occurrence in the BSA and Vicinity

No bat species were detected during biological surveys; however, bat surveys were not conducted for the Project. The BSA contains suitable foraging habitat for western mastiff bat, western yellow bat, and pocketed free-tailed bat. In addition, palm trees within the BSA and buffer could serve as roost sites for the western yellow bat. No roosting habitat occurs for the other two species in the BSA. The nearest known western mastiff bat location is a 1996 CNDDB occurrence located approximately five miles (eight kilometers) away in Calexico, California. The most recent (1999) western yellow bat locations are known from the vicinity of El Centro, California, approximately five miles (eight kilometers) to the northeast. The nearest known pocketed free-tailed bat location is a 1996 CNDDB occurrence located approximately five miles (eight kilometers) away in Calexico, California. Given the proximity to known locations and suitable foraging habitat present, these species are considered to have moderate potential to occur within the BSA (AECOM 2014e, p. 3-29).

American Badger

Species Background

The American badger, a CDFW SSC, is a resident of level, open areas in grasslands, agricultural areas, and open shrub habitats. It digs large burrows in dry, friable soils and feeds mainly on fossorial mammals: ground squirrels, gophers, rats, mice, etc. Badgers are primarily active during the day but may become more nocturnal in proximity to humans. The home range of badgers has been measured to be 1,327 to 1,549 acres (537 to 627 hectares) for males and 338 to 751 acres (137 to 304 hectares) for females in Utah and 400 to 600 acres in Idaho. Mating occurs in late summer or early fall, and two to three young are born 183 to 265 days later in March or April. Badgers are known to live as many as 11 to 15 years (AECOM 2014e, pp. 3-29 and 3-30).

Habitat and Occurrence in the BSA and Vicinity

No American badgers were observed in the BSA, but a burrow exhibiting signs of predation by an American badger was detected in the buffer at the north end of the BSA along the New River (**Figure 4.12-5**). Suitable foraging habitat exists throughout the BSA along the borders of agricultural fields, irrigation ditches, in Greeson Wash, and along the New River (all CUPS). Active agriculture fields within the BSA are regularly disturbed and, therefore, do not provide suitable denning or burrowing habitat for the badger and its prey base (i.e., fossorial animals). Burrowing and/or denning habitat within the BSA occurs within the undisturbed areas along Greeson Wash and the New River. The closest known occurrence is a historical CNDDB location from 1911 approximately 2.5 miles (4 kilometers) to the north of the BSA (AECOM 2014e, p. 3-30).

Migratory Birds

Native avian species present within the BSA are protected under the conventions implemented by the MBTA. Of the 72 avian species detected within the BSA, 70 are protected under the MBTA. The special-status avian species discussed in the sections above are also protected under the MBTA. Not all migratory birds have special status in the sense that they are considered rare, threatened, or endangered by local, state, or federal LORS and in need of conservation. However, migratory birds are protected under the MBTA and CFGC Sections 3503, 3503.5, and/or 3513 (AECOM 2014e, p. 3-30).

The diversity of bird species within a geographic area varies with respect to the character, quality, and diversity of vegetation communities. Due to the seasonal homogeneity of low habitat structure within the majority of the BSA, bird diversity was expectedly low. Diversity was highest near the riparian habitat along Greeson Wash and the New River and riparian vegetation near the canal/drains. Avian species use the BSA for nesting, foraging, wintering, and movement purposes. Species that breed within the BSA use the nonagricultural habitat (e.g., canals/drains) for nesting and forage within the agricultural fields. During biological surveys, in addition to BUOW, nests of black-necked stilt (*Himantopus mexicanus*), and killdeer (*Charadrius vociferus)* were also documented within the BSA. The agricultural fields within the BSA also provide foraging habitat for many non-breeding avian species, including those species that winter in the Imperial Valley. Biological surveys were not conducted in the winter but the Imperial Valley is known to have an abundance and diversity of birds in the winter and is considered one of the premier winter birding spots in the country. Agricultural fields in the Imperial Valley support thousands of wintering waterbirds, shorebirds, and waterfowl (AECOM 2014e, p. 3-30).

Wildlife Corridors

Connectivity, or the ability of organisms to move through a landscape, is essential in heterogeneous landscapes for the persistence of healthy and genetically diverse animal communities. Corridors are linear landscape features that allow for species movement over time between two areas of habitat that would otherwise be disconnected. Regional corridors link two or more large areas of natural open space

and local corridors allow resident animals to access critical resources (food, water, and cover) in areas that might otherwise be isolated. Corridors may be species-specific, as many wildlife species have specific habitat requirements for survival and dispersal. At a minimum, corridors promote local colonization or recolonization of distinct habitats, and potentially increase genetic variability within and between populations. Wildlife movement activities typically fall into one of three movement categories: local and regional dispersal (e.g., juvenile animals from natal areas or individuals extending range distributions), regional seasonal migration, and local movements related to home range activities (foraging for food or water, defending territories, searching for mates, breeding areas, or cover). The BSA is likely used by a variety of wildlife species for several movement purposes (AECOM 2014e, p. 3-31).

At the local level, most terrestrial wildlife species are likely to use the BSA for movements related to dispersal and home range activities. Terrestrial species with small home ranges likely rely on the earthen drains for movement while those species with larger home ranges may traverse the agriculture fields. Avian species are generally capable of using both agriculture and non-agriculture habitat within the BSA for dispersal and home range activities. The larger riparian areas, such as the New River and Greeson Wash likely support the most local movement for wildlife species because the area provides additional cover compared to the narrow, and often unvegetated, drains and canals and adjacent agricultural areas (AECOM 2014e, p. 3-31).

At the regional level, the BSA is not part of a regional corridor for terrestrial species. The agricultural matrix likely inhibits regional movements for most terrestrial species. The Yuha Basin, approximately four miles (six kilometers) to the west of the BSA is an Area of Critical Environmental Concern (ACEC) and provides open space for terrestrial wildlife species to move with minimal barriers. It is likely that most regional movements occur within this designated open space as opposed to the Imperial Valley agriculture matrix which is a possible barrier to many terrestrial species (AECOM 2014e, p. 3-31).

The BSA is part of the Pacific Flyway, a major north-south migration route for birds traveling between North and South America. Hundreds of species use this migratory route each year. The Imperial Valley is a designated Audubon State Important Bird Area (IBA) due to the wetland habitat and agriculture fields that provide migration stopover and wintering habitat for avian species (AECOM 2014e, p. 3-31). Most wetland habitat is contained within the Sonny Bono Salton Sea National Wildlife Refuge and the Imperial State Wildlife Area (including Finney-Ramer Lakes) (AECOM 2014e, p. 3-31). The Salton Sea, a 367-square-mile lake approximately 25 miles to the north of the BSA, is a well-studied migrant stopover site (AECOM 2014e, p. 3-31). Other habitat in the Imperial Valley is dependent upon water levels, water delivery infrastructure, marshes, and flooded agricultural fields (AECOM 2014e, p. 3-31). Over 350 species of birds have been recorded in the Imperial Valley IBA (AECOM 2014e, p. 3-31). Many avian species likely pass through the BSA during migration and/or use the various drains, canals, and/or flooded agriculture fields as migratory stopover habitat (AECOM 2014e, p. 3-31).

B. Electric Collector Line Corridor

The proposed Electric Collector Line Corridor would be a separate utility line corridor located outside of proposed CUPs. The Electric Collector Line Corridor would collect the power from electric lines within each CUP area to connect them to the Mount Signal Solar Farm Project Gen-Tie line. Eighteen new poles would be required within the Electric Collector Line Corridor. Each CUP area is anticipated to use a proposed main Project switchyard; however, each CUP may independently construct a 230-kilovolt (kV) step-up transformer and switchyard. Analysis of potential biological impacts associated with Project-specific improvements within the Electric Collector Line Corridor are broken out where applicable in Section 4.12.3, Impacts and Mitigation Measures, below.

C. MOUNT SIGNAL SOLAR FARM PROJECT GEN-TIE LINE CORRIDOR

The Mount Signal Solar Farm Project began construction in November 2012. Many of the agricultural areas within the Mount Signal Solar Farm Project are now developed. The Mount Signal Solar Farm Project has already constructed a 230-kV single-circuit Gen-Tie line that the proposed Project would use. The Mount Signal Solar Farm Project Gen-Tie facilities occur within compacted earthen roads. Agriculture fields and IID canals and/or drains are adjacent to the Mount Signal Solar Farm Gen-Tie line corridor.

All CUPs (13-0036 thru 13-0052) are anticipated to use the existing Mount Signal Solar Farm Project Gen-Tie line corridor that extends from the Solar Energy Center parcels through the Mount Signal Solar Farm Project to the ISECS switchyard. As noted in the introduction above, the BSA does not include the Mount Signal Solar Farm Project Gen-Tie line corridor. Site photographs of the BSA and Gen-Tie facilities outside the BSA that would be shared with the Mount Signal Solar Farm Project are included in **Appendix J** (AECOM 2014e).

Approximately eight additional poles would be added to the Mount Signal Solar Farm Project Gen-Tie line corridor to accommodate co-location of the Project's lines. As such, analysis of potential biological impacts particular to Project-specific upgrades within the Mount Signal Solar Farm Project Gen-Tie line corridor are broken out where applicable in Section 4.12.3, Impacts and Mitigation Measures, below.

4.12.3 IMPACTS AND MITIGATION MEASURES

A. STANDARDS OF SIGNIFICANCE

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

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

d) Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

e) Conflict with any local policies or ordinances protecting a biological resource, such as a tree preservation policy or ordinance.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

B. METHODOLOGY

The Biological Technical Report prepared for the proposed Project describes the existing biological resources located within the vicinity of the Project; details the methodologies used to assess potential impacts to sensitive habitats and species; provides results of the assessment; and presents avoidance, minimization, and mitigation measures to reduce potential impacts (AECOM 2014e).

The BSA was initially created based on preliminary solar development designs. Subsequent to the completion of surveys in 2012, the Project footprint changed in size due to design modifications for several of the Project components and to avoid impacts to sensitive biological resources. Thus, the BSA is generally defined as the Project footprint within which all components of the Project (e.g., solar field arrays, Gen-Tie facilities, O&M building, substation, switchyard, and access roads) would be located. The BSA also includes additional areas surveyed during 2012 that are located outside of the Project footprint generally described as follows: along the New River east of CUPs 13-0045, 13-0046 and 13-0047; east of CUPs 13-0039, 13-0040 and 13-0043; between CUPs 13-0037 and 13-0038; along the Greeson Drain southeast of CUP 13-0042 and bisecting CUP 13-0037; and areas adjacent to CUPs 13-0036, 13-0050, 13-0051 and 13-0052. The BSA is approximately 3,678 acres (1,488 hectares) (**Figure 4.12-1**).

Prior to beginning field surveys, AECOM biologists consulted the CDFW California Natural Diversity Database (CNDDB) (RareFind Version 3.1.0; CDFW 2013), Californialifornia Native Plant Society (CNPS) Inventory of Rare and Endangered Plants, and the U.S Department of Agriculture's (U.S.DA) Natural Resources Conservation Service (NRCS) Web Soil Survey. A 6-quad (U.S. Geological Survey [U.S.GS] topographic quadrangles) search area was used to search records in the databases noted above. Historical data were not available south of the U.S./Mexico border. These resources were consulted to determine historical occurrence of special-status plant and wildlife species and other natural resources within the BSA. Species were considered to have special status if they met at least one of the following criteria:

- Listed or proposed for listing (including candidate species[1]) under the federal ESA and CESA);
- CDFW SSC;
- CDFW fully protected species;
- CDFW watch list species;
- Covered as a state protected furbearing mammal (PFM) (Title 14 California Code of Regulations [CCR] Section 460);
- Listed by CNPS as California Rare Plant Ranks (CRPR) 1A (presumed extinct in California and rare/extinct elsewhere), 1B (rare, threatened, and endangered in California and elsewhere), 2A (presumed extinct in California, but more common elsewhere), or 2B (rare, threatened, or endangered in California, but more common elsewhere) (AECOM 2014e, p. 2-2).CRPR 1A, 1B, 2A, and 2B species are considered special-status plant species if they fall within any of these categories as defined in the NNPA, CFGC Section 1901, or the CESA, CFGC Sections 2050 through 2098;

[1] Candidate species are those petitioned species that are actively being considered for listing under the ESA, as well as those species for which USFWS has initiated an ESA status review, as announced in the Federal Register. Proposed species are those candidate species that were found to warrant listing and have been officially proposed for listing in the Federal Register. Under CESA, Californiandidate species are those species currently petitioned for state-listing status.

- CRPR 3: (plants for which more information is needed [a review list]), or 4 (plants of limited distribution [watch list]).

AECOM conducted vegetation mapping; a rare plant habitat assessment; general wildlife surveys and habitat assessment; and focused protocol surveys for the western burrowing owl (BUOW) in spring and summer 2012. AECOM biologists recorded wildlife sign, track, and direct observations that were incidentally detected during the habitat assessment and BUOW protocol surveys conducted during spring and summer 2012. RECON conducted a jurisdictional waters and wetlands delineation in fall 2012 (AECOM 2014e).

Subsequent to the completion of vegetation mapping, rare plant assessments, and BUOW surveys in 2012, CUP area 13-0047 was added to the Project by the Applicant. As a result, AECOM added portions of parcels along the New River to the BSA. Vegetation and habitat assessments were completed via desktop analysis in these areas. A field jurisdictional waters and wetlands delineation was also conducted for CUP 13-0047 by RECON in 2013. No other field surveys have been conducted on these newly added areas (AECOM 2014e).

Types of Biological Impacts

Biological resources may be either directly or indirectly impacted by activities associated with construction, operation, and decommissioning of the Project. Furthermore, direct and indirect impacts may be either permanent or temporary in nature. These various types of impacts are defined below (AECOM 2014e, p. 4-1).

> **Direct:** Direct impacts are caused by a project and occur at the same time and place as the project. Any alteration, disturbance, or destruction of biological resources that would result from project-related activities is considered a direct impact.
>
> **Indirect:** As a result of project-related activities, biological resources may also be affected in a manner that is not direct. Indirect impacts may occur later in time or at a place that is farther removed in distance from the project than direct impacts, but indirect impacts are still reasonably foreseeable and attributable to project-related activities.
>
> **Permanent:** All impacts that result in the irreversible removal or loss of biological resources are considered permanent.
>
> **Temporary:** Any impacts considered to have reversible effects on biological resources can be viewed as temporary.

Permanent direct impacts to biological resources would occur from construction and would include direct losses to potential jurisdictional waters, wetlands, and special-status species; and diverting natural surface water flows. Direct impacts could include injury, death, and/or harassment of listed and/or special-status species. Direct impacts could also include the destruction of habitats necessary for species breeding, feeding, or sheltering. Direct impacts to plants can include crushing of adult plants, bulbs, or seeds. Temporary direct impacts would result from temporary work areas required during construction. Potential permanent direct impacts to special-status wildlife and migratory birds include mortality of individuals by vehicle collisions during operation activities. Potential permanent direct impacts to avian species during operation activities include collisions and/or electrocutions with overhead Gen-Tie wires, Gen-Tie tower guy wires, and PV panels. Additionally, large areas of solar PV or CPV panels in the desert environment may mimic water bodies and inadvertently attract migrating or dispersing wetland bird species (AECOM 2014e, p. 4-1).

Temporary and permanent indirect impacts would occur during construction and O&M activities, respectively. The extent of indirect impacts varies by species and biological resource. Potential indirect impacts include the following (AECOM 2014e, pp. 4-1).

Habitat fragmentation: Fragmented, smaller areas of habitat usually contain fewer species, have proportionally larger perimeters (making these areas more vulnerable to edge effects), are more likely to be biologically isolated from other habitat areas, and tend to be more vulnerable to adverse stochastic (random) events.

Noise: Higher ambient noise levels can result from development, which can impact species relying on sound to communicate (e.g., birds). Higher ambient noise levels can disturb species and/or cause direct habitat avoidance. The impact of noise on wildlife differs from species to species, and is dependent on the source of the noise (e.g., vehicle traffic versus blasting) and the decibel level, duration, and timing.

Changes in Hydrology: Changes in hydrology, runoff, and sedimentation could indirectly impact surface-water-dependent species. Increased runoff into habitat could result in increased erosion and rates of scouring, which could result in downstream habitat loss for some species. Runoff, sedimentation, and erosion can adversely impact plant populations by damaging individuals or by altering site conditions sufficiently to favor other species (native and exotic non-natives) that would competitively displace the special-status species.

Exotic and Predator Species: Non-native plant and animal species have few natural predators or other ecological controls on population sizes. Non-native plant and animal species often thrive in disturbed habitats and may aggressively out-compete native species or otherwise harm sensitive species. Additionally, developed areas can harbor human commensal species, such as ravens, which may increase predation rates of native species.

Lighting: Artificial night lighting could impact habitat value for some species particularly for nocturnal species, through potential modification of predation rates, obscuring of lunar cycles, and/or causing direct habitat avoidance. Nighttime lighting could also disturb diurnal species roosting in adjacent habitat.

Fugitive Dust: Fugitive dust can adversely impact plants by reducing the rates of metabolic processes such as photosynthesis and respiration.

Vegetation Mapping

Vegetation mapping was conducted within the BSA via driving surveys and desktop analysis. Driving surveys were conducted on April 25 and 26, 2012, by AECOM botanist Lance Woolley. Vegetation mapping was completed for CUP area 13-0047 and portions of parcels along the New River via desktop analysis using aerial photographs and data sheets from RECON's (2013) jurisdictional waters and wetlands delineation. Vegetation communities were classified based on Holland (1986). The CDFW (2010) vegetation classification system was also used to provide additional detail when needed, such as denoting special vegetation communities that are either known or believed to be of high priority for inventory in CNDDB due to significance or rarity. Botanists used 200-foot scale ortho-topo maps vegetation mapping in the field. The minimum mapping unit for vegetation mapping was one acre (0.40 hectare) for upland vegetation communities and 0.50 acre (0.20 hectare) for wetland and riparian vegetation communities. A smaller minimum mapping unit was used in riparian areas to accommodate the greater diversity of vegetation types that can occur per unit area as opposed to uplands (AECOM 2014e).

Dominant plant species for the various riparian and upland vegetation communities were recorded according to the USACE 50/20 dominance rule. According to this rule, dominant plant species are

defined as those that, when ranked in order of abundance, collectively make up 50 percent relative cover. Each dominant species individually makes up at least 20 percent relative cover, or is needed to surpass the 50 percent relative cover threshold. Once the dominant plant species were identified according to this method, the species were grouped according to relative cover: species below 20 percent, species ranging from 20 to 50 percent cover, and species exceeding 50 percent cover. An observation number was recorded on the map and keyed to field notes for representative locations. A description of the vegetation community was written in field notes and included disturbance, special soils, potential jurisdictional waters, and habitat suitability for sensitive species (AECOM 2014e).

Jurisdictional Waters and Wetlands

RECON conducted a field delineation for jurisdictional waters and wetlands within the BSA between September 8 and 9, 2012. Detailed survey methods and results of the delineation are presented in the RECON delineation report titled *Jurisdictional Waters Delineation Report for the Wistaria Ranch Solar Energy Center Project* (included as Appendix A to **Appendix J** of this EIR). Prior to field surveys, RECON conducted a pre-survey investigation to obtain contextual information relevant to the area surveyed. RECON examined aerial photographs and U.S.GS topographic maps of the site to gain a better understanding of the physical and hydrologic setting of the area (AECOM 2014e).

The wetland delineation followed the guidelines set forth by Environmental Laboratory's 1987 *Corps of Engineers Wetlands Delineation Manual*, Environmental Laboratory's 2008 *Regional Supplement to the USACE Wetland Delineation Manual: Arid West Region, Version 2.0*, and Environmental Laboratory's 2008 *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States: A Delineation Manual* to determine the potential presence of federal and state jurisdictional areas and the extent of jurisdictional waters. Pursuant to Section 404 of the CWA, USACE is authorized to regulate any activity that would result in the discharge of dredged or fill material into WUS (including wetlands), which include those waters listed in 33 CFR 328.3 (Definitions). The fundamental rationale of Section 404 of the CWA is that no discharge of dredged or fill material should be permitted if there is a practicable alternative that would be less damaging to aquatic resources or if significant degradation would occur to WUS (including wetlands) (AECOM 2014e).

Areas meeting criteria for jurisdiction under the CDFW and Colorado River RWQCB were also evaluated and mapped. CDFW regulates activities that would divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. CDFW has jurisdiction over riparian habitats (e.g., desert wash scrub) associated with arid watercourses. Jurisdictional waters of the state are delineated by the outer edge of riparian vegetation or at the top of the bank of streams or lakes, whichever is wider. The Fish and Game Commission has defined "stream" in Title 14 CCR Section 1.72 as follows: "[A] body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation." In addition, Title 14 CCR Section 1.56 states "includes natural lakes or man-made reservoirs" (AECOM 2014e).

RWQCB is the regional agency responsible for protecting water quality in California. The jurisdiction of this agency includes all WUS as mandated by the Federal CWA. If it is determined that an activity proposed within jurisdictional waters requires a permit pursuant to Section 404 of the CWA, the RWQCB must certify that the discharge will comply with state water-quality standards, or waive the certification requirement then pursuant to Section 401 of the CWA. In addition, regulates under Porter-Cologne, the RWQCB also which generally includes all waters subject to the jurisdiction of USACE and CDFW as well as certain isolated waters that may be excluded from USACE jurisdiction (AECOM 2014e).

Rare Plant Habitat Assessment

A rare plant habitat assessment was conducted concurrently with vegetation mapping on April 25 and 26, 2012 to assess the need for rare plant surveys within the BSA. The BSA primarily consists of agriculture fields and irrigation canal and drains. Little native habitat is present due to agricultural activities and O&M activities at irrigation canals and drains. Relic native habitat occurs along the western bank of the New River but is very fragmented. Botanists walked meandering transects spaced approximately 50 feet (15 meter) apart in areas where native habitat occurred. All observable and readily identifiable vascular plant species encountered during the field surveys were identified and recorded to a taxonomic level to determine rarity. All sensitive plant species encountered during the field surveys were identified, recorded, and mapped with a GPS unit. Plant species were identified using plant field and taxonomical guides, such as the Jepson Manual.

CUP area 13-0047 and portions of parcels along the New River were added to the BSA subsequent to the completion of the field rare plant assessment. The potential for these areas to support rare plant habitat was evaluated by reviewing data sheets from the RECON Jurisdictional Waters Delineation Report (AECOM 2014e, p. 2-6) and data collected in adjacent habitat. Prior to the onset of construction within CUP area 13-0047, a field rare plant habitat assessment would be conducted to assess the need for focused rare plant surveys within this CUP area.

General Habitat Assessment and Wildlife Surveys

A wildlife habitat assessment was conducted on April 4, 2012, by AECOM biologists Rocky Brown and Shelly Dayman. The BSA, excluding CUP 13-0047, was evaluated for the presence of habitat suitable for special-status wildlife species. When areas could not be accessed directly due to trespassing issues, these areas were evaluated with the use of binoculars or a spotting scope from adjacent areas. Any special-status species or sign observed during the wildlife habitat assessment was recorded and marked using a Global Positioning System (GPS). The purpose of the wildlife habitat assessment was to determine whether further surveys for special-status wildlife species identified during database research and literature reviews would be warranted. CUP 13-0047 and portions of parcels along the New River were added to the BSA subsequent to the completion of the wildlife habitat assessment. These areas were evaluated by reviewing aerial photography and data collected in adjacent habitat (AECOM 2014e, p. 2-31).

AECOM biologists recorded wildlife sign, track, and direct observations that were incidentally detected during the habitat assessment and BUOW protocol surveys conducted during April, May, and June 2012. Additionally, habitat connectivity and potential wildlife movement corridors within the BSA were evaluated during these surveys (AECOM 2014e, p. 2-31).

Burrowing Owl Surveys

During the habitat assessment, areas with suitable BUOW habitat were mapped as one of two categories: (1) foraging habitat, or (2) burrow (i.e., nesting) and foraging habitat. Essentially all vegetation types on-site, with the exception of developed habitat, were considered suitable for BUOW foraging. Irrigation drains and canals; fallow fields, nonagricultural upland habitat; and earthen berms along roads or agriculture fields, were considered suitable for BUOW nesting and foraging habitat. Developed habitat was not considered suitable BUOW habitat.

To evaluate impacts to BUOW, protocol breeding season BUOW surveys were conducted within the BSA and a 500-foot (150-meter) buffer of the BSA according to the methods described in CDFW's 2012 *Staff Report on Burrowing Owl Mitigation.* Per the 2012 CDFW BUOW breeding season protocol, four site visits were conducted with at least one site visit between February 15 and April 15, and a minimum of

three additional survey visits at least three weeks apart between April 15 and July 15 (with at least one of these surveys occurring after June 15). Surveys were conducted generally from morning civil twilight until 10:00 a.m. and two hours before sunset until evening civil twilight. Surveys were conducted by walking straight-line transects spaced approximately 23 to 66 feet (7 to 20 meters) apart, adjusting for vegetation height and density, when winds were less than 12 miles per hour (19 kilometers per hour), temperatures were greater than 68 degrees Fahrenheit (20 degrees Celsius), and cloud cover was less than 75 percent.

As summarized in **Table 4.12-10**, transects were completed in all nesting habitat within the BSA between April 10 and June 28, 2012, with the exception of habitat within CUP 13-0047. Detailed weather conditions for each survey day are included as Appendix B to **Appendix J** of this EIR.

TABLE 4.12-10
WESTERN BURROWING OWL SURVEY SCHEDULE

Survey Number	Survey Dates		Personnel
	Start	End	
1 - Walking	4/10/2012	4/18/2012	Rocky Brown; Shelly Dayman; Rob Conohan; Brennan Mulrooney; Andrew Fisher
2 - Walking	5/07/2012	5/11/2012	Rocky Brown; Shelly Dayman; Rob Conohan; Robbie Sweet
3 - Walking	5/29/2012	6/2/2012	Michael Anguiano; Marie Barrett; Rocky Brown; Shelly Dayman; Andrew Fisher
4 - Walking and Driving	6/25/2012	6/28/2012	Michael Anguiano; Rocky Brown; Shelly Dayman; James McMorran

Source: AECOM 2014e, p. 2-32.

CUP 13-0047 and portions of parcels along the New River (not suitable BUOW nesting habitat) were added to the BSA subsequent to the completion of BUOW surveys in 2012. Potential for BUOW presence in this area was assessed via desktop analysis. Visual coverage scans using binoculars were completed within the 500-foot (150-meter) buffer of the BSA, which included a portion of CUP 13-0047, as opposed to transects due to the lack of landowner permission to access to these areas (see **Figure 4.12-4**). Four site visits were completed per the 2012 CDFW BUOW guidance with two minor exceptions. The first survey extended three days beyond the April 15 survey window and ended on April 18 due to delays caused by high wind conditions (i.e., excess of 12 miles per hour [19 kilometers per hour]). Additionally, during the second survey, ornithologists were unable to access two approximately 0.43-mile-long (700-meter-long) dirt roads with irrigation drains and canals. These two dirt roads were scanned using binoculars during the second survey; during the third survey the roads were visited twice (visits spaced three days apart) in order to ensure that this parcel received four full coverage surveys. Both of these protocol deviations were approved by CDFW prior to completion (AECOM 2014e).

The minimal vegetation in nesting habitat throughout the BSA allowed transects to be spaced at the maximum distance of 66 feet (20 meters) apart, per CDFW guidance (2012). In linear areas, transects aligned parallel to roads, canals, and/or drains. Transects were completed on both sides of roads, canals, and/or drains and were often less than 66 feet (20 meters) apart due to narrow linear habitat. As a result, only one transect was usually needed to cover the area on each side of the road, canal, and/or drain, but additional transects were added in cases where the nesting habitat was greater than 66 feet (20 meters) wide (i.e., greater than the width of one transect) on a given side. In larger, nonlinear areas of suitable nesting habitat, linear transects were spaced 66 feet (20 meters) apart to ensure full coverage surveys of the area (AECOM 2014e).

During each survey (including the habitat assessment), individual BUOW and potentially suitable BUOW burrows were recorded and marked using GPS. Suitable burrows were defined as burrows greater than approximately 4 inches (10 centimeters) in diameter (height and width) and greater than approximately 60 inches (150 centimeters) in depth (Johnson et al. 2010). If a burrow was of adequate diameter and the end of the burrow could not be seen, it was considered suitable. It was not possible to measure the depth of each burrow. For each BUOW observation made at a burrow, the number and ages of individuals were recorded and the locations were recorded using a GPS. For each BUOW observation not associated with a burrow, the number and ages of individuals were recorded and the BUOW individual locations were recorded using a GPS where the owl was initially detected. Additional notes, such as BUOW behavior, were recorded as necessary (AECOM 2014e).

At each suitable BUOW burrow, presence of BUOW sign (e.g., pellets, prey remains, whitewash, decorations, tracks) and number of BUOW were recorded for each survey visit. All burrows were marked and assigned a burrow identification such that in subsequent surveys each burrow was revisited (i.e., burrows marked during survey one were visited a total of four times). Any additional burrows not identified during a previous survey were also marked during subsequent surveys. During each visit, the "survey status" of each burrow for the specific survey number was classified as follows:

- Occupied – a BUOW individual was observed to be present at the burrow;
- Active – a BUOW burrow with fresh BUOW sign but no BUOW individual was present;
- Inactive – suitable for BUOW but no BUOW individuals or sign was observed or a previously suitable burrow was no longer suitable due to erosion, a natural burrow collapse, or inadvertent damage from anthropogenic activities.

Following the completion of surveys, the cumulative visits to each burrow generated a survey history for that specific burrow within in the BSA. The 3-week time frame between surveys resulted in the activity and/or suitability of burrows often changing from one survey to the next. In some cases, previously suitable burrows became no longer suitable due to erosion, a natural burrow collapse, or inadvertent damage from anthropogenic activities. New burrows were also created between surveys as a result of ground squirrel activity within the BSA. Additionally, the activity at a burrow (i.e., occupied, active, or inactive) often changed between surveys possibly due to BUOW predation or individuals moving to another burrow in the vicinity (AECOM 2014e).

As a result, a final status was assigned to each burrow for impact analysis purposes. For this final status, burrows were classified as occupied if owls were present directly at the burrow during any survey (i.e., one, two, three, or four). Burrows were classified as active if fresh or recent sign was present during the habitat assessment or any survey (i.e., one, two, three, or four) (no owls observed at the burrows). Burrows were classified as inactive if fresh or recent sign was absent during both the habitat assessment and surveys one through four. Burrows were also classified as inactive if a previously suitable burrow was no longer suitable due to erosion, a natural burrow collapse, or inadvertent damage from anthropogenic activities (AECOM 2014e).

During surveys one through three, all transects were completed on foot (i.e., walking surveys). During survey four, with CDFW approval, driving surveys were conducted in combination with walking surveys. All transects along roads that could be accessed via vehicle were driven. Transects that could not be accessed with a vehicle were surveyed on foot. The driving approach for survey four had two key benefits. First, BUOW in this region have habituated to vehicle/machinery activity, and survey methods with ornithologists on foot are three times more likely to displace a BUOW than when an ornithologist remains inside a vehicle. The vehicles essentially acted as a blind and allowed ornithologists to

maneuver in proximity to occupied burrows before BUOW retreated to their burrow or flushed. This allowed for accurate estimation of occupied burrows and BUOW numbers. This was especially important for survey four because juveniles were also present. Juveniles tend to retreat quickly to the burrow. As juveniles get older the entire family may flush. In both cases, it becomes difficult to determine the number of juveniles using a specific burrow. Second, this method minimized disturbance to nesting BUOW. Due to the linear nature of the canals and drains, ornithologists on foot had to walk by occupied burrows. In most cases this flushed the BUOW from burrows, whereas ornithologists within a vehicle typically did not flush a BUOW (AECOM 2014e).

BUOW survey data were collected using electronic data forms installed on HP iPAQ Travel Companions. Electronic data forms included built-in data validation procedures for quality assurance and quality control purposes (AECOM 2014e).

C. Issues Scoped Out as Part of the Initial Study

Checklist criterion "f" was scoped out because Imperial County does not have a Habitat Conservation Plan (HCP). Thus, no conflicts or impacts would occur between the proposed Project and an adopted HCP.

D. Project Impacts and Mitigation Measures

This discussion identifies impacts to the biological resources occurring within the BSA that would result from proposed Project construction, operation and decommissioning related activities. Potential direct impacts are divided into discussions of proposed solar facilities and activities within The Solar Energy Center at each individual CUP (13-0036 thru 13-0052), the Electric Collector Line Corridor, and Mount Signal Solar Farm Project Gen-Tie line corridor upgrades. Potential indirect impacts are grouped into discussions for each "typical" CUP, proposed as part of the Phased CUP Scenario, and for the Full Build-out Scenario, because indirect impacts are expected to be similar for construction within throughout the Solar Energy Center, the Electric Collector Line Corridor, and Mount Signal Solar Farm Project Gen-Tie line corridor (i.e. Full Build-out Scenario) (AECOM 2014e, p. 4-5).

Impacts to Sensitive Vegetation Community/Land Cover Type

Impact 4.12.1 Construction of the proposed Full Build-out Scenario would result in the direct removal of approximately 2,564 acres of vegetation community/land cover type within the BSA, including 10.69 acres of Arrow Weed Scrub, 2.06 acres of drains and canals, 1.26 acres of open water, and 45.21 acres of tamarisk scrub. Project implementation could also result in indirect impacts to adjacent sensitive vegetation communities during construction, operation and decommissioning activities. This is considered a **potentially significant impact**.

CUPs 13-0037, 13-0038, 13-0039, 13-0042, 13-0045, 13-0046, 13-0047 and 13-0049

Construction

Direct Impacts

Solar Energy Center

Nine vegetation communities were mapped within the BSA, with agriculture being the most common community. **Table 4.12-11** shows the breakdown of vegetation communities directly impacted by each individual CUP area. All potential jurisdictional waters, including arrow weed scrub, drains and canals, open water, and tamarisk scrub, are considered sensitive vegetation communities. In addition, mesquite

bosque is considered sensitive by CNDDB. Agriculture fields and other upland habitat (i.e., salt bush scrub) are not considered sensitive (AECOM 2014e, p. 4-5).

As shown in **Table 4.12-11** and **Figure 4.12-6**, construction-related activities within CUPs 13-0037, 13-0038, 13-0039, 13-0040, 13-0042, 13-0045, 13-0046, 13-0047 and 13-0049 would result in permanent removal of vegetation communities as a result of grading and installation of solar facilities. Construction impacts would be greatest to agriculture land cover, the most abundant land cover type mapped within the BSA (AECOM 2014e, p. 4-5). However, agricultural fields and other upland habitat within the BSA are not considered sensitive vegetation communities.

Construction of CUPs 13-0037 and 13-0047 would result in direct impacts to arrow weed scrub; construction of CUPs 13-0037, 13-0038, 13-0039, 13-0040, 13-0042, 13-0046, 13-0047 and 13-0049 would result in direct impacts to drains and canals; construction of CUP 13-0047 would result in direct impacts to open water; and CUPs 13-0037, 13-0045, 13-0046, and 13-0047 would result in direct impacts to tamarisk scrub. Therefore, **potentially significant** direct impacts to riparian sensitive vegetation communities would occur during construction of CUPs 13-0037, 13-0038, 13-0039, 13-0040, 13-0042, 13-0045, 13-0046, 13-0047 and 13-0049.

Indirect Impacts

See discussion below, under Impact 4.12.1, "Full Build-out Scenario/All CUPs (13-0036 thru 13-0052)."

Operation

Full Build-out Scenario

See discussion below, under Impact 4.12.1, "Full Build-out Scenario/All CUPs (13-0036 thru 13-0052)."

Decommissioning

Full Build-out Scenario

See discussion below, under Impact 4.12.1, "Full Build-out Scenario/All CUPs (13-0036 thru 13-0052)."

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TABLE 4.12-11
ANTICIPATED PERMANENT DIRECT IMPACTS TO VEGETATION COMMUNITIES AND COVER FOR PROJECT SOLAR FACILITIES (ACRES)[1,2]

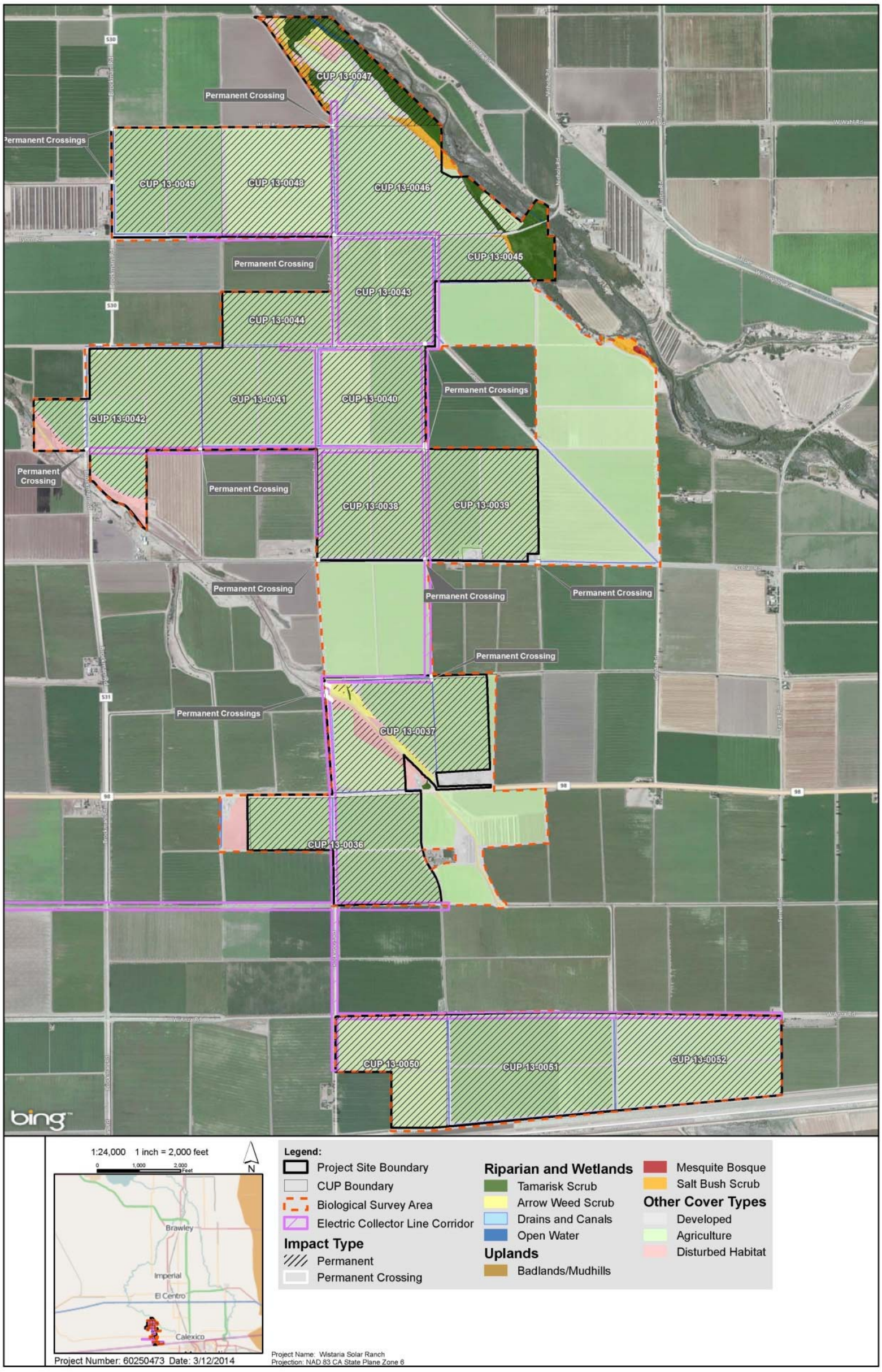
Vegetation Community	CUP Area																	Full Build-out
	13-0036	13-0037	13-0038	13-0039	13-0040	13-0041	13-0042	13-0043	13-0044	13-0045	13-0046	13-0047	13-0048	13-0049	13-0050	13-0051	13-0052	
Riparian and Wetlands																		
Arrow Weed Scrub	-	2.97	-	-	-	-	-	-	-	-	-	7.72	-	-	-	-	-	10.69
Drains and Canals	-	0.46	0.03	0.01	0.01	-	0.62	-	-	-	0.75	0.15	-	0.02	-	-	-	2.06
Open Water	-	-	-	-	-	-	-	-	-	-	-	1.26	-	-	-	-	-	1.26
Tamarisk Scrub	-	0.03	-	-	-	-	-	-	-	0.15	2.9	42.13	-	-	-	-	-	45.21
Subtotal Riparian and Wetlands	**-**	**3.45**	**0.03**	**0.01**	**0.01**	**-**	**0.62**	**-**	**-**	**0.15**	**3.65**	**51.26**	**-**	**0.02**	**-**	**0.00**	**-**	**59.19**
Uplands																		
Badlands/ Mudhills	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mesquite Bosque	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Salt Bush Scrub	-	-	-	-	-	-	-	-	-	0.44	0.21	7.58	-	-	-	-	-	8.23
Subtotal Uplands	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0.44**	**0.21**	**7.58**	**-**	**-**	**-**	**-**	**-**	**8.23**
Other Cover Types																		
Agriculture	177.24	160.87	145.27	148.2	127.95	136.97	189.75	133.47	76.13	43.01	171.93	36.87	146.9	136.85	114.84	202.78	171.79	2,318.31
Developed	7.84	8.78	11.15	6.13	4.32	3.79	14.42	8.31	2.51	4.92	9.75	21.42	8.58	4.85	9.7	17.67	11.30	155.43
Disturbed Habitat	0.51	12.26	-	-	-	-	-	-	-	-	-	7.73	-	-	-	-	-	22.91
Subtotal Other Cover Types	**185.59**	**181.92**	**156.42**	**154.33**	**132.27**	**140.76**	**206.56**	**141.78**	**76.13**	**47.93**	**181.68**	**66.02**	**155.48**	**141.69**	**124.54**	**220.45**	**183.09**	**2,496.64**
TOTALS	**185.59**	**185.37**	**156.46**	**154.34**	**132.28**	**140.76**	**207.19**	**141.78**	**76.13**	**48.51**	**185.54**	**124.86**	**155.48**	**141.71**	**124.54**	**220.45**	**183.09**	**2,564.06**

Source: AECOM 2014e, p. 4-7

[1] Values may not sum due to rounding after summation.

[2] No temporary impact would occur within the CUP areas.

[3] Sum of all CUP areas.



Source: AECOM 2014e.

FIGURE 4.12-6
IMPACTS TO VEGETATION COMMUNITIES

FULL BUILD-OUT SCENARIO/ALL CUPS (13-0036 THRU 13-0052)

Construction

Direct Impacts

Solar Energy Center

Construction-related activities within the BSA would result in permanent removal of vegetation communities. Solar facilities within each CUP area would result in varying levels of permanent impacts to each vegetation community (**Table 4.12-11** and **Figure 4.12-6**). Permanent removal of vegetation would result from grading and installation of the solar facility. Construction impacts would be greatest to agriculture land cover, the most abundant land cover type mapped within the BSA (AECOM 2014e, p. 4-5). However, agricultural fields and other upland habitat within the BSA are not considered sensitive vegetation communities. As discussed above, construction-related activities within CUPs 13-0037, 13-0038, 13-0039, 13-0042, 13-0045, 13-0046, 13-0047 and 13-0049 would directly impact sensitive riparian vegetation communities (**Table 4.12-11**). No other direct impact to sensitive vegetation communities would occur as a result of construction within the BSA. However, CUPs 13-0037, 13-0038, 13-0039, 13-0042, 13-0045, 13-0046, 13-0047 and 13-0049 are part of the Full Build-out Scenario. Therefore, the construction of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario would result in **potentially significant** direct impacts to vegetation communities.

Electric Collector Line Corridor

Installation of pole structures associated with the Electric Collector Line Corridor would result in permanent and temporary removal of agriculture vegetation communities (**Table 4.12-12**). Permanent impacts would result from pole foundation installation. Temporary impacts would result from access and staging areas required for pole installation. As discussed under "Methodology," impacts were quantified independently for each CUP area and assume that no other CUP areas would be developed. However, pole structures would be located within the permanent impact footprint of other CUP areas. At full build-out, the impact acreage of nearly all pole installations, with the exception of 18 poles, is included in impact acreage estimates for the CUP areas (**Table 4.12-11**). At full build-out approximately 18 poles would be located within off-site easements (i.e., outside of CUP areas) (**Table 4.12-12**). Of these 18 pole structures outside of the CUP areas, nine would be within agricultural areas along the Electric Collector Line Corridor between CUP 13-0037 and CUP 13-0038 and nine would be within off-site easements along the Electric Collector Line Corridor between CUP 13-0036 and CUP 13-0050. These off-site easement areas are/were active agriculture fields that have been analyzed for potential impacts to vegetation communities, and either were permitted for solar or are in the process of being permitted for solar energy generation. Further, agricultural fields are considered a non-sensitive, disturbed land use (AECOM 2014e, p. 4-6). Therefore, **less than significant** direct impacts to sensitive vegetation communities would occur during construction of the Electric Collector Line Corridor for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mount Signal Solar Farm Project Gen-Tie Line

The Mount Signal Solar Farm Project has already constructed a 230-kV single-circuit Gen-Tie line designed to be expanded to carry a second circuit. The Project would be using the second circuit and would share 230-kV Gen-Tie structures with the Mount Signal Solar Farm Project to connect to the ISECS switchyard. Impacts from installation of new double dead-end structures and upgrading the existing structure would occur within compacted earthen roads and/or disturbed habitat (**Table 4.12-13**). Impacts associated with installation of these structures and upgrades would occur at the time

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TABLE 4.12-12
ANTICIPATED PERMANENT AND TEMPORARY DIRECT IMPACTS TO AGRICULTURE FIELDS FOR THE PROJECT ELECTRIC COLLECTOR LINE CORRIDOR

	CUP Area																Full Build-out
	13-0036	13-0037	13-0038	13-0039	13-0040	13-0041	13-0042	13-0043	13-0044	13-0045	13-0046	13-0047	13-0048	13-0049	13-0050	13-0051	
Linear Feet of Electric Lines Outside of CUP area	2,709	10,488	10,646	13,406	16,043	18,862	15,816	18,010	17,530	18,707	23,948	21,444	23,999	2,584	5,230	9,261	5,400
Number of Pole Structures[3]	9	35	35	45	53	63	53	60	58	62	80	71	80	9	17	31	18
Permanent Impacts (acres)	0.02	0.06	0.06	0.08	0.09	0.11	0.09	0.11	0.10	0.11	0.14	0.13	0.14	0.02	0.03	0.06	0.03
Temporary Impacts (acres)	2.07	8.05	8.05	10.35	12.19	14.49	12.19	13.80	13.34	14.26	18.40	16.33	18.40	2.07	3.91	7.13	4.14

Source: AECOM 2014e, p. 4-8, Table 14.

[1] Electric Collector Line Corridor impacts for each CUP area assume only that CUP area would be developed as a worst-case scenario. As additional CUP areas are developed, electric collector line pole structures would be within the given CUP's impact footprint.

[2] At full build-out, all but 18 pole structures would be within the impact footprint of the 17 CUPs quantified in Table 13. The 18 pole structures outside of the CUP areas would be within off-site easements.

[3] Approximately one pole structure would be required every 300 feet.

of construction of the first CUP (AECOM 2014e, p. 4-6). Further, compacted earthen roads and/or disturbed habitat are considered non-sensitive vegetation communities. Therefore, **less than significant** direct impacts to sensitive vegetation communities would occur during construction of the Mount Signal Solar Farm Project Gen-Tie line corridor.

Full Build-out Scenario/All CUPs (13-0036 thru 13-0052)

Overall, CUPs 13-0037, 13-0038, 13-0039, 13-0040, 13-0042, 13-0045, 13-0046, 13-0047 and 13-0049 would directly impact sensitive vegetation communities and are part of the Full Build-out Scenario. Therefore, construction of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario would result in **potentially significant** direct impacts to vegetation communities.

TABLE 4.12-13
MOUNT SIGNAL SOLAR FARM GEN-TIE UPGRADES DIRECT HABITAT DISTURBANCE ACREAGE

Structure	Disturbed Habitat	
	Temporary	Temporary
Dead-end Structures (8)	3.6	3.6
Tangent Structures (19)	4.4	4.4
Subtotal	***8.0***	***8.0***
Contingency	2.0	2.0
Grand Total with Contingency	**10.0**	**10.0**

Source: AECOM 2014e, p. 4-5.

Indirect Impacts

Solar Energy Center

Construction activities have the potential to introduce non-native plants by carrying seeds from outside sources on vehicles, workers, and equipment. Ground disturbance can promote the establishment and spread of opportunistic non-native plants. The potential spread of non-native species to the surrounding vegetation communities would be considered a permanent indirect impact (AECOM 2014e, p. 4-6).

Grading and other construction activities associated with construction of the Solar Energy Center under both the Full Build-out and the Phased CUP Scenario have the potential to introduce non-native plant species and create airborne dust, sedimentation, and erosion. Herbicide used during control of non-native plant species has potential to be inadvertently applied to adjacent native plants within the Solar Energy Center at all CUPs (13-0036 thru 13-0052); however, herbicides are regularly used during existing agriculture activities and herbicide use within the Solar Energy Center under both the Full Build-out and the Phased CUP Scenario would decrease when agriculture activities cease. Airborne dust may result from construction vehicle travel on dirt access roads, grading, trenching, and other ground-disturbing activities. Construction activities, including grading and vegetation clearing, may result in increased erosion and sedimentation. Construction impacts from dust, sedimentation, and erosion would be considered a temporary indirect impact (AECOM 2014e, p. 4-6). Therefore, **potentially significant** permanent and temporary indirect impacts to sensitive vegetation communities would occur as a result of construction-related activities at the Solar Energy Center for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Electric Collector Line Corridor

Construction activities have the potential to introduce non-native plants by carrying seeds from outside sources on vehicles, workers, and equipment. Ground disturbance can promote the establishment and spread of opportunistic non-native plants. The potential spread of non-native species into the surrounding vegetation communities would be considered a permanent indirect impact (AECOM 2014e, p. 4-6).

Grading and other construction activities associated with construction of the Electric Collector Line Corridor have the potential to introduce non-native plant species and create airborne dust, sedimentation, and erosion. Airborne dust may result from construction vehicle travel on dirt access roads, grading, trenching, and other ground-disturbing activities. Construction activities, including grading and vegetation clearing, may result in increased erosion and sedimentation. Construction impacts from dust, sedimentation, and erosion would be considered a temporary indirect impact (AECOM 2014e, p. 4-6). Therefore, **potentially significant** permanent and temporary indirect impacts to sensitive vegetation communities would occur as a result of construction-related activities at the Electric Collector Line Corridor for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mount Signal Solar Farm Project Gen-Tie

Potential indirect impacts to vegetation communities are expected to occur during construction of the Mount Signal Solar Farm Project Gen-Tie line upgrades. Construction activities have the potential to introduce non-native plants by carrying seeds from outside sources on vehicles, workers, and equipment. Ground disturbance can promote the establishment and spread of opportunistic non-native plants. The potential spread of non-native species into the surrounding vegetation communities would be considered a permanent indirect impact (AECOM 2014e, p. 4-6).

Grading and other construction activities associated with construction of both the Full Build-out and the Phased CUP Scenario have the potential to introduce non-native plant species and create airborne dust, sedimentation, and erosion. Airborne dust may result from construction vehicle travel on dirt access roads, grading, trenching, and other ground-disturbing activities. Construction activities, including grading and vegetation clearing, may result in increased erosion and sedimentation. Construction impacts from dust, sedimentation, and erosion would be considered a temporary indirect impact (AECOM 2014e, p. 4-6). Therefore, **potentially significant** permanent and temporary indirect impacts to sensitive vegetation communities would occur as a result of construction-related activities at the Mount Signal Solar Farm Project Gen-Tie line upgrades.

Full Build-out Scenario/All CUPs (13-0036 thru 13-0052)

Overall, **potentially significant** indirect impacts to sensitive vegetation communities would occur as a result of construction-related activities for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Operation

Direct Impacts

Full Build-out Scenario/All CUPs (13-0036 thru 13-0052)

All operation activities associated with the Solar Energy Center, the Electric Collector Line Corridor improvements, and the Mount Solar Signal Project Gen-Tie corridor upgrades would occur within areas permanently cleared of vegetation during the construction of both the Full Build-out and the Phased CUP Scenario. Therefore, permanent and temporary direct impacts to vegetation communities would not occur during Project operation and **no impact** to sensitive vegetation communities would occur as a

result of operation-related activities for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Indirect Impacts

Full Build-out Scenario/All CUPs (13-0036 thru 13-0052)

Indirect impacts to vegetation communities resulting from operation are expected to be similar for the Solar Energy Center at each CUP (13-0036 thru 13-0052), the Electric Collector Line Corridor improvements, and the Mount Solar Signal Project Gen-Tie corridor upgrades. Potential indirect impacts to vegetation communities associated with operation include trampling of vegetation due to long-term unauthorized trespass, operational activity generated fugitive dust, erosion, sedimentation, storm water contaminant runoff, and the potential introduction and proliferation of invasive non-native plant species. Herbicide used during control of non-native plant species has potential to be inadvertently applied to adjacent native plants. However, herbicides are regularly used during existing agriculture activities on the existing solar field site. Herbicide use within the Solar Energy Center at all CUPs (13-0036 thru 13-0052) would decrease when agriculture activities cease. These indirect impacts have the potential to result in off-site vegetation degradation. Therefore, a **potentially significant** indirect impact to vegetation communities would occur during operation of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Decommissioning

Full Build-out Scenario/All CUPs (13-0036 thru 13-0052)

Decommissioning activities would result in indirect impacts to vegetation communities similar to those described above in association with construction and operation. Impacts would be indirect because biological resources would likely only remain within areas adjacent (i.e., off-site) to the Project footprint. Indirect impacts to vegetation communities for both the Full Build-out Scenario and Phased CUP Scenario would be temporary because the CUPs would be restored to pre-Project soil conditions as part of Project decommissioning. Overall, decommissioning is generally considered beneficial to biological resources. However, potential indirect impacts to vegetation communities may be considered **potentially significant** (AECOM 2014e, p. 4-69) during decommissioning activities of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mitigation Measures

GENERAL CONSTRUCTION MEASURES - FULL BUILD-OUT SCENARIO AND ALL CUPS (13-0036 THRU 13-0052)

Mitigation measures 4.12.1a, 4.12.1b, 4.12.1c, and 4.12.1d described below are general construction measures applicable to all sensitive, special status, and jurisdictional biological resources, including, but not limited to vegetation communities. As such, although discussed under the impact statement regarding vegetation communities, these measures are applicable to all construction activities conducted in association with both the Full Build-out Scenario and the Phased CUP Scenario, as further referenced under Impacts 4.12.2 thru 4.12.14, below.

MM 4.12.1a Each CUP owner shall identify and retain a qualified biologist(s) approved by CDFW. The name, documented experience, any permit numbers, and resumes for the qualified biologist(s) shall be submitted to the CDFW for approval at least 7 days prior to initiation of construction. It is assumed CDFW will approve qualified biologist(s) within 15 days of the submittal. The qualified biologist(s) shall be present on-site during all ground-disturbing phases of construction to regularly monitor construction activities and ensure construction is proceeding in compliance with the avoidance, minimization, and

mitigation measures committed to by the Applicant, as well as measures required by regulatory agencies. In addition, the qualified biologist(s) shall maintain communications with the appropriate personnel (project manager, resident engineer) to ensure that issues relating to biological resources are appropriately and lawfully managed. The qualified biologist shall be responsible for reporting any noncompliance issues to CDFW within 48 hours. The resident engineer shall be immediately notified to halt work, if necessary. The qualified biologist(s) shall provide a report to CDFW at least monthly identifying construction activities and the results of compliance monitoring related to implementation of avoidance and minimization measures. The qualified biologist(s) shall meet the following minimum qualifications:

- Have a bachelor's degree in biological sciences, zoology, botany, ecology, or a closely related field or at least 4 years of experience in field biology or current certification of a nationally recognized biological society, such as The Ecological Society of America or The Wildlife Society;
- Have at least 1 year of field experience with biological resources found in the geographic region of the Project; and
- Have extensive knowledge of the biology and ecology of sensitive species occurring and potential occurring within the Project site.
- Have specialized avian experience in the Imperial Valley (e.g., knowledge of nesting chronology, avian behavior) necessary to conduct nesting surveys and monitor buffers.

MM 4.12.1b Each CUP owner shall develop and implement a Worker Environmental Awareness Program (WEAP) prior to the start of construction. The WEAP shall be submitted to the Imperial County Planning and Development Services Department for review and approval prior to the issuance of building permits. The WEAP training shall be led by the qualified biologist(s) and shall cover the following:

- The potential presence and ecology of sensitive biological resources found on-site, such as potential jurisdictional waters and nesting avian species;
- Flagging/fencing of exclusion areas;
- Proper implementation of protective measures to avoid impacts to special-status species;
- The reasons, need, and method by which employees should report on wildlife mortality, follow nest management protocols, dispose of carcasses, comply with applicable regulations (including the consequences of noncompliance), and the appropriate agencies and personnel that should be contacted after incidents; and
- Other permit requirements and environmental issues.

All construction site personnel shall be required to attend the WEAP training in conjunction with hazard and safety training prior to working on-site.

Timing/Implementation: *Prior to and during Project construction.*
Enforcement/Monitoring: *Imperial County Planning and Development Services Department.*

MM 4.12.1c Each CUP owner shall comply with the following measures prior to and during construction. Compliance with these requirements shall be reflected on the Final Engineering Plans to be submitted for review and approval by the County of Imperial Public Works Department:

- All construction-related activities shall take place within the development footprint of the Project as defined by the final engineering plans. The anticipated impact areas, including staging areas, equipment access, and disposal or temporary placement of spoils, shall be delineated with staking and/or orange construction fencing prior to construction to avoid natural resources where possible. No construction-related activities shall occur outside of the designated impact area. All construction materials, staging, storage, dispensing, fueling, and maintenance activities shall be designated on construction maps and shall be situated a minimum of 50 feet from all drainages. Staging and temporary access shall occur on existing roadways whenever possible.
- Parking of vehicles shall occur within the fenced Project area or within previously disturbed areas prior to construction of the fencing, and away from sensitive habitats.
- Grading shall only occur where necessary and as specified by the Project's final engineering plans, and shall be avoided wherever possible to minimize the amount of ground disturbance. To the extent possible, Project layout and design shall generally follow existing contours of the Project site to minimize the amount of grading required.
- To the extent possible, nighttime construction shall be avoided. When activities must occur at night, all Project lighting (e.g., staging areas, equipment storage sites, roadway) shall be directed downward and away from natural vegetation communities. Light glare shields shall be used to reduce the extent of illumination into adjoining areas.
- Nighttime and daytime on-site construction vehicle speeds shall be restricted to 10 miles per hour and 20 miles per hour, respectively. Speed limit signs shall be posted throughout the site to remind construction workers of travel speed restrictions.
- Spoils, trash, and any construction-generated debris shall be removed to an approved off-site disposal facility. A trash abatement program shall be established. Trash and food items shall be contained in closed containers and removed daily to reduce the attraction of opportunistic predators such as common ravens, coyotes, and feral cats and dogs that may prey on sensitive species.
- When handling toxic substances, construction vehicles shall carry a Hazardous Material Spill Kit for use in the event of a spill. All construction personnel working on-site shall be trained in using these kits. Spill containment materials must be on-site or readily available for any equipment maintenance or refueling.

- Construction workers shall be prohibited from bringing domestic pets and firearms to the site.
- A SWPPP or equivalent shall be prepared prior to the start of construction to comply with applicable RWQCB storm water management provisions. The SWPPP or SWPPP equivalent document shall identify the design features and BMPs that shall be used to effectively manage drainage-related issues (e.g., erosion and sedimentation) during construction. Erosion control measures shall be regularly checked by inspectors, the qualified biologists, and/or resident engineer. Fencing and erosion control measures of all construction areas shall be inspected a minimum of once per week (refer to mitigation measure MM 4.11.1b in Section 4.11, Hydrology and Water Quality).
- All construction activities shall cease during heavy rains to prevent unnecessary erosion, runoff, and sedimentation, and shall not resume until conditions are suitable for the movement of equipment and materials.
- No planting or seeding of invasive plant species on the most recent version of the California Invasive Plant Council (Cal-IPC) California Invasive Plant Inventory for the Project region shall be permitted.
- To prevent indirect effects to sensitive natural resources from fugitive dust associated with construction of the Project, all active construction areas shall be watered down as necessary. All trucks hauling soil, sand, and other loose materials shall be covered or shall maintain at least 2 feet of free-board. All unpaved access roads, parking areas, and staging areas at construction sites shall have non-potable water or nontoxic soil stabilizers applied as needed.
- At the completion of construction, all construction-related materials shall be removed from the site.

Timing/Implementation: *Prior to and during Project construction.*
Enforcement/Monitoring: *Imperial County Planning and Development Services Department/Imperial County Department of Public Works.*

MM 4.12.1d Each CUP owner shall develop a Weed Management Plan prior to the commencement of construction activities. The Weed Management Plan shall include a variety of measures that shall be undertaken during construction and operation activities to prevent the introduction and spread of new weed species. The Weed Management Plan shall also address monitoring, plus educating personnel on weed identification and methods for avoiding and treating infestations. Weed control methods may include both physical and chemical control. All chemical applications require oversight by a holder of a valid Qualified Applicator's License (QAL) issued by the California Department of Pesticide Regulation (CADPR) Recommendations for use of chemical products will be made in writing by a Pest Control Advisor (PCA) with a valid CADPR license. Chemical products will be registered, non-restricted, general-use herbicides. Treatment applications will follow use and safety guidelines available on product labels. Typical active ingredients expected for chemical treatments are glyphosate and triclopyr. Glyphosate and triclopyr are found in broad-spectrum, systemic herbicides, and available in numerous products intended for control of post-emergent vegetation.

Chemical treatment of vegetation in and around aquatic or wetland features requires products approved for use within such habitats, as described on product labels.

The Weed Management plan shall be submitted to the Imperial County Planning and Development Services Department for review and approval prior to issuance of building permits.

Timing/Implementation: *Prior to issuance of building permits.*
Enforcement/Monitoring: *Imperial County Planning and Development Services Department.*

GENERAL OPERATIONS MEASURES - ALL CUPs (13-0036 THRU 13-0052)

MM 4.12.1e, is a general Project operation measure applicable to all sensitive, special status, and jurisdictional biological resources, including, but not limited to vegetation communities. As such, although discussed under the impact statement regarding vegetation communities, this measure is applicable to all operational activities throughout both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario, as further referenced under Impacts 4.12.2 through 4.12.14, below.

MM 4.12.1e. Each CUP owner shall develop and implement an Operation and Maintenance Worker Education Plan to advise personnel on general operations measures. The Worker Education Plan shall be submitted to the County of Imperial Planning and Development Services Department for review and approval prior to issuance of building permits. The following provisions shall be included in the Worker Education Plan and implemented throughout the operational lifespan of each CUP:

- Operation and maintenance personnel shall be prohibited from:
  - Harming, harassing, or feeding wildlife and/or collecting special-status plant or wildlife species.
  - Traveling (either on foot or in a vehicle) outside of Project footprint except on public roads.
  - Littering on the Project area.
  - Allowing persons not employed at the facility to remain on site after daylight hours
  - Exceeding normal nighttime operational noise or lighting levels.
- All operation and maintenance equipment, including cranes and personnel, shall stay within the permanent impact footprint of CUP boundaries, the Electrical Collector Line Corridor, or the Gen-Tie line corridor, except when not physically feasible or when necessary to protect human life or property. Operation and maintenance vehicles shall be parked in designated areas and away from sensitive habitats.
- Nighttime and daytime vehicle speeds within each CUP, the Electrical Collector Line Corridor, and the Gen-Tie line corridor shall be restricted to 10 miles per hour and 25 miles per hour, respectively. Speed limit signs shall be posted throughout the Project site to remind workers of travel speed restrictions.
- Each CUP, the Electrical Collector Line Corridor, and the Gen-Tie line corridor shall be kept clear of trash and other litter to reduce the attraction of opportunistic predators such as common ravens, coyotes, and feral dogs that may prey on sensitive species.

- Operation and maintenance employees shall maintain Hazardous Materials Spill Kits on-site. All operation and maintenance staff shall be trained in how to use Hazardous Materials Spill Kits in the event of a spill.
- Operation and maintenance employees shall be prohibited from bringing domestic pets and firearms to the site.
- The General Construction Permit shall specify post-construction storm water control standards, and preparation and implementation of a Long-Term Maintenance Plan for the retention/detention basins (refer to mitigation measure MM 4.11.1a in Section 4.11, Hydrology and Water Quality).
- Operation and maintenance activities at each CUP, the Electric Collector Line Corridor, and the Gen-Tie corridor shall be carried out in accordance with the Weed Management Plan identified under MM 4.12.1d.

Timing/Implementation: *Throughout operation of each CUP, the Electric Collector line Corridor, and the Gen-Tie corridor.*

Enforcement/Monitoring: *Imperial County Department of Planning and Development Services*

GENERAL DECOMMISSIONING MEASURES - ALL CUPs (13-0036 THRU 13-0052)

MM 4.12.1f, described below, is a general Project decommissioning measure applicable to all sensitive, special status, and jurisdictional biological resources, including, but not limited to vegetation communities. As such, although discussed under the impact statement regarding vegetation communities, this measure is applicable to all Project decommissioning activities throughout both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario, as further referenced under Impacts 4.12.2 through 4.12.14, below.

MM 4.12.1f Each CUP owner shall implement the following measures during decommissioning activities occurring within each CUP, the Electric Collector Line Corridor, and the Gen-Tie line corridor:

- All mitigation measures required during construction of the Project to avoid or minimize impacts to biological resources shall also be implemented during decommissioning activities.
- Decommissioning of the Project shall minimize new site disturbance and removal of native vegetation to the maximum extent possible.
- Topsoil removed during decommissioning shall be stockpiled and used as topsoil during restoration efforts associated with decommissioning disturbance.
- Soil shall be stabilized and revegetated with plant species characteristic of native species within adjacent habitats, except where immediately reclaimed as agriculture. Local seed sources shall be used where feasible.
- Surface water flows shall be restored to pre-disturbance conditions. Unnecessary stream crossings, roads, and pads shall be removed and revegetated. Erosion control measures shall be installed in all disturbance areas.
- Petroleum and chemical spills shall be remediated prior to the completion of decommissioning.

Timing/Implementation: *Throughout decommissioning of each CUP, the Electric Collector line Corridor, and the Gen-Tie corridor.*

Enforcement/Monitoring: *Imperial County Planning and Development Services Department.*

Significance After Mitigation

Sensitive vegetation communities include potential jurisdictional waters, such as arrow weed scrub, drains and canals, open water, and tamarisk scrub at CUPs 13-0037, 13-0038, 13-0039, 13-0040, 13-0042, 13-0045, 13-0046, 13-0047 and 13-0049. Upon implementation of mitigation measures MM 4.12.1a, MM 4.12.1b, MM 4.12.1c, MM 4.12.1d and MM 4.11.1b (in Section 4.11, Hydrology and Water Quality), as well as Applicant proposed Measures/Project Design Features, potential construction-related direct and indirect impacts to sensitive riparian communities at CUPs 13-0037, 13-0038, 13-0039, 13-0040, 13-0042, 13-0045, 13-0046, 13-0047 and 13-0049 would be reduced to **less than significant** (AECOM 2014e, p. 4-11). Upon implementation of mitigation measures MM 4.12.1e and MM 4.11.1b (in Section 4.11, Hydrology and Water Quality), as well as Applicant proposed Measures/Project Design Features, potential operation-related indirect impacts to sensitive vegetation communities adjacent to CUPs 13-0037, 13-0038, 13-0039, 13-0040, 13-0042, 13-0045, 13-0046, 13-0047 and 13-0049 would be reduced to **less than significant** (AECOM 2014e, p. 4-63). Upon implementation of mitigation measure MM 4.12.1f, potential indirect decommissioning impacts to sensitive vegetation communities would be reduced to **less than significant** (AECOM 2014e, p. 4-69). Thus, impacts to sensitive vegetation communities would be reduced to less than significant for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Impacts to Jurisdictional Areas

Impact 4.12.2 Construction, operation and decommissioning of CUPs 13-0037, 13-0038, 13-0039, 13-0040, 13-0042, 13-0043, 13-0046, 13-0047, and 13-0051 could result in direct and indirect impacts to potential State and Federal jurisdictional waters and wetlands. This is considered a **potentially significant impact.**

This impact discussion describes potential direct and indirect impacts to jurisdictional waters and wetlands mapped within the BSA. Direct impacts described in this discussion are applicable to CUP areas 13-0037, 13-0038, 13-0039, 13-0040, 13-0042, 13-0043, 13-0046, 13-0047, and 13-0051. Indirect impact impacts described in this discussion are applicable to all CUP areas.

CUPS 13-0037, 13-0038, 13-0039, 13-0040, 13-0042, 13-0043, 13-0046, 13-0047, and 13-0051

Construction

Direct Impacts

Construction associated with CUPs 13-0037, 13-0038, 13-0039, 13-0040, 13-0042, 13-0043, 13-0046, 13-0047, and 13-0051 would result in varying levels of permanent impacts to potential jurisdictional WUS and WS under the purview of USACE, RWQCB, and CDFW (see **Table 4.12-14** and **Figure 4.12-7 through Figure 4.12-7k**). Construction associated with CUPs 13-0037, 13-0038, 13-0039, 13-0040, 13-0042, 13-0043, 13-0046, 13-0047, and 13-0051 would also result in varying levels of permanent impacts to potential jurisdictional waters exclusively under the purview of the CDFW. Permanent impacts to jurisdictional waters and wetlands would result from upgrading vehicular crossings to adequate size to accommodate equipment access. Permanent impacts would also result from installation of new crossings over jurisdictional features (AECOM 2014e, p. 4-11).

As shown in **Table 4.12-14**, construction of CUPs 13-0037, 13-0039, 13-0039, 13-0042, 13-0043, 13-0046, 13-0047 and 13-0051 would result in direct impacts to 27.779 acres of jurisdictional waters and wetlands of the U.S. and State, and well as 19.829 acres of CDFW jurisdictional riparian areas. Therefore, a **potentially significant** direct impact to jurisdictional waters at CUPs 13-0037, 13-0039, 13-0039, 13-0042, 13-0043, 13-0046, 13-0047 and 13-0051 would occur as a result of construction-related activities.

Indirect Impacts

Construction associated with CUPs 13-0037, 13-0038, 13-0039, 13-0040, 13-0042, 13-0043, 13-0046, 13-0047 and 13-0051 would result in potential indirect impacts to jurisdiction waters and wetlands in relation to off-site erosion and sedimentation resulting from grading activities, airborne dust from construction vehicle travel on dirt access roads, grading, trenching, and other ground-disturbing activities (AECOM 2014e, p. 4-12). Therefore, a **potentially significant** indirect impact to jurisdictional waters at CUPs 13-0037, 13-0039, 13-0039, 13-0042, 13-0043, 13-0046, 13-0047 and 13-0051 would occur as a result of construction-related activities.

Operation

Direct Impacts

Operation of all CUPs (13-0036 thru 13-0052) is not expected to include activities occurring within potential jurisdictional waters and wetlands (AECOM 2014e, p. 4-11). Therefore, **no direct impacts** to jurisdictional waters and wetlands are expected to occur during operation of CUPs 13-0037, 13-0039, 13-0039, 13-0042, 13-0043, 13-0046, 13-0047 and 13-0051.

Indirect Impacts

Potential indirect impacts to jurisdictional waters and wetlands associated with operation of all CUPs (13-0036 thru 13-0052) include increased human use and the potential for long-term unauthorized trespass, operation-generated fugitive dust, erosion, sedimentation, and storm water contaminant runoff, as well as the potential introduction and proliferation of invasive nonnative plant species. Herbicide used during control of non-native plant species has potential to inadvertently enter jurisdictional waters and wetlands. However, herbicides are regularly used during agriculture activities and herbicide use within each CUP area would decrease when agriculture activities cease (AECOM 2014e, p. 4-12). Therefore, **potentially significant** indirect impacts to jurisdictional waters would occur during operation of CUPs 13-0037, 13-0039, 13-0039, 13-0042, 13-0043, 13-0046, 13-0047 and 13-0051.

Electric Collector Line Corridor

No jurisdictional waters are located within the area proposed for Project improvements within the Electric Collector Line Corridor. Therefore, **no impact** to jurisdictional waters would occur during operation of CUPs 13-0037, 13-0038, 13-0039, 13-0040, 13-0042, 13-0043, 13-0046, 13-0047 and 13-0051.

Mount Signal Solar Farm Project Gen-Tie

No jurisdictional waters are located within the area proposed for Project improvements within the Mount Signal Solar Farm Project Gen-Tie corridor. Therefore, **no impact** to jurisdictional waters would occur during operation of CUPs 13-0037, 13-0038, 13-0039, 13-0040, 13-0042, 13-0043, 13-0046, 13-0047 and 13-0051.

Decommissioning

Solar Energy Center

Decommissioning activities would result in indirect impacts to jurisdictional waters and wetlands similar to those described in association with Project construction at CUPs 13-0037, 13-0038, 13-0039, 13-0040, 13-0042, 13-0043, 13-0046, 13-0047, and 13-0051. Direct impacts to jurisdictional waters and wetlands

are not anticipated to occur during decommissioning of CUPs 13-0037, 13-0038, 13-0039, 13-0040, 13-0042, 13-0043, 13-0046, 13-0047, and 13-0051. Indirect impacts to jurisdictional waters and wetlands at CUPs 13-0037, 13-0038, 13-0039, 13-0040, 13-0042, 13-0043, 13-0046, 13-0047 and 13-0051 would be temporary because the solar field site parcels would be restored to pre-Project soil conditions at the completion of decommissioning (AECOM 2014e, p. 69). Therefore, indirect impacts to jurisdictional waters and wetlands during decommissioning activities adjacent to CUPs 13-0037, 13-0038, 13-0039, 13-0040, 13-0042, 13-0043, 13-0046, 13-0047 and 13-0051 would be considered **potentially significant**.

Electric Collector Line Corridor

See discussion below, under Impact 4.12.2, "Full Build-out Scenario/All CUPs (13-0036 thru 13-0052)."

Mount Signal Solar Farm Project Gen-Tie

See discussion below, under Impact 4.12.2, "Full Build-out Scenario/All CUPs (13-0036 thru 13-0052)."

FULL BUILD-OUT SCENARIO/ALL CUPs (13-0036 THRU 13-0052)

Construction

Direct Impacts

Solar Energy Center

As discussed above, construction associated with CUPs 13-0037, 13-0038, 13-0039, 13-0040, 13-0042, 13-0043, 13-0046, 13-0047, and 13-0051 would result in varying levels of permanent impacts to potential jurisdictional WUS and WS regulated by USACE, RWQCB, and/or CDFW (see **Table 4.12-14** and **Figure 4.12-7** thru **Figure 4.12-7k**). No other construction impacts to potential jurisdictional WUS and WS are anticipated to occur. However, CUPs 13-0037, 13-0039, 13-0039, 13-0042, 13-0043, 13-0046, 13-0047 and 13-0051 are part of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phase CUP Scenario (AECOM 2014e, p. 4-11). Therefore, construction of the Solar Energy Center would result in a **potentially significant** direct impact to jurisdictional waters and wetlands of the U.S. and state for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Electric Collector Line Corridor

Electric Collector Line Corridor pole structures would not be located within jurisdictional waters and wetlands. Therefore, **no direct impact** to jurisdictional waters and wetlands would result from installation of pole structures (AECOM 2014e, p. 4-11) for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mount Signal Solar Farm Project Gen-Tie Line

The Mount Signal Solar Farm Project Gen-Tie line pole structures that would be upgraded or installed are not located within jurisdictional waters and wetlands. Therefore, **no direct impact** to jurisdictional waters and wetlands would result from construction work within the Mount Signal Solar Farm Project Gen-Tie line corridor (AECOM 2014e, p. 4-11).

Full Build-out Scenario/All CUPs (13-0036 thru 13-0052)

Overall, because CUPs 13-0037, 13-0038, 13-0039, 13-0042, 13-0043, 13-0046, 13-0047 and 13-0051 are part of both the Full Build-out Scenario and Phased CUP Scenario, construction would result in a **potentially significant** direct impact to jurisdictional waters and wetlands of the U.S. and state. No other direct impacts to jurisdictional waters or wetlands would occur as a result of construction both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario (AECOM 2014e, p. 4-11).

Indirect Impacts

Solar Energy Center

Potential indirect impacts to jurisdictional waters and wetlands are expected to be similar for construction of the Solar Energy Center at all CUPs (13-0036 thru 13-0052), the Electric Collector Line Corridor improvements, and the Mount Signal Solar Farm Project upgrades (i.e. Full Build-out Scenario). Off-site erosion and sedimentation resulting from grading activities associated with construction of the Full Build-out Scenario have the potential to result in temporary indirect impacts to jurisdictional waters and wetlands. Airborne dust may result from construction vehicle travel on dirt access roads, grading, trenching, and other ground-disturbing activities and has the potential to result in temporary indirect impacts to jurisdictional waters and wetlands. Herbicide used during control of non-native plant species has potential to inadvertently enter jurisdictional waters and wetlands; however, herbicides are regularly used during existing agriculture activities and herbicide use within both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario would decrease when agriculture activities cease (AECOM 2014e, p. 4-12).

Extending the duration of construction activities to develop the 17 individual CUPs over a 10-year period as opposed to at one time (i.e. the Phased CUP Scenario) are assumed to have a similar level of indirect impact as would occur if the Full Build-out Scenario were implemented, given that impacts (e.g., dust, non-native species introduction) would be extended over a greater period of time. However, if the Full Build-out Scenario were implemented, the impacts would be more intense but shorter in duration than the Phased CUP Scenario. Therefore, **potentially significant** indirect impacts to jurisdictional waters would occur during construction of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Operation

Direct Impacts

Operation of the Solar Energy Center at each CUP (13-0036 thru 13-0052) is not expected to include activities occurring within potential jurisdictional waters and wetlands. Therefore, **no direct impacts** to jurisdictional waters and wetlands are expected to occur during operation of the Solar Energy Facilities for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Indirect Impacts

Potential indirect impacts to jurisdictional waters and wetlands associated with Project operation include increased human use and the potential for long-term unauthorized trespass, operation-generated fugitive dust, erosion, sedimentation, and storm water contaminant runoff, as well as the potential introduction and proliferation of invasive nonnative plant species. Herbicide used during control of non-native plant species has potential to inadvertently enter jurisdictional waters and wetlands. However, herbicides are regularly used during agriculture activities and herbicide use within solar field site parcel would decrease when agriculture activities cease. Therefore, **potentially significant** indirect impacts to jurisdictional waters would occur during operation of the Solar Energy Facilities for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Decommissioning

Full Build-out Scenario/All CUPs (13-0036 thru 13-0052)

Decommissioning activities would result in indirect impacts to jurisdictional waters and wetlands. Impacts would be indirect because biological resources would likely only remain within areas adjacent

(i.e., off-site) to the Project footprint. Indirect impacts to jurisdictional waters and wetlands throughout the Full Build-out Scenario would be temporary because each CUP would be restored to pre-Project soil conditions at the completion of decommissioning. Further, direct impacts to jurisdictional waters and wetlands that occurred during Project construction would have been mitigated at that time. Indirect impacts to jurisdictional waters and wetlands of the U.S. and state would be **potentially significant** (AECOM 2014e, p. 4-69) during decommissioning activities for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mitigation Measures

JURISDICTIONAL WATERS AND WETLANDS MEASURES - ALL CUPs (13-0036 THRU 13-0052)

MM 4.12.2 Each CUP owner shall implement the following measures prior to and during construction activities at each CUP, the Electric Collector line Corridor and Gen-Tie line corridor to avoid construction-related impacts to jurisdictional waters and wetlands:

- Each CUP and Project design shall avoid direct and indirect impacts to jurisdictional waters to the greatest extent feasible. Construction within jurisdictional waters and/or wetlands shall be subject to prior authorization by USACE, RWQCB, and CDFW.
- All equipment operating in and near jurisdictional waters or wetlands shall be in good working condition and free of leaks. All vehicles shall have drip pans during storage to contain minor spills and drips. No refueling or storage shall take place within 100 feet of a drainage channel or structure. In addition, all maintenance crews working with heavy equipment shall be trained in spill containment and response.
- Discharges shall not permanently restrict or impede the passage of normal or expected high flows, or cause the permanent relocation or diversion of the flows.
- Where turbidity or erosion occurs or is expected to occur from drainage structures, biofilters, detention basins or other appropriate drainage catchment structures shall be installed where flow conveyance occurs from the Project directly into a jurisdictional area.
- Temporary impacts to jurisdictional waters and wetlands will be recontoured to pre-construction conditions. Temporary impacts to vegetated jurisdictional waters and wetlands will also be revegetated with appropriate native vegetation or non-native compatible with the landscape palette.
- Permanent impacts to jurisdictional waters and wetlands shall be mitigated either through on-site and/or off-site re-establishment and/or enhancement of jurisdictional waters and wetlands or through an approved-mitigation bank or in-lieu fee program, if one is available. The type of mitigation, mitigation location, and the final mitigation ratios will be established during the permit process for the Project's USACE Section 404 permit, the RWQCB Section 401 Water Quality Certification, and a CDFW Streambed Alteration Agreement. The federal agencies have published guidance on mitigation, i.e., the final rule for Compensatory Mitigation for Losses to Aquatic Resources that was issued by USACE and USEPA. Issuance of required permits/authorizations and preparation of a detailed Wetland/Waters Mitigation Plan to be submitted for

review and approval by the USACE, RWQCB, and CDFW before impacts to jurisdictional waters.

- Each CUP owner shall comply with additional measures identified during permitting through the USACE, RWQCB, and CDFW. In addition, the determination of whether the Project may be permitted under USACE's NWP program, or whether an individual permit shall be required, shall be determined formally as part of the CWA Section 404 permit process. To qualify for an NWP, the proposed action and the associated unavoidable impacts to jurisdictional waters based on final project designs must satisfy all terms and conditions of the applicable NWP, as well as all general conditions and any relevant regional conditions of the NWP program (refer also to mitigation measure 4.11.1a).
- The Wetland/Waters Mitigation Plan shall describe proposed on-site and off-site mitigation. For all habitat restoration proposed, this plan shall include details regarding site preparation (e.g., grading), planting specifications, and irrigation design, as well as maintenance and monitoring procedures. The plan shall also outline yearly success criteria and remedial measures should the mitigation effort fall short of the success criteria, and a strategy for long-term mitigation site management. Alternatively, mitigation obligations may be satisfied by participating in a fee-based mitigation program (e.g., a wetland mitigation bank) in which case, long-term management for such mitigation shall be covered under the terms of the formal banking agreement or by purchasing appropriate mitigation credits from a regulatory approved bank.

Timing/Implementation: *Prior to and during construction; Prior to issuance of a building permit.*

Enforcement/Monitoring: *County of Imperial Planning and Development Services Department / USACE / RWQCB / CDFW.*

In addition, compliance with mitigation measures MM 4.12.1a, MM 4.12.1b, MM 4.12.1c, MM 4.12.1d, MM 4.12.1e, MM 4.12.1f, and MM 4.11.1a and MM 4.11.1b (in Section 4.11, Hydrology and Water Quality) would serve to mitigate impacts to jurisdictional waters and wetlands.

Significance After Mitigation

The permanent removal of, and adverse indirect impacts to, federal protected wetlands or to any state-protected jurisdictional wetlands or waters not subject to federal regulation through direct removal, filling, hydrological interruption, or other means would be considered a significant impact. Upon implementation of mitigation measures MM 4.12.1a, MM 4.12.1b, MM 4.12.1c, MM 4.12.1d, MM 4.12.2, MM 4.11.1a and MM 4.11.1b (in Section 4.11, Hydrology and Water Quality), as well as Applicant proposed Measures/Project Design Features, potential construction-related direct and indirect impacts to jurisdictional waters and wetlands at CUPs 13-0037, 13-0038, 13-0039, 13-0042, 13-0043, 13-0046, 13-0047 and 13-0051 and potential construction-related indirect impacts associated with both the Full Build-out Scenario and each individual CUP (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario would be reduced to **less than significant** (AECOM 2014e, p. 4-12). Upon implementation of mitigation measures MM 4.12.1e, MM 4.12.2 and MM 4.11.1b (in Section 4.11, Hydrology and Water Quality), as well as Applicant proposed Measures/Project Design Features, potential indirect operational impacts to jurisdictional waters and wetlands throughout both the Full Build-out Scenario and each individual CUP (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario would be reduced to **less than significant** (AECOM 2014e, p. 4-12 and 4-69). Upon implementation of mitigation measures MM 4.12.1f, as well as Applicant proposed Measures/Project Design Features, potential

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TABLE 4.12-14
ANTICIPATED PERMANENT DIRECT IMPACTS TO POTENTIAL JURISDICTIONAL WATERS OF THE U.S. AND STATE FOR THE SOLAR ENERGY CENTER BY CUP AREA (ACRES)[1]

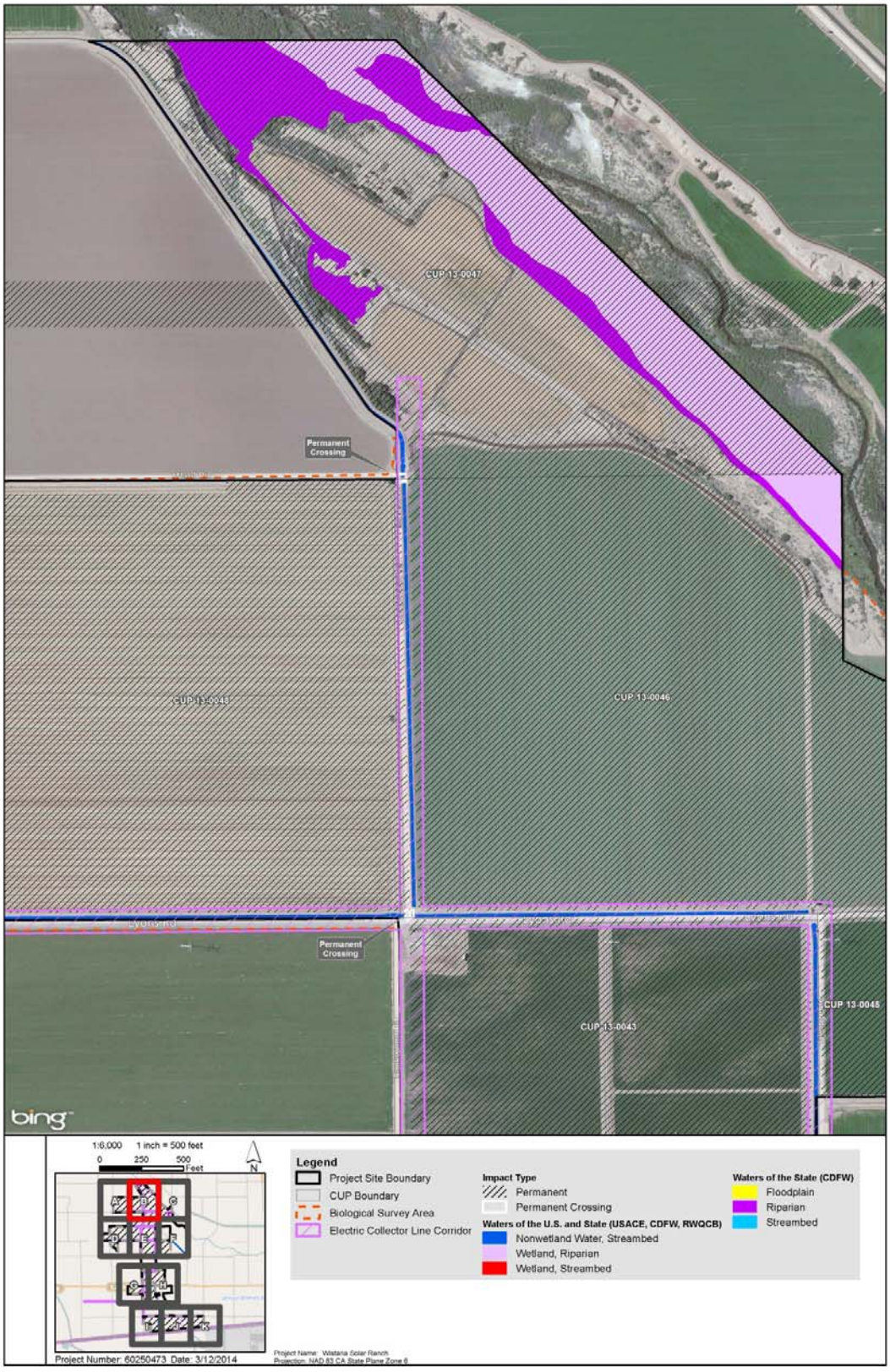
Type of Jurisdictional Waters	CUP Area																	Full Build-out
	13-0036	13-0037	13-0038	13-0039	13-0040	13-0041	13-0042	13-0043	13-0044	13-0045	13-0046	13-0047	13-0048	13-0049	13-0050	13-0051	13-0052	
Jurisdictional Waters of the U.S. and State																		
Wetland	-	0.024	0.039	0.014	0.009	-	<0.001	-	-	-	-	27.640	-	-	-	-	-	27.725
Non-wetland Waters	-	-	0.014	<0.001	-	-	0.010	0.014	-	-	0.006	0.008	-	-	-	0.001	-	0.054
Subtotal Jurisdictional Waters of the U.S. and State	**-**	**0.024**	**0.053**	**0.014**	**0.009**	**-**	**0.010**	**0.014**	**-**	**-**	**0.006**	**27.648**	**-**	**-**	**-**	**0.001**	**-**	**27.779**
Jurisdictional Waters Exclusively CDFW																		
Riparian	-	0.046	-	-	0.011	-	-	-	-	-	-	19.772	-	-	-	-	-	19.829
Other Waters	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal Jurisdictional Waters of the State	**-**	**0.046**	**-**	**-**	**0.011**	**-**	**-**	**-**	**-**	**-**	**-**	**19.772**	**-**	**-**	**-**	**-**	**-**	**19.829**
TOTAL JURISDICTIONAL WATERS	**-**	**0.070**	**0.053**	**0.014**	**0.020**	**-**	**0.010**	**0.014**	**-**	**-**	**0.006**	**47.420**	**-**	**-**	**-**	**0.001**	**-**	**47.608**

Source: AECOM 2014e, p. 4-13.
[1]Values may not sum due to rounding after summation.

Source: AECOM 2014e.

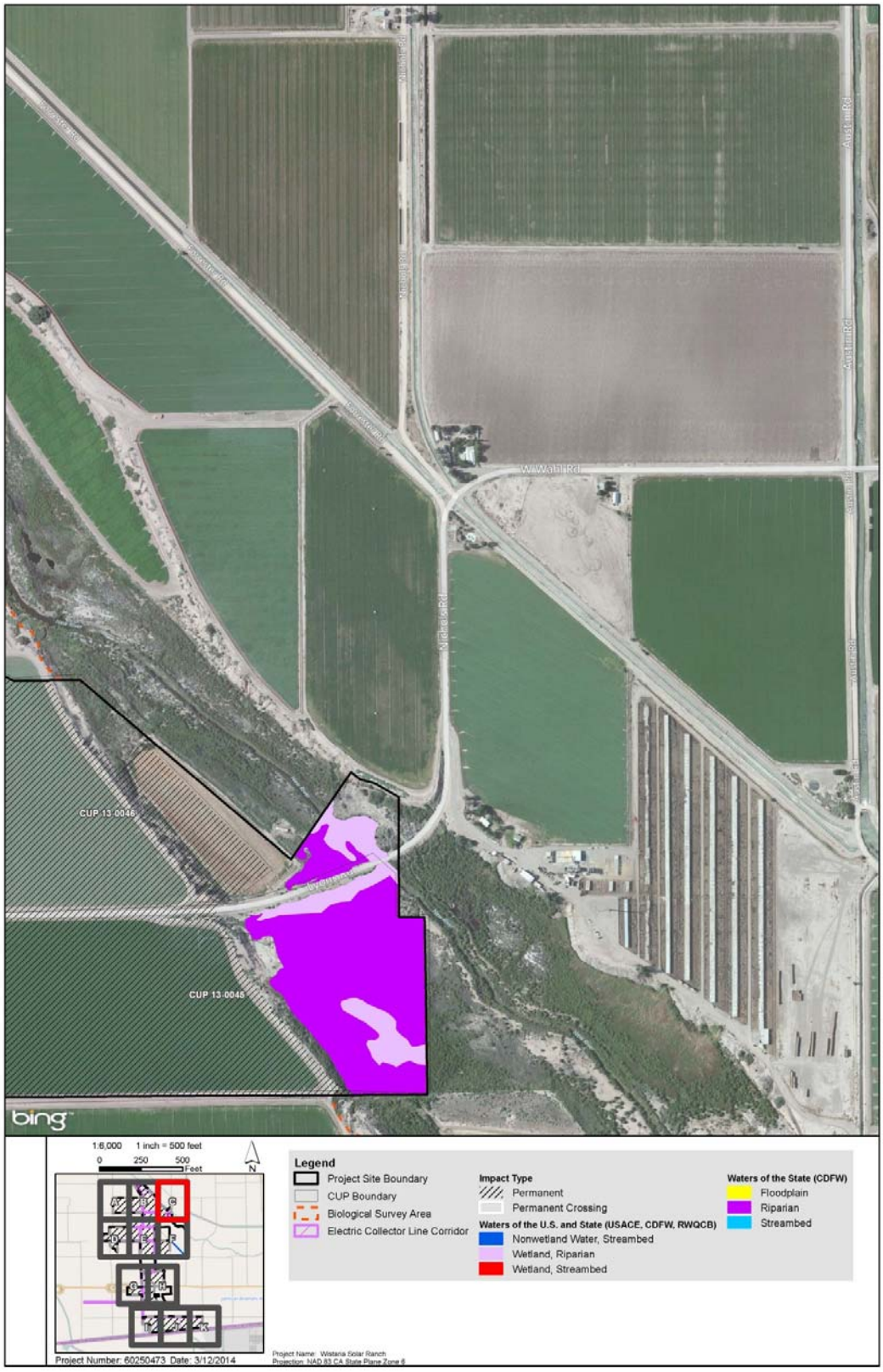
FIGURE 4.12-7A

IMPACTS TO JURISDICTIONAL WATERS OF THE U.S. AND STATE DETAIL MAP – CUPS 13-0048 &13-0049



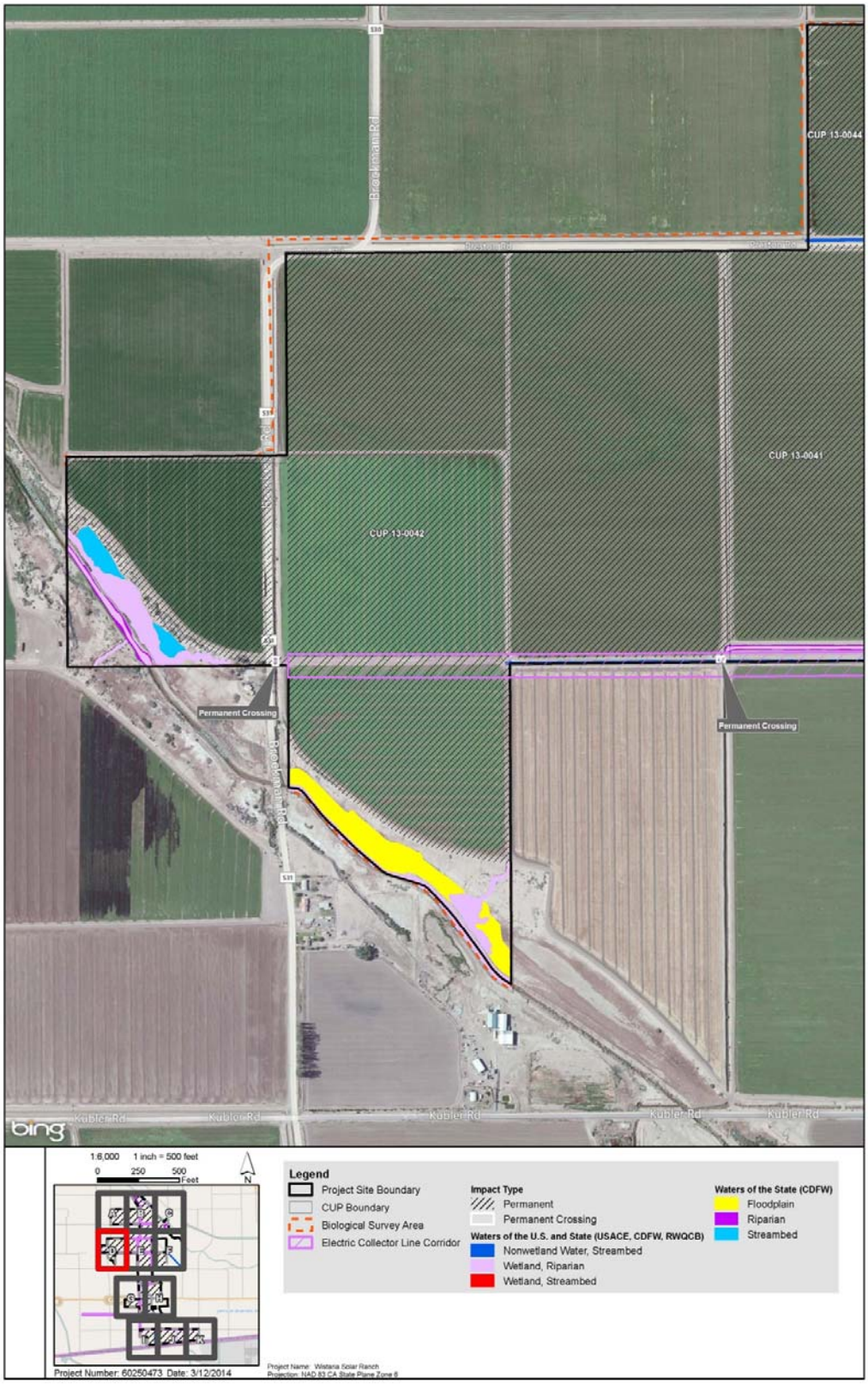
Source: AECOM 2014e.

FIGURE 4.12-7B
IMPACTS TO JURISDICTIONAL WATERS OF THE U.S. AND STATE DETAIL MAP
CUPS 13-0043 & 13-0045 THRU 13-0048



Source: AECOM 2014e.

FIGURE 4.12-7C
IMPACTS TO JURISDICTIONAL WATERS OF THE U.S. AND STATE DETAIL MAP - CUPS 13-0045 & 13-0046

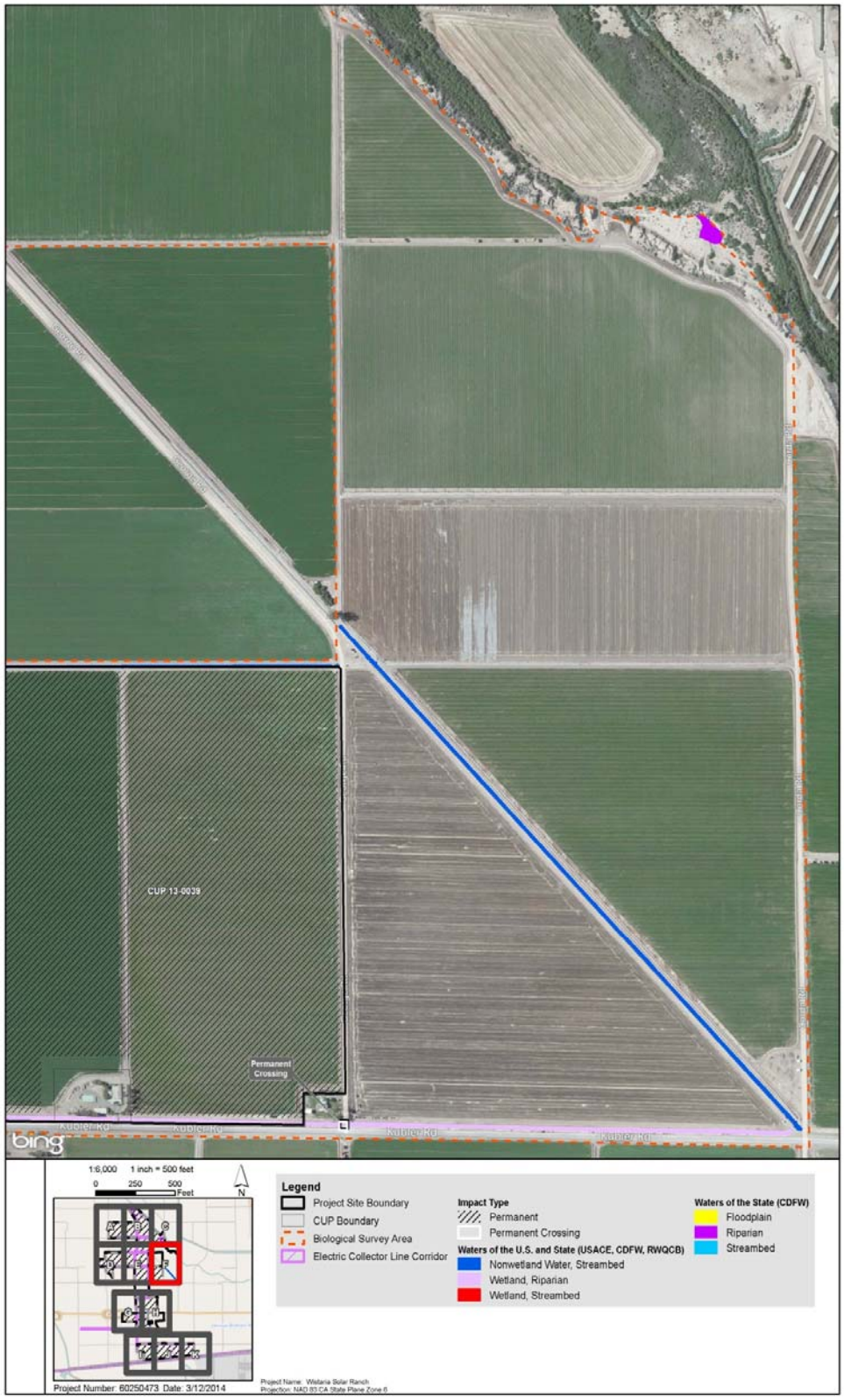


Source: AECOM 2014e.

FIGURE 4.12-7D
IMPACTS TO JURISDICTIONAL WATERS OF THE U.S. AND STATE DETAIL MAP
CUPS 13-0041, 13-0042 & 13-0044

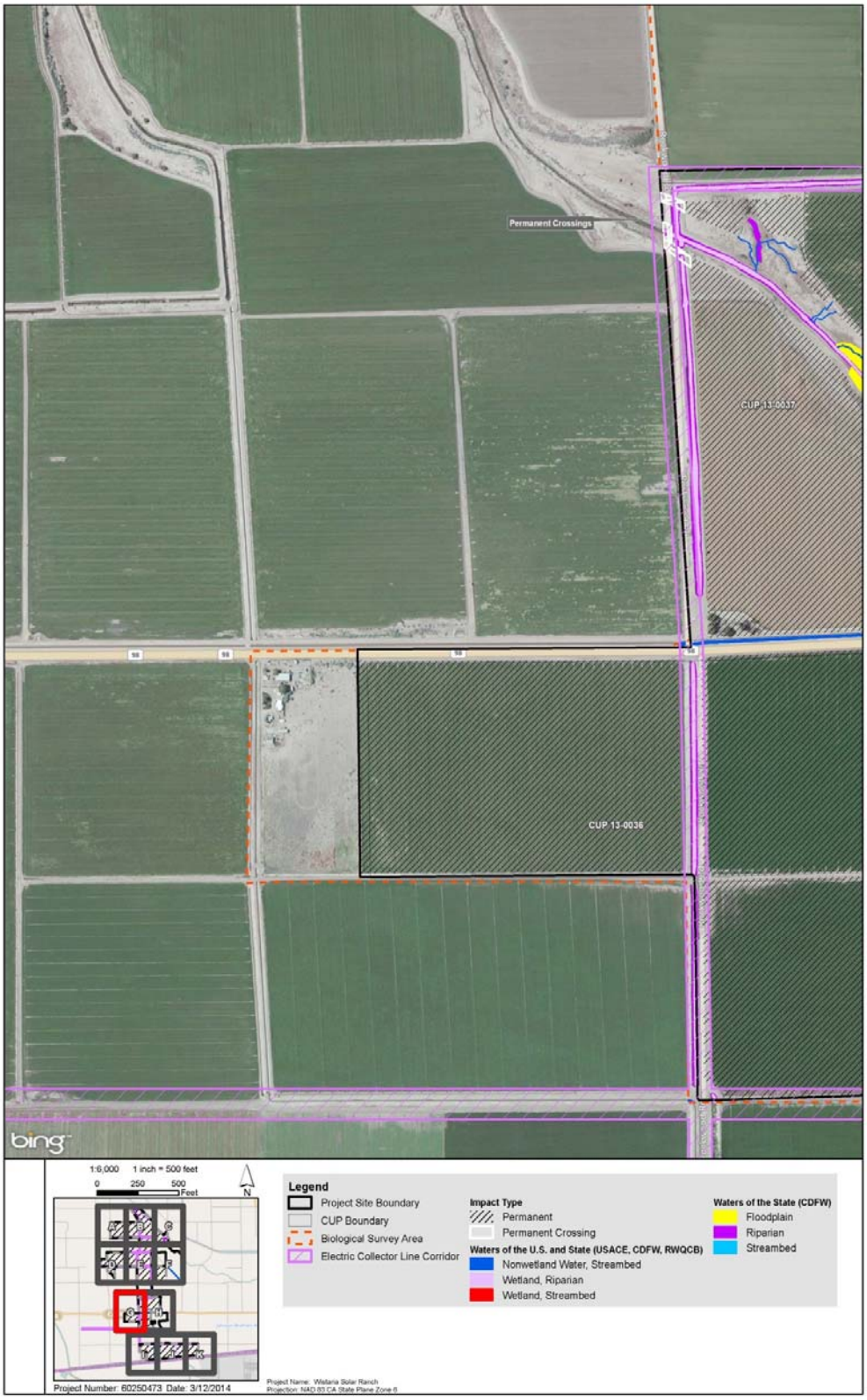
Source: AECOM 2014e.

FIGURE 4.12-7E
IMPACTS TO JURISDICTIONAL WATERS OF THE U.S. AND STATE DETAIL MAP
CUPS 13-0038 THRU 13-0041, 13-0043 & 13-0044



Source: AECOM 2014e.

FIGURE 4.12-7F
IMPACTS TO JURISDICTIONAL WATERS OF THE U.S. AND STATE DETAIL MAP - CUP 13-0039

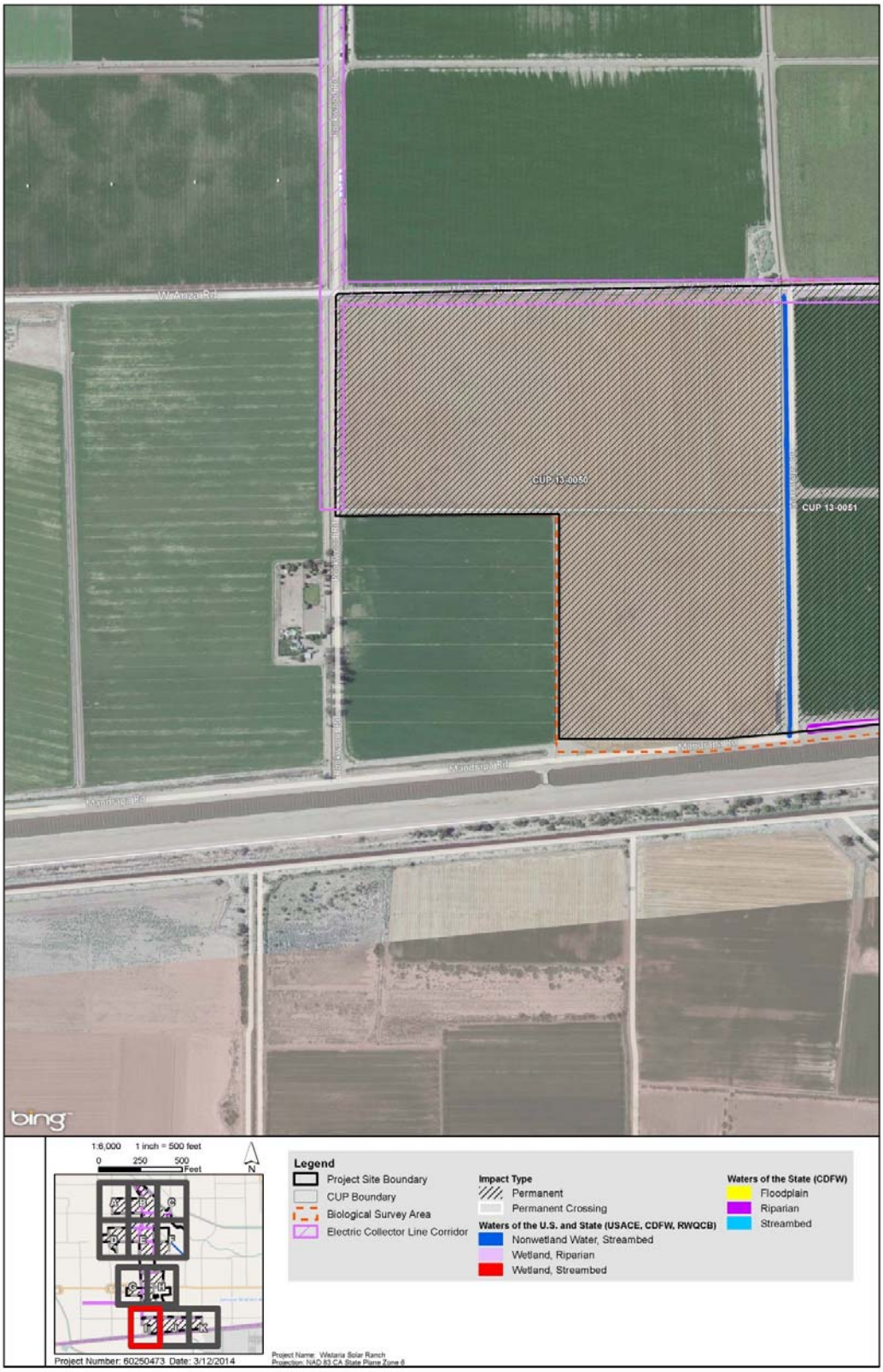


Source: AECOM 2014e.

FIGURE 4.12-7G
JURISDICTIONAL WATERS OF THE U.S. AND STATE DETAIL MAP – CUPS 13-0036 & 13-0037

Source: AECOM 2014.

FIGURE 4.12-7H
JURISDICTIONAL WATERS OF THE U.S. AND STATE DETAIL MAP – CUPS 13-0036 & 13-0037

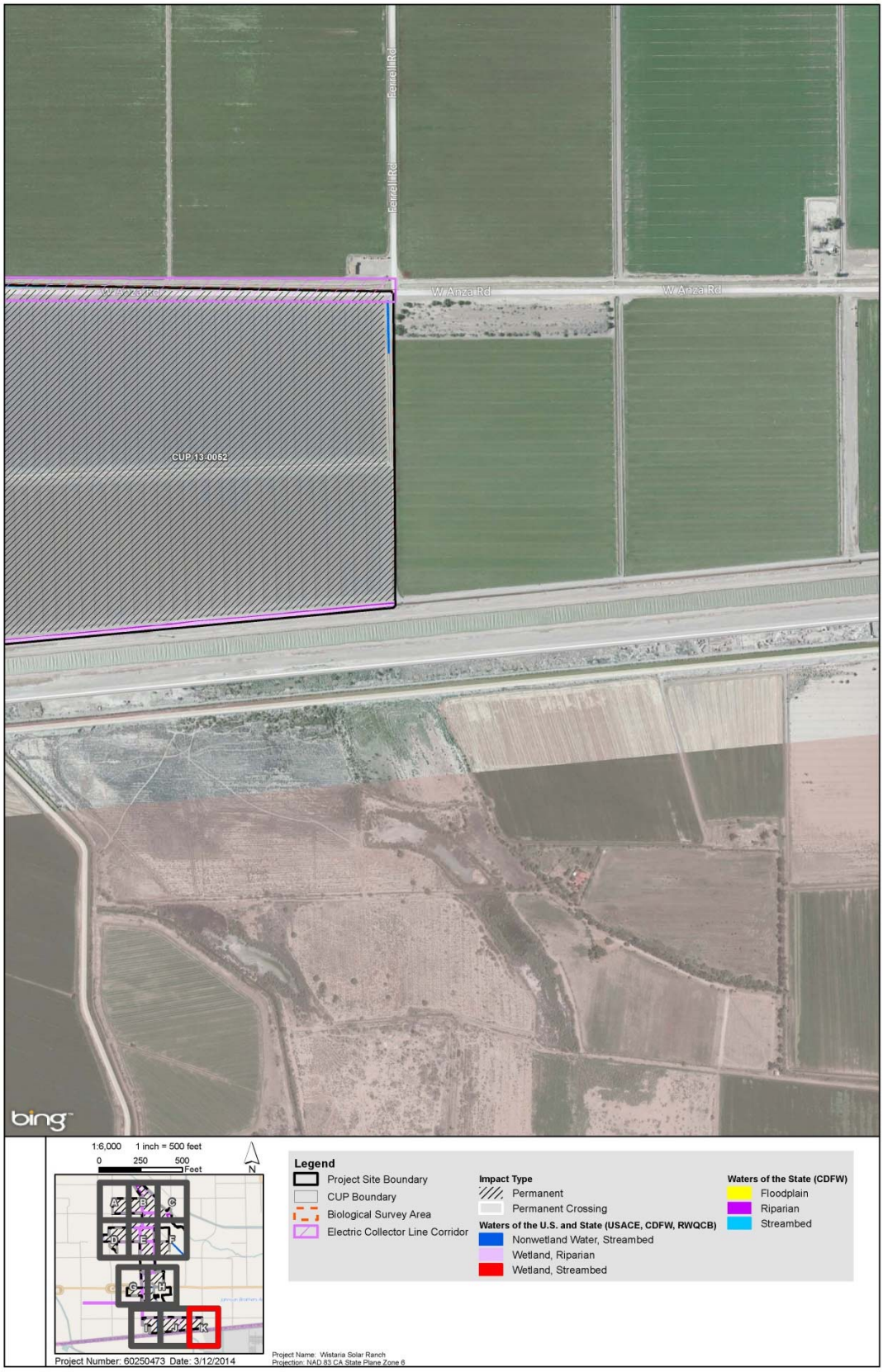


Source: AECOM 2014.

FIGURE 4.12-7I
JURISDICTIONAL WATERS OF THE U.S. AND STATE DETAIL MAP – CUPS 13-0050 & 13-0051

Source: AECOM 2014e.

FIGURE 4.12-7J
JURISDICTIONAL WATERS OF THE U.S. AND STATE – CUPS 13-0051 & 13-0052



Source: AECOM 2014e.

FIGURE 4.12-7K
JURISDICTIONAL WATERS OF THE U.S. AND STATE DETAIL MAP – CUP 13-0052

decommissioning-related indirect impacts to jurisdictional waters and wetlands would be reduced to **less than significant** (AECOM 2014e, p. 4-12 and 4-69) throughout both the Full Build-out Scenario and each individual CUP (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Impacts to Special Status Plant Species

Impact 4.12.3 Construction of CUP 13-0047 could directly affect special-status plant species during clearing and grading. Construction, operation and decommissioning of the Solar Energy Center developed on each individual CUP (13-0036 through 13-0052) could also result in indirect impacts to non-listed special-status plant species due to long-term unauthorized trespass, operation-generated fugitive dust, erosion, sedimentation, storm water contaminant runoff, and the potential introduction and proliferation of invasive non-native plant species. Therefore, a **potentially significant impact** to non-listed special-status plant species could occur throughout the Solar Energy Center at each individual CUP (13-0036 through 13-0052)**.**

CUP 13-0047

CUP 13-0047 was added to the Project subsequent to the completion of the field rare plant habitat assessment. Based on desktop analysis, non-listed special-status plant species may have some potential to occur within the boundaries of CUP 13-0047 due to the presence of sandy or rocky areas along the edge of the New River.

Construction

Federally and State-listed Plant Species

Solar Energy Center

CUP 13-0047 was added to the Project subsequent to the completion of the AECOM's field rare plant assessment. A desktop analysis revealed that no federally or state-listed plant species have potential to occur within CUP 13-0047 due to the lack suitable habitat, geography, and known species' ranges based on reference populations and historical surveys conducted in the region. Thus, no direct or indirect impacts are expected within CUP 13-0047 (AECOM 2014e, p. 4-12). Therefore, overall, **no impact** to federally listed or state-listed plants would occur as a result of construction of CUP 13-0047.

Non-listed Special-Status Plant Species

Solar Energy Center

Potential construction-related direct impacts in the form of permanent removal during grading and clearing would occur if non-listed special-status plant species were present in CUP 13-0047. Potential temporary indirect impacts to non-listed special-status plant species at CUP 13-0047 would arise from runoff and sedimentation, erosion, fugitive dust, and unauthorized access outside of the CUP 13-0047 footprint. Herbicide used during control of non-native plant species has potential to be inadvertently applied to adjacent non-listed special-status plants; however, herbicides are regularly used during existing agriculture activities on the solar field site parcels and herbicide use within each CUP 13-0047 would decrease when agriculture activities cease. Therefore, construction of CUP 13-0047 would result in **potentially significant** direct and indirect impacts to non-listed special-status plant species (AECOM 2014e, p. 4-39).

Operation

Direct Impacts

Solar Energy Center

All operation activities associated with CUP 13-0047 would occur within areas permanently cleared of vegetation during Project construction. Therefore, **no direct impact** to special-status plant species would result from operation of CUP 13-0047 (AECOM 2014e, p. 4-63).

Indirect Impacts

Solar Energy Center

CUP 13-0047 was added to the Project subsequent to the completion of the field rare plant habitat assessment. Based on desktop analysis, non-listed special-status plant species may have some potential to occur in areas adjacent to the Project footprint due to the presence of sandy or rocky areas along the edge of the New River. Potential indirect impacts to special-status plants associated with operation include trampling of plants due to long-term unauthorized trespass, operation-generated fugitive dust, erosion, sedimentation, storm water contaminant runoff, and the potential introduction and proliferation of invasive nonnative plant species. Herbicide used during control of non-native plant species of the solar field site parcels has potential to be inadvertently applied to adjacent non-listed special-status plants; however, herbicides are regularly used during agriculture activities and herbicide use within CUP 13-0047 would decrease when agriculture activities cease. These indirect impacts have the potential to result in off-site habitat degradation that may adversely affect the ability of special-status plants to thrive and reproduce (AECOM 2014e, p. 4-64). Therefore, a **potentially significant** indirect impact to non-listed special-status plant species would result from operation of CUP 13-0047 (AECOM 2014e, p. 4-64).

Decommissioning

Solar Energy Center

Decommissioning activities at CUP 13-0047 would result in indirect impacts to non-listed special-status plant species similar to those described in association with construction. Impacts would be indirect because biological resources would likely only remain within areas adjacent (i.e., off-site) to CUP 13-0047. Indirect impacts at CUP 13-0047 to non-listed special-status plant species would be temporary because the site would be restored to pre-Project soil conditions following completion of decommissioning. Decommissioning is generally considered beneficial to biological resources. However, potential indirect impacts to non-listed special-status plant species at CUP 13-0047 would be considered **potentially significant** (AECOM 2014e, p. 4-69) during decommissioning activities.

FULL BUILD-OUT SCENARIO/ALL CUPs (13-0036 THRU 13-0052)

Construction

Federally and State-listed Plant Species

Solar Energy Center

No federally listed or state-listed plants are expected to occur within the Solar Energy Center at each CUPs. Therefore, **no impact** to federal or state-listed plant species would result from construction of the Solar Energy Center (AECOM 2014e, p. 4-12) for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Electric Collector Line Corridor

No federally listed or state-listed plants are expected to occur within the Electric Collector Line Corridor. Therefore, **no impact** to federal or state-listed plant species would result from construction of Project improvements within the Electric Collector Line Corridor (AECOM 2014e, p. 4-12) for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario (AECOM 2014e, p. 4-12).

Mount Signal Solar Farm Project Gen-Tie Line

No federal or state-listed plants are expected to occur within the Mount Signal Solar Farm Project Gen-Tie line corridor. Therefore, **no impact** to federal or state-listed plant species would result from construction of Project co-location upgrades within the Mount Signal Solar Farm Project Gen-Tie line corridor (AECOM 2014e, p. 4-12).

Full Build-out Scenario/All CUPs (13-0036 thru 13-0052)

Overall, no federal or state listed special status plant species were identified within the BSA. Therefore, **no impact** to federally listed or state-listed plants would occur as a result of construction of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario (AECOM 2014e, p. 4-12).

Non-listed Special-Status Plant Species

Solar Energy Center

No non-listed special-status plants were detected within the Solar Energy Center at all CUPs. However, as discussed above, a potentially significant direct impact to non-listed plant species could occur at CUP 13-0047 as a result of direct removal during grading and clearing activities. Further, potentially significant indirect impacts to non-listed, special-status plans species could occur as a result of trampling of plants due to long-term unauthorized trespass, operation-generated fugitive dust, erosion, sedimentation, storm water contaminant runoff, the potential introduction and proliferation of invasive non-native plant species, and herbicide used during control of non-native plant species throughout the Solar Energy Center and at each individual CUP (13-0036 thru 13-0052).

Extending the duration of construction activities to develop the 17 individual CUPs over a 10-year period (i.e. the Phased CUP Scenario) as opposed to build-out of all 17 CUPs at one time (i.e. the Full Build-out Scenario) are assumed to have a similar level of indirect impacts given that impacts (e.g., noise, lighting) would be extended over a greater period of time. However, if the Full Build-out Scenario were implemented, the impacts would be more intense but shorter in duration compared to the Phased CUP Scenario. Therefore, a **potentially significant** impact to non-listed special-status plant species would result from construction of the Solar Energy Center (AECOM 2014e, p. 4-39) for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Electric Collector Line Corridor

No non-listed special-status plants were detected within the Electric Collector Line Corridor. Therefore, **no impact** to non-listed special-status plant species would result from construction of the Electric Collector Line Corridor (AECOM 2014e, p. 4-39) for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mount Signal Solar Farm Project Gen-Tie Line

No non-listed special-status plants were detected within the Mount Signal Solar Farm Project Gen-Tie line corridor. Therefore, **no impact** to non-listed special-status plant species would result from construction of Project co-location upgrades at the Mount Signal Solar Farm Project Gen-Tie line

corridor (AECOM 2014e, p. 4-39) for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Full Build-out Scenario/All CUPs (13-0036 thru 13-0052)

Overall, a potentially significant direct impact to non-listed species was identified at CUP 13-0047. No other direct impact to non-listed special-status species within the Full Build-out Scenario/Phased CUP Scenario was identified. However, CUP 13-0047 is part of the Full Build-out Scenario. Further, potentially significant indirect impacts to non-listed, special-status plans species could occur throughout the Solar Energy Center at each CUP (13-0036 thru 13-0052). Therefore, a **potentially significant** impact to non-listed special-status plant species would result from construction of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario (AECOM 2014e, p. 4-39).

Operation

Direct Impacts

No federal or state non-listed special-status plants were detected within the BSA. Potentially significant impacts to non-listed plant species were identified during construction of CUP 13-0047. However, all operation activities associated with CUP 13-0047 would occur within areas permanently cleared of vegetation during Project construction. Therefore, **no direct impact** to non-listed federal or state special-status plant species would result from operation (AECOM 2014e, p. 4-64) for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Indirect Impacts

Potential indirect impacts to non-listed special-status plants associated with operation of both the Full Build-out Scenario and Phased CUP Scenario include trampling of plants due to long-term unauthorized trespass, operation-generated fugitive dust, erosion, sedimentation, storm water contaminant runoff, and the potential introduction and proliferation of invasive non-native plant species. Herbicide used during control of non-native plant species has potential to be inadvertently applied to adjacent non-listed special-status plants. However, herbicides are regularly used during agriculture activities and herbicide use within both the Full Build-out Scenario and Phased CUP Scenario would decrease when agriculture activities cease. These indirect impacts have the potential to result in off-site habitat degradation that may adversely affect special-status plants ability to thrive and reproduce (AECOM 2014e, p. 4-64). Therefore, **a potentially significant** indirect impact to non-listed federal or state special-status plant species may result from construction of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Decommissioning

Full Build-out Scenario/All CUPs (13-0036 thru 13-0052)

Decommissioning activities at the Solar Energy Center at all CUPs (13-0036 thru 13-0052) would result in indirect impacts to non-listed special-status plant species similar to those described above for construction. Impacts would be indirect because biological resources would likely only remain within areas adjacent (i.e., off-site) to solar energy facilities. No special status plant species were identified within the Electric Collector Line Corridor or Gen-Tie line corridor. Indirect impacts to non-listed special-status plant species would be temporary because all CUPs (13-0036 thru 13-0052) would be restored to pre-Project soil conditions at the completion of decommissioning. Decommissioning is generally considered beneficial to biological resources. However, potential indirect impacts to non-listed special-status plant species would be considered **potentially significant** (AECOM 2014e, p. 4-69) during decommissioning activities for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mitigation Measures

MM 4.12.3 Prior to the on-set of construction within CUP 13-0047, a rare plant habitat field assessment shall be conducted to assess the need for focused rare plant surveys within this CUP area. If rare plants have potential to occur in CUP 13-0047, then surveys shall be required during appropriate conditions. If focused rare plant surveys detect special-status species, the Applicant shall prepare a salvage and relocation plan in coordination with CDFW.

Timing/Implementation: *Prior to construction of CUP 13-0047.*
Enforcement/Monitoring: *Imperial County Planning and Development Services Department.*

In addition, compliance with mitigation measures MM 4.12.1a, MM 4.12.2b, MM 4.12.1c, MM 4.12.1d, MM 4.12.1e and MM 4.12.1f would serve to mitigate impacts to special status plant species.

Significance After Mitigation

Upon implementation of mitigation measure MM 4.12.3, potential construction-related direct impacts to non-listed special-status plant species would be reduced to **less than significant**. Upon implementation of mitigation measure MMs 4.12.1a, MM 4.12.1b, MM 4.12.1c, MM 4.12.1d and MM 4.11.1b (in Section 4.11, Hydrology and Water Quality), potential construction-related indirect impacts to non-listed special-status plant species would be reduced to **less than significant** for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario. Upon implementation of mitigation measures MM 4.12.1e and MM 4.11.1b (in Section 4.11, Hydrology and Water Quality), potential operation-related indirect impacts to non-listed special-status plant species would be reduced to **less than significant** for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario. Upon implementation of mitigation measures MM 4.12.1f and MM 4.11.1b (in Section 4.11, Hydrology and Water Quality), potential decommissioning-related indirect impacts to non-listed special-status plant species would be reduced to **less than significant** for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Construction Impacts to Special Status Animal Species – Southwestern Willow Flycatcher

Impact 4.12.4 Construction of CUPs 13-0037, 13-0038, 13-0039, 13-0040, 13-0042, 13-0045, 13-0046, 13-0047, and 13-0049 would result in permanent direct impacts to southwestern willow flycatcher migration stopover habitat, including drains and canals, arrow weed scrub, and tamarisk scrub through habitat removal. Construction, operation and decommissioning of the both the Full Build-out Scenario and each individual CUP (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario may also result in direct and indirect impacts to southwestern willow flycatcher as a result of collisions with overhead lines and PV panels and disruption of habitat and foraging/migration behavior. Therefore, impacts to southwestern willow flycatcher are considered **potentially significant**.

One non-vocal flycatcher exhibiting characteristics consistent with those of willow flycatcher (state endangered) was seen perching and foraging in the BSA in early May 2010 during a focused protocol BUOW survey. This individual could not be identified to the subspecies level given the lack of vocalization during observation but was likely a migrant passing through the BSA. All subspecies of willow flycatcher are state-listed as endangered under the CESA, and the southwestern willow flycatcher

(one of three subspecies of willow flycatcher occurring in California) is federally listed as endangered under the ESA. Occurrences of willow flycatchers within the BSA, including potential southwestern willow flycatchers, are expected to be limited to migrants given the lack of breeding habitat in the BSA and vicinity. Additionally, there is no evidence that the southwestern willow flycatcher has ever nested in the Imperial Valley (AECOM 2014e, p. 3-12).

CUPs 13-0037, 13-0038, 13-0039, 13-0040, 13-0042, 13-0045, 13-0046, 13-0047, and 13-0049

Construction

Direct Impacts

Solar Energy Center

Permanent direct impacts to suitable willow flycatcher migration stopover habitat (including drains and canals, arrow weed scrub, and tamarisk scrub) would occur within CUPs 13-0037, 13-0038, 13-0039, 13-0040, 13-0042, 13-0045, 13-0046, 13-0047, and 13-0049. Permanent direct impacts to suitable willow flycatcher migration habitat would be greatest in CUP area 13-0047 and would occur as a result of grading and installing the solar facility, which would result in the permanent removal of vegetation along the New River (**Table 4.12-11**). Potential impacts to migrating willow flycatchers (including potential southwestern willow flycatchers) resulting from construction-related activities within CUPs 13-0037, 13-0038, 13-0039, 13-0040, 13-0042, 13-0045, 13-0046, 13-0047, and 13-0049 may include collisions with equipment or vehicles. However, such effects are expected to be minimal because migrating individuals would likely avoid or pass over areas under construction because these areas would not contain riparian habitat. Because willow flycatchers do not breed in the Imperial Valley, impacts during the vegetation clearing stage of construction to nesting birds and their young are not expected (AECOM 2014e, p. 4-40). Therefore, construction of CUPs 13-0037, 13-0038, 13-0039, 13-0040, 13-0042, 13-0045, 13-0046, 13-0047, and 13-0049 would result in **potentially significant** direct impacts to suitable willow flycatcher migration habitat with the greatest impacts occurring at CUP 13-0047.

Indirect Impacts

Solar Energy Center

Potential indirect construction impacts at CUPs 13-0037, 13-0038, 13-0039, 13-0040, 13-0042, 13-0045, 13-0046, 13-0047, and 13-0049 may occur to migrating willow flycatchers that may stop over in riparian scrub within IID drains and canals or along areas of the New River as a result of increased noise levels, nighttime lighting, dust, sedimentation, and erosion. These indirect impacts have the potential to degrade willow flycatcher migration stopover habitat and alter foraging and migration behavior at CUPs 13-0037, 13-0038, 13-0039, 13-0040, 13-0042, 13-0045, 13-0046, 13-0047, and 13-0049 (AECOM 2014e, p. 41). Therefore, a **potentially significant** indirect impact to willow flycatcher migration stopover habitat and foraging/migration behavior would occur at CUPs 13-0037, 13-0038, 13-0039, 13-0040, 13-0042, 13-0045, 13-0046, 13-0047, and 13-0049.

Operation

See discussion below, under Impact 4.12.13, Migratory Birds, "Full Build-out Scenario/All CUPs (13-0036 thru 13-0052)."

Decommissioning

See discussion below, under Impact 4.12.13, Migratory Birds, "Full Build-out Scenario/All CUPs (13-0036 thru 13-0052)."

FULL BUILD-OUT SCENARIO/ALL CUPs (13-0036 THRU 13-0052)

Construction

Direct Impacts

Solar Energy Center

Potential direct impacts to the willow flycatcher (including potential southwestern willow flycatchers) resulting from construction of Solar Energy Center at all CUPs (13-0036 thru 13-0052) are expected to be minimal with the exception of CUP areas 13-0047, 13-0046, and 13-0045. Within the majority of the Solar Energy Center, permanent direct impacts related to bridge crossings through suitable willow flycatcher migration stopover habitat (including arrow weed scrub and tamarisk scrub) would be limited these to these habitats (**Table 4.12-11**). Potential direct impacts to migrating willow flycatchers also include impacts resulting from collisions with PV panels prior to the initiation of O&M activities. Polarized light pollution caused by solar PV panels may affect foraging behaviors, navigation, and orientation in birds, leading to potential collisions with panels. Waterbirds have composed the majority of avian mortalities at the Desert Sunlight PV facility. The potential effect of polarized light pollution on migrating willow flycatchers is not known (AECOM 2014e, p. 4-40). Further, construction of CUP 13-0047 may result in direct impacts to southwestern willow flycatcher habitat through habitat removal. Because CUP 13-0047 is part of the Solar Energy Center, a **potentially significant** impact to southwestern willow flycatcher habitat would occur during construction of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Electric Collector Line Corridor

Electric collector line pole structures would be located within agriculture fields. These areas are not considered suitable willow flycatcher migration stopover habitat (i.e., riparian scrub). However, potential direct impacts to willow flycatcher also include impacts resulting from collisions with overhead wires and other structures associated with the Electric Collector Line Corridor improvements prior to the initiation of Project operation. Therefore, a **potentially significant impact** to migrant willow flycatcher habitat would result from construction activities associated with the installation of Electric Collector Line Corridor pole structures (AECOM 2014e, p. 4-40) for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mount Signal Solar Farm Project Gen-Tie Line

The Mount Signal Solar Farm Project has already constructed a 230-kV single-circuit Gen-Tie line designed to be expanded to carry a second circuit. The Project would use the second circuit and would share 230-kV Gen-Tie structures with the Mount Signal Solar Farm Project to connect to the ISECS switchyard. The Mount Signal Solar Farm Project Gen-Tie line pole structures that would be upgraded or installed are not located within suitable willow flycatcher migration stopover habitat (i.e., riparian scrub). Potential direct impacts to willow flycatcher could result from collisions with overhead Gen-Tie wires, Gen-Tie tower guy wires, and other structures associated with the Mount Signal Solar Farm Project Gen-Tie upgrades prior to the initiation of Project operation. Therefore, a **potentially significant** direct impact to migrant willow flycatchers would result from construction work within the Mount Signal Solar Farm Project Gen-Tie line corridor (AECOM 2014e, p. 4-41).

Full Build-out Scenario/All CUPs (13-0036 thru 13-0052)

Overall, direct impacts to southwestern willow flycatchers could occur throughout both the Full Build-out Scenario and the Phased CUP Scenario in association with collisions with equipment, transmission line infrastructure, and/or PV panels. In addition, construction of CUP 13-0047 would result in direct

impacts to southwestern willow flycatcher migration habitat. Therefore, **potentially significant** direct impacts to southwestern willow flycatcher would occur during construction of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Indirect Impacts

Full Build-out Scenario/All CUPs (13-0036 thru 13-0052)

Potential indirect impacts to migrating willow flycatchers (including southwestern willow flycatchers) are expected to be similar throughout construction of the Solar Energy Center at each individual CUP (13-0036 thru 13-0052), the Electric Collector Line Corridor improvements, and Mount Signal Solar Farm Project Gen-Tie line upgrades (throughout the Full Build-out Scenario). Potential temporary, indirect construction impacts may occur to migrating willow flycatchers that may stopover in riparian scrub within IID drains and canals or along areas of the New River and Greeson Wash as a result of increased noise levels, nighttime lighting, dust, sedimentation, and erosion. These indirect impacts have the potential to degrade willow flycatcher habitat and alter foraging and migration behavior (AECOM 2014e, p. 4-41).

Construction activities to develop the 17 individual CUPs over a 10-year period (i.e. the Phased CUP Scenario) as opposed to build-out of all 17 CUPs at one time (i.e. the Full Build-Out Scenario) is assumed to have a similar level of indirect impacts given that impacts (e.g., noise, lighting) would be extended over a greater period of time. However, if the Full Build-out Scenario were implemented, the impacts would be more intense but shorter in duration compared to the Phased CUP Scenario. Therefore, either the Full Build-out Scenario or Phased CUP Scenario would result in a comparable indirect impact to migrating willow flycatchers (AECOM 2014e, p. 4-41). Therefore, construction of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario would result in **potentially significant** indirect impacts to willow flycatcher habitat and foraging/migration behavior.

Operation

See discussion below, under Impact 4.12.14, Migratory Birds, "Full Build-out Scenario/All CUPs (13-0036 thru 13-0052)."

Decommissioning

See discussion below, under Impact 4.12.14, Migratory Birds, "Full Build-out Scenario/All CUPs (13-0036 thru 13-0052)."

Mitigation Measures

Implement mitigation measures MM 4.12.1a, MM 4.12.1b, MM 4.12.1c, MM 4.12.1d, MM 4.12.1e, MM 4.12.1f, MM 4.12.14a and MM 4.12.14b (below).

Significance After Mitigation

Potential construction-related direct and indirect impacts to migrating willow flycatchers and southwestern willow flycatchers would be considered significant because these species are listed under CESA and ESA, respectively. Upon compliance with mitigation measures MM 4.12.1a, MM 4.12.1b, MM 4.12.1c, MM 4.12.1d, MM 4.12.1e, MM 4.12.1f, MM 4.12.14a and MM 4.12.14b, potential impacts to southwestern willow flycatcher at CUP 13-0047, under both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario would be reduced to **less than significant**.

Construction Impacts to Special Status Animal Species with Potential to Occur in the BSA – Yuma Clapper Rail

Impact 4.12.5 Construction of CUP 13-0047 would result in permanent, direct impacts to potential Yuma clapper rail habitat through habitat removal. Construction, operation and decommissioning of the Full Build-out Scenario and each individual CUP (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario may also result in direct and indirect impacts to Yuma clapper rail as a result of collisions with overhead lines and PV panels and disruption of habitat and foraging/migration behavior. Therefore, impacts to Yuma clapper rail are considered **potentially significant**.

FULL BUILD-OUT SCENARIO/ALL CUPS (13-0036 THRU 13-0052)

Construction

Direct Impacts

Solar Energy Center

Construction within CUP 13-0047 would result in permanent removal of open water bordered with areas of potential Yuma clapper rail habitat (i.e. cattail habitat within the open water) adjacent to the New River. Tamarisk scrub removed within CUPs 13-0046 and 13-0045 is not suitable Yuma clapper rail habitat. No other CUP areas would impact potential Yuma clapper rail habitat. However, construction of solar facilities within each CUP area may result in impacts to individuals (e.g., collision with equipment vehicles). Such impacts are expected to be limited to construction of the Solar Energy Center within CUPs 13-0047, 13-0046, and 13-0045 that are directly adjacent to the New River where the species is most likely to occur within the project area. However, the probability of impacts within CUPs 13-0046 and 13-0045 are expected to be low because construction would occur on a bluff approximately 30 feet (9 meters) above the New River and construction would not occur within wetland vegetation (AECOM 4-42). A **potentially significant** direct impact to Yuma clapper rail would occur during construction of the Solar Energy Center for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario, especially with regard to permanent removal of open water bordered with areas of potential Yuma clapper rail habitat at CUP 13-0047.

Potential direct impacts to Yuma clapper rail also include collisions with PV panels prior to the initiation of O&M activities. Polarized light pollution caused by solar PV panels may affect foraging behaviors, navigation, and orientation in birds, leading to potential collisions with panels. Waterbirds have composed the majority of avian mortalities at the Desert Sunlight PV facility. Additionally, large areas of solar PV or CPV panels in the desert environment may mimic water bodies and inadvertently attract Yuma clapper rail. Although studies have shown that glare intensity and/or reflectivity of CPV modules are lower than that of water and similar to asphalt, avian species, such as the Yuma clapper rail, may collide with PV panels and/or become stranded in solar fields resulting in fatalities. A single Yuma clapper rail mortality has been recorded at the Desert Sunlight PV facility (AECOM 2014e, p. 4-42). Although this individual was detected near a PV panel, the cause of death for this species was not specified (AECOM 2014e, p. 4-42).

Electric Collector Line Corridor

Construction within the Electric Collector Line Corridor would not result in permanent and temporary removal of Yuma clapper rail habitat. Potential direct impacts to Yuma clapper rail include impacts resulting from collisions with overhead wires and other structures associated with the electric collector lines prior to the initiation of O&M activities. A **potentially significant** direct impact would occur to Yuma clapper rail during construction of the Electric Collector Line Corridor for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mount Signal Solar Project Gen-Tie Line

The Mount Signal Solar Farm Gen-Tie line pole structures that would be upgraded or installed are not located within suitable Yuma clapper rail habitat. Therefore, **no direct impacts** to Yuma clapper rail habitat would result from construction work within the Mount Signal Solar Farm Gen-Tie line corridor. Potential direct impacts to Yuma clapper rail also include impacts resulting from collisions with overhead Gen-Tie wires, Gen-Tie tower guy wires, and other structures associated with the Mount Signal Solar Farm Gen-Tie line prior to the initiation of O&M activities.

Full Build-out Scenario/All CUPs (13-0036 thru 13-0052)

Overall, a **potentially significant** direct impact would occur to Yuma clapper rail foraging habitat during construction of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Indirect Impacts

Full Build-out Scenario/All CUPs (13-0036 thru 13-0052)

Potential indirect impacts to Yuma clapper rail are expected to be limited to construction of the solar facilities within CUPs 13-0047, 13-0046, and 13-0045 that are directly adjacent to the New River. Potential temporary indirect construction impacts to Yuma clapper rail and its habitats include habitat fragmentation, increased human presence, increased noise levels, nighttime lighting, dust, sedimentation, and erosion. These indirect impacts have the potential to degrade Yuma clapper rail habitat and alter foraging behavior. Extending the duration of construction activities to develop the 17 individual CUPs over a 10-year period (i.e. the Phased CUP Scenario) as opposed to construction all 17 CUPs at one time (i.e. Full Build-out Scenario) are assumed to have a similar level of indirect impacts given that impacts (e.g., noise, lighting) would be extended over a greater period of time. However, if the Full Build-out Scenario were implemented, the impacts would be more intense but shorter in duration compared to the Phased CUP Scenario. Therefore, **potentially significant** indirect impacts to Yuma clapper rail would occur during construction of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Operation

See discussion below, under Impact 4.12.13, Migratory Birds, "Full Build-out Scenario/All CUPs (13-0036 thru 13-0052)."

Decommissioning

See discussion below, under Impact 4.12.13, Migratory Birds, "Full Build-out Scenario/All CUPs (13-0036 thru 13-0052)."

Mitigation Measures

MM 4.12.5 Prior to the on-set of construction within CUP 13-0047, a Yuma clapper rail field habitat assessment shall be conducted within CUP 13-0047 plus a 500 foot (150 meter) buffer (CUP 13-0047 Study Area) to determine whether potentially suitable habitat is present. If potentially suitable Yuma clapper rail habitat occurs within the CUP 13-0047 Study Area, focused surveys shall be conducted using methods outlined the USFWS National Marsh Bird Survey Protocol. At least three breeding surveys will be conducted between March 15 and April 30. A focused survey shall be conducted by ornithologists with marsh bird experience. If focused Yuma clapper rail surveys detect this species, the Applicant shall consult with USFWS.

Prior to the onset of construction within CUP areas 13-0046 and 13-0045 a Yuma clapper rail field habitat assessment shall be conducted within CUPs 13-0046 and 13-0045 plus a 250 foot (75 meter buffer) (CUP 13-0046/13-0045 Study Area) to determine if potentially suitable habitat is present.

- The Project Applicant shall not remove any identified potentially suitable Yuma clapper rail habitat within CUP areas 13-0046 or 13-0045.

- Project-related construction, clearing and ground disturbing activities are prohibited within 250-feet of identified potentially suitable Yuma clapper rail habitat during the breeding season (February 15 through June 30).

Timing/Implementation: *Prior to the onset of construction within CUP areas 13-0047, 13-0046, and 13-0045.*

Enforcement/Monitoring: *Imperial County Planning and Development Services Department.*

Compliance with mitigation measures MM 4.12.1a, MM 4.12.1b, MM 4.12.1c, MM 4.12.1d. MM 4.12.1e MM 4.12.1f, MM 4.12.14a, and MM 4.12.14b (below).

Significance After Mitigation

Potential construction-related direct and indirect impacts to Yuma clapper rails would be considered significant since the species is listed under CESA and ESA. Upon compliance with mitigation measures MM 4.12.1a, MM 4.12.1b, MM 4.12.1c, MM 4.12.1d, MM 4.12.1e, MM 4.12.1f, MM 4.12.14a, MM 4.12.14b and MM 4.12.14c, potential impacts to Yuma clapper rail at CUP 13-0047 would be reduced to **less than significant** for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Construction Impacts to Special Status Animal Species with Potential to Occur in the BSA – Sandhill Crane

Impact 4.12.6 Greater sandhill crane is a special status animal species with high potential to occur in the BSA. Construction, operation and decommissioning of the Full Build-out Scenario and each individual CUP (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario may result in direct impacts to greater sandhill crane as a result of collisions with overhead lines and PV panels. Construction, operation and decommissioning of the Full Build-out Scenario and each individual CUP may also result in indirect impacts to greater sandhill crane habitat and foraging behavior. Therefore, impacts to greater sandhill crane are considered **potentially significant**.

Greater sandhill crane was not observed during surveys, but suitable winter foraging habitat exists throughout the BSA in agricultural fields. However, no greater sandhill crane breeding habitat occurs within the BSA.

FULL BUILD-OUT SCENARIO/ALL CUPs (13-0036 THRU 13-0052)

Construction

Direct Impacts

Solar Energy Center

Construction within the Solar Energy Center at each individual CUP (13-0036 thru 13-0047) would result in permanent removal of agriculture fields which are greater sandhill crane winter foraging habitat (**Table 4.12-11**). Potential impacts to cranes resulting from construction activities within the Project Area may include collisions with equipment or vehicles. However, such effects are expected to be minimal

because the only individuals expected in the Project Area are adults or sub-adults that would easily avoid or pass over areas under construction. Only adults and sub-adults would potentially be effected because greater sandhill crane does not breed in Imperial Valley.

Potential direct impacts to greater sandhill crane also include impacts resulting from collisions with PV panels prior to the initiation of Project operation. Polarized light pollution caused by solar PV panels may affect foraging behaviors, navigation, and orientation in birds, leading to potential collisions with panels. Waterbirds have composed the majority of avian mortalities at the Desert Sunlight PV facility. Additionally, large areas of solar PV or CPV panels in the desert environment may mimic water bodies and inadvertently attract greater sandhill crane. Individuals may collide with solar panels and/or become stranded in solar fields resulting in fatalities. Although studies have shown that glare intensity and/or reflectivity of CPV modules are lower than that of water and similar to asphalt, avian species may collide with PV panels and/or become stranded in solar fields resulting in fatalities (AECOM 2014e, p. 4-44). A **potentially significant** direct impact would occur to greater sandhill crane and greater sandhill crane foraging habitat during construction of the Solar Energy Center for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario**.**

Electric Collector Line Corridor

Construction within the Electric Collector Line Corridor would result in permanent and temporary removal of greater sandhill crane winter foraging habitat. Direct permanent and temporary impacts resulting from installation of pole structures would occur within agriculture fields (**Table 4.12-12**). Construction of the Electric Collector Line Corridor may result in impacts to individuals from vehicular strikes or excavation equipment. Collisions occur most frequently during the vegetation clearing stage of construction and involve eggs, nestlings, and recently fledged young that cannot safely avoid equipment. Potential direct impacts to greater sandhill crane also include impacts resulting from collisions with overhead wires and other structures associated with the electric collector lines prior to the initiation of operations activities. However, this species does not breed within the Imperial Valley and impacts to eggs, nestlings, and recently fledged young would not occur (AECOM 2014e, p. 4-44). A **potentially significant** direct impact would occur to greater sandhill crane and greater sandhill crane foraging habitat during construction activities within the Electric Collector Line Corridor for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mount Signal Solar Farm Project Gen-Tie Line

The Mount Signal Solar Farm Project Gen-Tie line pole structures that would be upgraded or installed are not located within suitable greater sandhill crane habitat. Therefore, **no direct impact** to greater sandhill crane would result from construction work within the Mount Signal Solar Farm Project Gen-Tie line corridor. Potential direct impacts to greater sandhill crane also include impacts resulting from collisions with overhead Gen-Tie wires, Gen-Tie tower guy wires, and other structures associated with the Mount Signal Solar Farm Gen-Tie line prior to the initiation of O&M activities (AECOM 2014e, p. 4-44).

Full Build-out Scenario/All CUPs (13-0036 thru 13-0052)

Overall, a **potentially significant** direct impact would occur to greater sandhill crane and greater sandhill crane foraging habitat during construction of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Indirect Impacts

Full Build-out Scenario/All CUPs (13-0036 thru 13-0052)

Potential indirect impacts to greater sandhill crane are expected to be similar for construction of the Solar Energy Center at each individual CUP (13-0036 thru 13-0047), the Electrical Collector Line Corridor

improvements, and the Mount Signal Solar Farm Project Gen-Tie line upgrades. Potential temporary indirect construction impacts to greater sandhill crane and its habitats include increased noise levels, nighttime lighting, dust, sedimentation, and erosion. These indirect impacts have the potential to degrade greater sandhill crane habitat and alter foraging behavior (AECOM 2014e, p. 4-44).

Construction activities to develop the 17 individual CUPs over a 10-year period (i.e. the Phased CUP Scenario) as opposed to build-out of all 17 CUPs at one time (i.e. the Full Build-out Scenario) are assumed to have a similar level of indirect impacts given that impacts (e.g., noise, lighting) would be extended over a greater period of time. However, if the Full Build-out Scenario were implemented, the indirect impacts would be more intense but shorter in duration compared to the Phased CUP Scenario. Therefore, either the Full Build-out Scenario or the Phased CUP Scenario would result in a comparable indirect impact to migrating willow flycatchers during construction (AECOM 2014e, p. 4-45). Because greater sandhill crane is a state-listed threatened species Fully Protected Species, indirect construction-related impacts would be considered **potentially significant** for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Operation

See discussion below, under Impact 4.12.13, Migratory Birds, "Full Build-out Scenario/All CUPs (13-0036 thru 13-0052)."

Decommissioning

See discussion below, under Impact 4.12.13, Migratory Birds, "Full Build-out Scenario/All CUPs (13-0036 thru 13-0052)."

Mitigation Measures

Implement mitigation measures MM 4.12.1a, MM 4.12.1b, MM 4.12.1c, MM 4.12.1d. MM 4.12.1e MM 4.12.1f, MM 4.12.14a, and MM 4.12.14b (below).

Significance After Mitigation

Potential construction-related direct and indirect impacts to the greater sandhill crane would be considered significant since this species is state-listed threatened species and fully protected species. Potential construction-related direct and indirect impacts to migrating greater sandhill crane would be considered significant because these species are listed under CESA and ESA. Following implementation of mitigation measures MM 4.12.1a, MM 4.12.1b, MM 4.12.1c, MM 4.12.1d. MM 4.12.1e MM 4.12.1f, MM 4.12.14a, and MM 4.12.14b, potential impacts to greater sandhill crane would be reduced to **less than significant** for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Impacts to Non-listed Special Status Animal Species – Burrowing Owl

Impact 4.12.7 The Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) support burrowing owl habitat. Project construction, operation and decommissioning would result in temporary and permanent, direct and indirect impacts to burrowing owls, burrowing owl foraging habitat, and burrowing owl breeding habitat for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario. The burrowing owl is a USFWS Bird of Conservation Concern and CDFW Species of Special Concern. Therefore, impacts to burrowing owl are considered **potentially significant**.

BUOW was observed throughout the BSA. The agriculture fields provide suitable foraging habitat, and breeding habitat occurs within the BSA, adjacent to canals, drains, and dirt roads (AECOM 2014e, p. 4-45).

FULL BUILD-OUT SCENARIO/ALL CUPs (13-0036 THRU 13-0052)

Construction

Direct Impacts

Solar Energy Center

Construction within the Solar Energy at all CUPs (13-0036 thru 13-0052) would result in permanent removal of BUOW foraging and breeding habitat may also result in impacts to individuals from vehicular strikes or excavation equipment. Vehicular collisions occur most frequently during the vegetation clearing and grading stage of construction, and involve eggs, nestlings, and recently fledged young that are within burrows and cannot safely avoid equipment. Potential direct impacts to BUOW also include impacts resulting from collisions with PV panels prior to the initiation of Project operation activities. Polarized light pollution caused by solar PV panels may affect foraging behaviors, navigation, and orientation in birds leading to potential collisions with panels. Waterbirds have composed the majority of avian mortalities at the Desert Sunlight PV facility. The potential effect of polarized light pollution on BUOW is not known (AECOM 2014e, p. 4-45).

The majority of occupied BUOW burrows were detected within the IID ROWs and, aside from new or upgraded vehicular crossings, no direct impacts would occur within IID ROW easements and associated canals and drains. Thus, occupied burrows within IID ROW easements would not be directly impacted. Occupied burrows within farming canals and drains inside solar field parcels would be removed to install Solar Energy Center at all CUPs (13-0036 thru 13-0052). Of the 148 occupied burrows documented within the BSA, approximately 22 would be removed in association with the Full Build-out Scenario and CUPs 13-0036, 13-0037, 13-0038, 13-0039, 13-0040, 13-0041, 13-0042, 13-0043, and 13-0044 proposed as part of the Phased CUP Scenario (**Table 4.12-15**) (AECOM 2014e, p. 4-46).

TABLE 4.12-15
ANTICIPATED PERMANENT DIRECT IMPACTS TO OCCUPIED BURROWS FOR THE PROJECT

CUP Area	Number of Occupied Burrows[1]	CUP Area	Number of Occupied Burrows[1]
CUP 13-0036	0	CUP 13-0045	0
CUP 13-0037	2	CUP 13-0046	1
CUP 13-0038	0	CUP 13-0047	0
CUP 13-0039	0	CUP 13-0048	5
CUP 13-0040	0	CUP 13-0049	0
CUP 13-0041	0	CUP 13-0050	1
CUP 13-0042	2	CUP 13-0051	1
CUP 13-0043	10	CUP 13-0052	0
CUP 13-0044	0	**Full Build-out**	**22**

Source: AECOM 2014e, p. 4-46.
BUOW transects required by protocol breeding surveys were not completed for CUP area 13-0047; however, portions of this CUP were surveyed during visual coverage scans using binoculars within the 500-foot (150-meter) buffer of the BSA.

The majority of foraging habitat that will be permanently removed as a result of grading, construction, and placement of solar facilities is in the form of agriculture fields. While foraging habitat (i.e., agriculture) ranges throughout the Project footprint, the quality of foraging habitat varies. Most animals

tend to occupy and use certain areas (i.e., core areas) of their home range with greater intensity. Core areas represent areas that provide essential resources such as food, mates, or shelter. BUOW home range studies in the Imperial Valley have focused on the distance BUOW forage from their nest. However, core areas are often not evenly distributed within an area. As such, home ranges may include unused habitat and provide a misleading representation of the area used by an animal. For example, BUOW may fly over or pass by areas to forage in a particular crop type leading to the impression that all habitats in a given area were used when in reality foraging may be limited to a smaller area (AECOM 2014e, p. 4-47).

To determine the extent of core BUOW foraging habitat for BUOW that use the proposed solar field site parcels, Live Oak Associates, Inc. (LOA) and Conservation Science Partners (CSP) used an occupancy modeling framework to investigate the relationship between habitat and BUOW occupancy based on rigorous data set collected during 2012 BUOW surveys. LOA and CSP analyzed spatial patterns between occupied BUOW burrow locations and environmental variables thought to be important for the BUOW, including soil, crop, hydrography, and road features. Occupancy models were incorporated into a geographic information system (GIS) to derive spatially explicit estimates of occupancy to quantify the importance of adjacency between burrows and environmental variables, namely dominant crop types LOA and CSP determined that, for the BSA, the quality of the habitat was strongly influenced by crop type (wheat and alfalfa), crop consistency, soils, and proximity to roads. LOA and CSP estimate 614 acres (248 hectares) of high quality or core foraging habitat would be impacted by both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario (**Table 4.12-16**). While other foraging habitat exist onsite, site specific, statistically robust estimates of core foraging habitat determined this acreage to be the most important for BUOW that use the Project footprint (AECOM 2014e, p. 4-47). Detailed analytical methods and results can be found in Appendix H to **Appendix J** of this EIR.

TABLE 4.12-16
ANTICIPATED PERMANENT DIRECT IMPACTS TO CORE BURROWING OWL FORAGING HABITAT

CUP Area	Core Foraging Habitat(acres)
CUP 13-0036	123.7
CUP 13-0037	6.9
CUP 13-0038	0.0
CUP 13-0039	7.8
CUP 13-0040	37.9
CUP 13-0041	0.0
CUP 13-0042	0.0
CUP 13-0043	133.2
CUP 13-0044	0.0
CUP 13-0045	28.6
CUP 13-0046	14.7
CUP 13-0047	0.4
CUP 13-0048	9.1
CUP 13-0049	1.9
CUP 13-0050	99.6
CUP 13-0051	150.2
CUP 13-0052	0.0
Total	**614.0**

Source: AECOM 2014e, p. 4-47.

Therefore, **potentially significant** direct impacts to BUOW would occur as a result of construction of the Solar Energy Center for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario**.**

Electric Collector Line Corridor

Construction within the Electric Collector Line Corridor would result in permanent and temporary removal of BUOW foraging (agriculture fields) habitat (**Table 4.12-12**). Installation of pole structures associated with the electric collector line would occur in agriculture fields and would not be within BUOW breeding habitat (**Table 4.12-12**). Thus, direct impacts to occupied burrows are not expected. However, construction of the Electric Collector Line Corridor may result in impacts to individuals from vehicular strikes or excavation equipment. Potential direct impacts to BUOW also include impacts resulting from collisions with overhead wires and other structures associated with the electric collector lines prior to the initiation of Project operation (AECOM 2014e, p. 4-48). Therefore, **potentially significant** direct impacts to BUOW would occur as a result of construction of the Electric Collector Line Corridor for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mount Signal Solar Farm Project Gen-Tie

The Mount Signal Solar Farm Project has already constructed a 230-kV single-circuit Gen-Tie line designed to be expanded to carry a second circuit. The proposed Project would be using the second circuit and would share 230-kV Gen-Tie structures with the Mount Signal Solar Farm Project Gen-Tie to connect to the ISECS switchyard. Occupied burrows were detected within portions of the Mount Signal Solar Farm Project Gen-Tie line corridor where the Project proposes upgrades to co-locate with the Mount Signal Solar Farm Project's existing Gen-Tie structures. The berms of earthen roads, disturbed habitat, and/or canals/drains that remain within the Mount Signal Solar Farm Project Gen-Tie line corridor have potential for occupied burrows to be present within them. However, the majority of the Mount Signal Solar Farm Project Gen-Tie line corridor is adjacent to IID ROW easements. No structures within the Mount Signal Solar Farm Project Gen-Tie line corridor occur in IID ROW easements, which include IID access roads, canals, and/or drains. Direct removal of occupied burrows in portions of the Mount Signal Solar Farm Project Gen-Tie corridor adjacent to IID ROW easements is likely to be minimal because if burrows are present, the burrows are likely within IID ROW easements that would not be impacted. However, Project-related construction within the Mount Signal Solar Farm Project Gen-Tie line corridor may result in impacts to individuals from vehicular strikes or excavation equipment required for new installations. Potential direct impacts to BUOW also include impacts resulting from collisions with overhead Gen-Tie wires, Gen-Tie tower guy wires, and other structures associated with the Mount Signal Solar Farm Project Gen-Tie corridor prior to the initiation of Project operations (AECOM 2014e, p. 4-48). Therefore, **potentially significant** direct impacts to BUOW would occur as a result of Project construction upgrades within the Mount Signal Solar Farm Project Gen-Tie line corridor.

Indirect Impacts

Potential indirect impacts to BUOW are expected to be similar for construction of the Solar Energy Center at all CUPs (13-0036 thru 13-0052), the Electrical Collector Line Corridor improvements, and the Mount Signal Solar Project Gen-Tie line upgrades (i.e. Full Build-out Scenario) (**Table 4.12-11** and **Table 4.12-12**). Potential temporary indirect construction impacts to BUOW and associated habitats include habitat loss (foraging and breeding habitat), fragmentation, increased human presence, increased noise levels, nighttime lighting, dust, sedimentation, and erosion. These indirect impacts have the potential to degrade and eliminate BUOW habitat and alter foraging and breeding behavior. Permanent indirect impacts could result from increased common raven and raptor predation associated with the construction of new elevated perching sites, including the Gen-Tie structures, perimeter fencing, and

Gen-Tie lines. Trash present on-site may attract ravens in numbers beyond those afforded by the normal conditions extant in the Project vicinity. In addition, BUOW inhabiting occupied burrows within IID drains and canals may be permanently displaced due to the removal of adjacent agricultural habitat and non-IID canal and drains. BUOW displacement may increase potential for predation of BUOW by raptors and other predators. This effect would likely be greatest in locations where IID drains and canals are completely encircled by solar facilities. Foraging habitat would remain within the IID drains and canals, which may support BUOW. IID drains and canals bordered by both solar facilities and agricultural fields would provide greater opportunities for BUOW to forage (AECOM 2014e, p. 4-49).

Construction activities to develop the 17 individual CUPs over a 10-year period (i.e. the Phased CUP Scenario) as opposed to constructing all 17 CUPs at one time (i.e. the Full Build-out Scenario) are assumed to have a similar level of indirect impacts, given that impacts (e.g., noise, lighting) would be extended over a greater period of time. However, if the Full Build-out Scenario were implemented, the impacts would be more intense but shorter in duration compared to the Phased CUP Scenario. Thus, either the Full Build-out Scenario or the Phased CUP Scenario would result in a comparable indirect impact (AECOM 2014e, p. 4-49). Therefore, **potentially significant** temporary and permanent indirect impacts to BUOW would occur as a result of construction for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Operation

Direct Impacts

Solar Energy Center

Potential direct impacts to BUOW include mortality of individuals by vehicle collisions during Project operations. In addition, avian collisions with solar PV installations have been documented. Polarized light pollution caused by solar PV panels may affect foraging behaviors, navigation, and orientation in birds, leading to potential collisions with panels (AECOM 2014e, pp. 66-67). Therefore, a **potentially significant** direct impact to BUOW would occur during operation of the Solar Energy Center for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Electric Collector Line Corridor

Potential direct impacts to BUOW include collisions with overhead transmission line wires, tower guy wires, and other structures associated with electric collector lines. Avian power line collisions are a widespread problem with potentially significant local impacts when high-risk conditions are present. The level of risk depends on a combination of biological and physical factors, such as weather, design and placement of Gen-Tie structures, and species-specific behavior (AECOM 2014e, pp. 66-67). Therefore, a **potentially significant** direct impact to BUOW would occur during operation of the Electric Collector Line Corridor for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mount Signal Solar Farm Gen-Tie Line

Potential direct impacts to BUOW include impacts resulting from collisions with overhead Gen-Tie wires, Gen-Tie tower guy wires, and other structures associated with the Mount Signal Solar Farm Project Gen-Tie line. Avian power line collisions are a widespread problem with potentially significant local impacts when high-risk conditions are present. The level of risk depends on a combination of biological and physical factors, such as weather, design and placement of Gen-Tie structures, and species-specific behavior (AECOM 2014e, pp. 66-67). Therefore, a **potentially significant** direct impact to BUOW would occur during operation of the Mount Signal Solar Farm Project Gen-Tie line corridor.

Full Build-out Scenario/All CUPs (13-0036 thru 13-0052)

As discussed above, direct impacts to BUOW could result from collisions during operation of the Solar Energy Center at each individual CUP (13-0036 thru 13-0052), the Electric Collector Line Corridor, and the Mount Signal Solar Farm Project Gen-Tie line. Therefore, a **potentially significant** direct impact to BUOW would occur during operation of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Indirect Impacts

Full Build-out Scenario/All CUPs (13-0036 thru 13-0052)

Potential indirect impacts to BUOW from Project operation include increased noise levels, nighttime lighting, human use, operations-generated fugitive dust, erosion, sedimentation, storm water contaminant runoff, and the potential introduction and proliferation of invasive nonnative plant species. Operations-related indirect impacts could result from increased common raven and raptor predation associated with elevated perching sites, including the Gen-Tie structures, perimeter fencing, and Gen-Tie lines. Trash present on-site may attract ravens in numbers beyond those afforded by the normal conditions extant in the Project vicinity. These indirect impacts have the potential to degrade special-status wildlife habitat (AECOM 2014e, p. 4-48). Therefore, a **potentially significant** indirect impact to BUOW would occur during operation of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Decommissioning

Solar Energy Center

Decommissioning activities would result in direct and indirect impacts to BUOW similar to those described above for construction of the Solar Energy Center both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario. The Solar Energy Center at all CUPs (13-0036 thru 13-0052) would remain free of vegetation; thus, BUOW would not inhabit the Project footprint within the solar array fields. Most impacts would be indirect because BUOW would likely only remain within areas adjacent (i.e., off-site) to the Project (e.g., BUOW nesting in adjacent canals or drains may be disturbed by decommissioning activities). Direct impacts to BUOW may result from impacts to individuals as a result of vehicular or equipment strikes. Direct and indirect impacts to BUOW in all CUP areas would be temporary because the site would be restored to pre-Project soil conditions at the completion of decommissioning. Decommissioning is generally considered beneficial to biological resources. However, direct and indirect impacts to BUOW would be considered **potentially significant** (AECOM 2014e, p. 4-66) during decommissioning activities for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Electric Collector Line Corridor

Completion of decommissioning activities would result in restoration of the Electric Collector Line Corridor to pre-project conditions. Removal of electric collector lines and support structures would eliminate power lines creating potential for BUOW collisions. However, during decommissioning activities, direct impacts to BUOW may result from impacts to individuals as a result of vehicular or equipment strikes. Therefore, direct impacts to BUOW during decommissioning activities within the Electric Collector Corridor Line would be considered **potentially significant** (AECOM 2014e, p. 4-48) for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mount Signal Solar Farm Gen-Tie Line

Completion of decommissioning activities would result in restoration of the Mount Signal Solar Farm Project Gen-Tie line corridor to pre-project conditions. Removal of electric collector lines and support structures would eliminate power lines creating potential for BUOW collisions. However, during decommissioning activities, direct impacts to BUOW may result from impacts to individuals as a result of vehicular or equipment strikes. Therefore, direct impacts to BUOW during decommissioning activities within the Mount Signal Solar Farm Project Gen-Tie corridor would be considered **potentially significant** (AECOM 2014e, p. 4-66).

Full Build-out Scenario

Completion of decommissioning of the Full Build-out Scenario would be beneficial to BUOW through the removal of facilities and infrastructure that could indirectly impact BUOW nesting and foraging behavior. However, during decommissioning activities, potential for collision with equipment and electric collector/Gen-Tie lines and support structures would remain. Therefore, **potentially significant** impacts to BUOW would occur during decommissioning of the Full Build-out Scenario.

Mitigation Measures

BURROWING OWL CONSTRUCTION MEASURES - ALL CUPs 13-0036 THRU 13-0052

MM 4.12.7 The following measures shall apply to construction activities at the Full Build-out Scenario and each individual CUP (13-0036 thru 13-0052):

- A qualified biologist shall be on-site during all ground-disturbing construction activities in potential BUOW habitat. The qualified biologist shall be responsible for implementing and overseeing BUOW avoidance and minimization measures. The qualified biologist shall have the authority to stop construction if activities are in violation of avoidance and minimization measures.
- Per CDFW guidance, a take avoidance survey (i.e., pre-construction clearance survey) will be conducted by a qualified biologist to determine presence or absence of BUOW no less than 14 days and no more than 30 days prior to initiating construction activities. Surveys shall include areas within the Project footprint and a surrounding 500-foot (150-meter) buffer. The survey shall consist of walking parallel transects and noting any fresh BUOW sign or presence. The results of the take avoidance survey shall be provided to CDFW. If more than 30 days pass between the take avoidance survey and initiation of Project construction, additional take avoidance surveys may be required, depending on what actions have been implemented to deter BUOW from moving into the Project footprint and buffer area. A final take avoidance survey shall be conducted within the Project footprint within 24 hours prior to initiation of construction activities. Given the total duration of construction and the size of the Project, it is expected that take avoidance surveys will be conducted in phases, in order to stay within the required survey windows associated with construction activities.
    - If occupied burrows are found during take avoidance surveys, appropriate construction buffers or setback distances shall be determined by the qualified biologist on a case-by-case basis, depending on the season in which disturbance will occur, the type of disturbance, and other factors that could influence susceptibility to disturbance (e.g., topography, vegetation, existing disturbance levels, etc.). To the extent feasible, buffers of 246 feet (75 meters) will be used

during the breeding season (February 1 through August 31) and 164 feet (50 meters) will be used during nonbreeding season (September 1 through January 31). "Shelter in place" techniques shall be used if necessary to create a visual and auditory barrier between construction activities and the occupied burrow. Techniques shall include placing hay bales, fencing, or another physical barrier between the occupied burrow and construction activities. The qualified biologist shall determine if and/or when shelter in place is necessary and feasible for implementation. When construction activities commence adjacent to the buffer area, a qualified biologist shall be present on-site full time to monitor the behavior of BUOW for at least 3 days. The qualified biologist shall have the authority to increase the setback distance if there are signs of disturbance, such as changes in behavior as a result of construction or other indications of distress by BUOW.

- If BUOW activity is detected at a burrow within the Project footprint during the non-breeding season (September 1 through January 31), BUOW shall be excluded from active burrows and encouraged to passively relocate to suitable, unoccupied habitat outside of the exclusion area. BUOW shall be excluded by installing one-way doors in burrow entrances. Although passive relocation does not result in control of the recipient area for BUOW, the qualified biologists shall verify that there is an acceptable "recipient" area within a reasonable distance that provides the necessary subsidies to support BUOW with the goal to minimize the stress of relocation. Subsidies to be considered include suitable burrows (primary and satellite) and habitat quality (e.g., vegetation cover, diversity) that is equal to or greater than that from which they were relocated. If, during pre-construction surveys, BUOW activity is detected at a burrow within the Project footprint during the breeding season (February 1 through August 31), then an appropriate construction buffer or setback distance shall be determined by the qualified biologist on a case-by-case basis. This buffer shall be flagged and all Project-related activity shall remain outside of the flagged area until a qualified biologist determines the burrow is no longer occupied (e.g., juveniles are foraging independently and are capable of independent survival).
- In the event that BUOW will be excluded from the Project footprint and occupied burrows will be impacted, a mitigation site with suitable burrows and habitat shall be secured and a Burrowing Owl Exclusion Plan shall be developed and approved by CDFW prior to excluding BUOW from burrows. Specific objectives for BUOW protection addressed by this Burrowing Owl Exclusion Plan shall describe exclusion methodology, burrow excavation procedures, on-site and post-relocation monitoring of occupied burrows, and reporting.
- A Burrowing Owl Habitat Mitigation strategy shall be developed and approved by CDFW. BUOW occupancy analysis and modeling determined that the Project would impact 614 acres (248 hectares) of core BUOW foraging habitat. A mitigation program has been developed that compensates for impacts to core foraging habitat through a list of mitigation options, including:

- Avoiding higher quality habitat to the extent practicable. [Note: The Project Applicant has already implemented this measure by removing portions of the Project based on the occupancy model.]
- The Applicant shall collaborate with Imperial Valley Community Foundation-Burrowing Owl Stewardship and Education Fund (IVCF-BOSEF) or another nonprofit group to enroll farmers in a program to grow and retain Burrowing Owl Friendly Crops (BOFC) identified by the occupancy model (i.e., wheat and alfalfa). Core BUOW foraging habitat shall be mitigated at a 1:1 ratio by entering farm land into short-term (e.g., 1 to 5 years) farm agreements to predominantly grow BOFC (**Table 4.12-17**).
- The Applicant shall collaborate with IVCF-BOSEF or another nonprofit group to enroll farmers in a Burrowing Owl Safe Farm Program (BOSFP) that integrates owl-friendly farm practices to reduce mortality of owls. For farm land enrolled in BOFC agreements that include requirements to implement BUOW safe farm practices, impacts to core BUOW foraging habitat shall be mitigated at a reduced ratio of 0.65:1, which reflects the combined benefit of farming BOFC using BOSFP through short-term (e.g., 1 to 5 years) farm agreements (**Table 4.12-17**).
- The Applicant shall collaborate with IVCF-BOSEF or another non-profit group to develop a long-term financing plan and shall fund an endowment account sufficient to fund the BOFC/BOSFP agreement program through the end of the Project's operational life (anticipated to be approximately 30 years).

TABLE 4.12-17
COMPENSATION FOR CORE BURROWING OWL FORAGING HABITAT UNDER THE BURROWING OWL FARM CONTRACT PLAN (ACRES)

CUP Area	Core Foraging Habitat (acres)	Base BUOW Friendly Crops/ Consistency (1:1)	BUOW Friendly Crops/ Consistency + BOSFP (0.7:1)[1]
CUP 13-0036	123.7	123.7	86.6
CUP 13-0037	6.9	6.9	4.8
CUP 13-0038	0.0	0.0	0.0
CUP 13-0039	7.8	7.8	5.5
CUP 13-0040	37.9	37.9	26.6
CUP 13-0041	0.0	0.0	0.0
CUP 13-0042	0.0	0.0	0.0
CUP 13-0043	133.2	133.2	93.2
CUP 13-0044	0.0	0.0	0.0
CUP 13-0045	28.6	28.6	20.0
CUP 13-0046	14.7	14.7	10.3
CUP 13-0047	0.4	0.4	0.3
CUP 13-0048	9.1	9.1	6.4
CUP 13-0049	1.9	1.9	1.3
CUP 13-0050	99.6	99.6	69.7

TABLE 4.12-17
COMPENSATION FOR CORE BURROWING OWL FORAGING HABITAT UNDER THE BURROWING OWL FARM CONTRACT PLAN (ACRES)

CUP Area	Core Foraging Habitat (acres)	Base BUOW Friendly Crops/ Consistency (1:1)	BUOW Friendly Crops/ Consistency + BOSFP (0.7:1)[1]
CUP 13-0051	150.2	150.2	105.2
CUP 13-0052	0.0	0.0	0.0
Total	**614.0**	**614.0**	**430.0**

Source: AECOM 2014e, pp. 5-11-5-12).

[1]Reduced ratios reflect added conservation value of implementing BOSFP through (short-term) Farm Contracts and perpetual conservation easements. Ratios shown are proposed and will be finalized in Burrowing Owl Farm Contract Plan.

- Establish a Farm Contract incentive plan, including compensation for farmers entering into and successfully executing Farm Contracts and eligibility requirements.
- Identify minimum duration of Farm Contracts and other Farm Contract management practices.
- Establish an accounting mechanism for tracking acreage enrolled in Farm Contracts.
- Identify options to ensure enrolled acreage for Farm Contracts satisfy the established compensatory mitigation acreage requirement.
- Establish a monitoring and reporting program.
- Describe use of adaptive management in the implementation of the Burrowing Owl Farm Contract Plan, such as changes to BOSFPs and Farm Contract duration.
- Allow for purchase of conservation easements and include a mechanism to provide long-term funding to enroll lands in agricultural conservation easements with a requirement to implement BOSFP, under the discretion of the implementing entity. The Burrowing Owl Farm Contract Plan will finalize a reduced mitigation ratio to reflect the added conservation value of restricting land under an agricultural easement to implement BOSFP; the proposed mitigation ratio is 0.7:1 (**Table 4.12-17**).

The total number of acres encumbered at any one time (as Farm Contracts would be short-term agreements) shall depend on Project impacts to core BUOW foraging habitat, the portfolio of Farm Contracts (i.e., whether a property is implementing burrowing owl-friendly crops only or also implementing BOSFP), and the quantity of acres in conservation easements. [Note: A complete description of each mitigation option can be found in the LOA and CSP report (Appendix H included in **Appendix J** of this EIR).]

- In the event that BUOW will be excluded from the Project footprint and occupied burrows will be impacted, a mitigation site with suitable burrows and habitat must be secured. A BUOW Exclusion Plan must be developed and approved by CDFW prior to excluding BUOW from burrows. Specific objectives for BUOW protection addressed by this Plan are to describe exclusion methodology, burrow excavation procedures, identification of artificial burrow sites, and post-relocation monitoring and reporting.
- Occupied BUOW burrows directly impacted shall be replaced by installing artificial burrows on mitigation sites (i.e., conservation easements, in-lieu fee lands, Farm Contract land), or other land as agreed to by CDFW, at a ratio of 1:1. If the mitigation sites identified for the Project have at least two suitable BUOW burrows for each occupied burrow directly impacted, then artificial burrows shall not be installed. Suitable burrows are defined as burrows greater than approximately 4 inches (10 centimeters) in diameter (height and width) and greater than approximately 60 inches (150 centimeters) in depth. Burrows shall be scoped to ensure they are of proper depth for BUOW.

Timing/Implementation: *Prior to and during construction of the Full Build-out Scenario and each individual CUP (13-0036 thru 13-0052).*

Enforcement/Monitoring: *Imperial County Planning and Development Services Department/CDFW.*

In addition, compliance with Applicant proposed Measures/Project Design Features (as identified in Table 2.0-9, in Chapter 2.0 Project Description) and mitigation measures MM 4.12.1a, MM 4.12.1b, MM 4.12.1c, MM 4.12.1d, MM 4.12.1e, and MM 4.12.1f.

Significance After Mitigation

Upon compliance with Applicant proposed Measures/Project Design Features (as identified in Table 2.0-9, in Chapter 2.0, Project Description) and implementation of mitigation measures MM 4.12.1a, MM 4.12.1b, MM 4.12.1c, MM 4.12.1d, MM 4.12.1e, MM 4.12.1f and MM 4.12.7, potentially significant construction, operation and decommissioning-related direct and indirect impacts to BUOW would be reduced to **less than significant** for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Impacts to Non-listed Special Status Animal Species – Loggerhead Shrike

Impact 4.12.8 The BSA supports foraging and breeding habitat for the loggerhead shrike, a CDFW Species of Special Concern. Construction, operation and decommissioning of the Solar Energy Center at each individual CUP (13-0036 through 13-0052), and the Electric Collector Line Corridor may result in direct and indirect impacts to loggerhead shrike and loggerhead shrike foraging habitat. Construction, operation and decommissioning of the Mount Signal Solar Farm Project Gen-Tie upgrades may also result in indirect impacts to loggerhead shrike. Therefore, impacts to loggerhead shrike are considered **potentially significant.**

Loggerhead shrike was observed twice during surveys within the BSA. Agriculture fields provide suitable foraging habitat throughout the BSA and breeding habitat occurs in arrow weed scrub and tamarisk scrub within the Greeson Wash and New River (AECOM 2014e, p. 4-49).

FULL BUILD-OUT SCENARIO/ALL CUPS (13-0036 THRU 13-0052)

Construction

Direct Impacts

Solar Energy Center

Construction within the Solar Energy Center at each CUP (13-0036 thru 13-0052) would result in permanent removal of loggerhead shrike foraging and breeding habitat. The majority of direct impacts resulting from construction within of the Solar Energy Center /each CUPs (13-0036 thru 13-0052) would occur from removal of agriculture fields that are suitable for foraging (**Table 4.12-11**). Construction of the Solar Energy Center at each CUP (13-0036 thru 13-0052) may result in impacts to individuals from vehicular strikes or excavation equipment. Vehicular collisions occur most frequently during the vegetation clearing stage of construction, and involve eggs, nestlings, and recently fledged young that cannot safely avoid equipment. Potential direct impacts to loggerhead shrike also include impacts resulting from collisions with PV panels prior to the initiation of Project operations. Polarized light pollution caused by solar PV panels may affect foraging behaviors, navigation, and orientation in birds, leading to potential collisions with panels. Waterbirds have composed the majority of avian mortalities at the Desert Sunlight PV facility. The potential effect of polarized light pollution on loggerhead shrike is not known (AECOM 2014e, p. 4-50). Therefore, **potentially significant** direct impacts to loggerhead shrike and loggerhead shrike foraging and breeding habitat would occur during construction of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario

Electric Collector Line Corridor

Construction within the Electric Collector Line Corridor would result in permanent and temporary removal of loggerhead shrike foraging habitat. Direct permanent and temporary impacts resulting from installation of pole structures would occur within agriculture fields (**Table 4.12-12**). No impacts would occur to suitable breeding habitat. Construction of the Electric Collector Line Corridor may result in impacts to individuals from vehicular strikes or excavation equipment. Collisions occur most frequently during the vegetation clearing stage of construction, and involve eggs, nestlings, and recently fledged young that cannot safely avoid equipment. Potential direct impacts to loggerhead shrike also include impacts resulting from collisions with overhead wires and other structures associated with the electric collector lines prior to the initiation of Project operations (AECOM 2014e, p. 4-50). Therefore, **potentially significant** direct impacts to loggerhead shrike and loggerhead shrike foraging habitat would occur during construction of the Electric Collector Line Corridor for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mount Signal Solar Farm Project Gen-Tie Line

The Mount Signal Solar Farm Project Gen-Tie line pole structures that would be upgraded or installed as a result of Project-related construction are not located within suitable loggerhead shrike habitat. Therefore, **no direct impacts** to loggerhead shrike would result from construction work within the Mount Signal Solar Farm Project Gen-tie line corridor (AECOM 2014e, p. 4-50).

Full Build-out Scenario/All CUPs (13-0036 thru 13-0052)

Project construction of the Solar Energy Center at each CUP (13-0036 thru 13-0052) would impact loggerhead shrike foraging and breeding habitat, and direct collisions could occur. Therefore, **potentially significant** direct impacts to loggerhead shrike would occur during construction of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Indirect Impacts

Potential indirect impacts to loggerhead shrike are expected to be similar for construction of the Solar Energy Center at each CUP (13-0036 thru 13-0052), the Electric Collector Line Corridor improvements, and Mount Signal Solar Farm Project Gen-tie line upgrades (i.e. Full Build-out Scenario). Potential temporary indirect construction impacts to loggerhead shrike and loggerhead shrike habitats include habitat fragmentation, increased human presence, increased noise levels, nighttime lighting, dust, sedimentation, and erosion. Permanent indirect impacts could result from increased common raven and raptor predation associated with the construction of new elevated perching sites, including the Gen-Tie structures, perimeter fencing, and Gen-Tie lines. Trash present on site may attract ravens in numbers beyond those afforded by the normal conditions extant in the Project vicinity. These indirect impacts have the potential to degrade loggerhead shrike habitat and alter foraging and breeding behavior (AECOM 2014e, p. 4-50).

Construction activities to develop the 17 individual CUPs over a 10-year period (i.e. the Phased CUP Scenario) as opposed to construction of all 17 CUP at one time (i.e. Full Build-out Scenario) is assumed to result in a similar level of indirect impacts, given that impacts (e.g., noise, lighting) would be extended over a greater period of time. However, if the Full Build-out Scenario were implemented, the impacts would be more intense but shorter in duration compared to the Phased CUP Scenario. Thus, both the Full Build-out Scenario or the Phased CUP Scenario would result in a comparable indirect impact (AECOM 2014e, p. 4-50). Therefore, **potentially significant** indirect impacts to loggerhead shrike would occur during construction of both the Full Build-out Scenario and each CUP (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Operation

Direct Impacts

Solar Energy Center

Potential direct impacts to loggerhead shrike include mortality of individuals by vehicle collisions during Project operation. In addition, avian collisions with solar PV installations have been documented. Polarized light pollution caused by solar PV panels may affect foraging behaviors, navigation, and orientation in birds, leading to potential collisions with panels. Waterbirds have composed the majority of avian collisions with PV panels to date. The potential effect of polarized light pollution on loggerhead shrike is not known. Additionally, large areas of solar PV or CPV panels in the desert environment may mimic water bodies and inadvertently attract water bird species. Although studies have shown that glare intensity and/or reflectivity of CPV modules are lower than that of water and similar to asphalt, individuals may collide with solar panels and/or become stranded in solar fields resulting in fatalities (AECOM 2014e, pp. 66-67). Therefore, a **potentially significant** direct impact to loggerhead shrike would occur during operation of the Solar Energy Center for both the Full Build-out Scenario and each CUP (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Electric Collector Line Corridor

Potential direct impacts to loggerhead shrike include impacts resulting from collisions with overhead transmission line wires, tower guy wires, and other structures associated with electric collector lines. Avian power line collisions are a widespread problem with potentially significant local impacts when high-risk conditions are present. The level of risk depends on a combination of biological and physical factors, such as weather, design and placement of Gen-Tie structures, and species-specific behavior (AECOM 2014e, pp. 66-67). Therefore, a **potentially significant** direct impact to loggerhead shrike would occur during operation of the Electric Collector Line Corridor for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mount Signal Solar Farm Gen-Tie Line

Potential direct impacts to loggerhead shrike include impacts resulting from collisions with overhead Gen-Tie wires, Gen-Tie tower guy wires, and other structures associated with the Mount Signal Solar Farm Project Gen-Tie line. Avian power line collisions are a widespread problem with potentially significant local impacts when high-risk conditions are present. The level of risk depends on a combination of biological and physical factors, such as weather, design and placement of Gen-Tie structures, and species-specific behavior (AECOM 2014e, pp. 66-67). Therefore, a **potentially significant** direct impact to loggerhead shrike would occur during operation of the Mount Signal Solar Farm Project Gen-Tie line corridor.

Full Build-out Scenario/All CUPs (13-0036 thru 13-0052)

As discussed above, direct impacts to loggerhead shrike could result from collisions during operation of the Solar Energy Center at each individual CUP (13-0036 thru 13-0052), the Electric Collector Line Corridor, and the Mount Signal Solar Farm Project Gen-Tie line. Therefore, a **potentially significant** direct impact to loggerhead shrike would occur during operation of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Indirect Impacts

Full Build-out Scenario/All CUPs (13-0036 thru 13-0052)

Potential indirect impacts to loggerhead shrike from Project operation include increased noise levels, nighttime lighting, human use, operations-generated fugitive dust, erosion, sedimentation, storm water contaminant runoff, and the potential introduction and proliferation of invasive non-native plant species. Operations-related indirect impacts could result from increased common raven and raptor predation associated with elevated perching sites, including the Gen-Tie structures, perimeter fencing, and Gen-Tie lines. Trash present on-site may attract ravens in numbers beyond those afforded by the normal conditions extant in the Project vicinity. These indirect impacts have the potential to degrade loggerhead shrike habitat (AECOM 2014e, pp. 66-67). Therefore, a **potentially significant** indirect impact to loggerhead shrike habitat would occur during operation of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Decommissioning

Solar Energy Center

Decommissioning activities would result in direct and indirect impacts to loggerhead shrike similar to those described above for construction of the Solar Energy Center at all CUPs (13-0036 thru 13-0052). The Solar Energy Center at all CUPs (13-0036 thru 13-0052) would remain free of vegetation. Thus, wildlife species would not inhabit the solar array fields within the Project footprint. Most impacts would be indirect because loggerhead shrike would likely only remain within areas adjacent (i.e., off-site) to each CUP area. Direct impacts to loggerhead shrike may result from impacts to individuals as a result of vehicular or equipment strikes. Direct and indirect impacts in all CUP areas to loggerhead shrike would be temporary because the site would be restored to pre-Project soil conditions at the completion of decommissioning. Decommissioning is generally considered beneficial to biological resources. However, direct and indirect impacts to loggerhead shrike during decommissioning activities would be considered **potentially significant** (AECOM 2014e, p. 4-66) for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Electric Collector Line Corridor

Completion of decommissioning activities would result in restoration of the Electric Collector Line Corridor to pre-project conditions. Removal of electric collector lines and support structures would eliminate power lines creating potential for loggerhead shrike collisions. However, during

decommissioning activities, direct impacts to loggerhead shrike may result from impacts to individuals as a result of vehicular or equipment strikes. Therefore, direct impacts to loggerhead shrike during decommissioning activities within the Electric Collector Corridor Line would be considered **potentially significant** (AECOM 2014e, p. 4-69) for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mount Signal Solar Farm Gen-Tie Line

Completion of decommissioning activities would result in restoration of the Mount Signal Solar Farm Project Gen-Tie line corridor to pre-project conditions. Removal of Gen-Tie lines and support structures would eliminate power lines creating potential for loggerhead shrike collisions. However, during decommissioning activities, direct impacts to loggerhead shrike may result from impacts to individuals as a result of vehicular or equipment strikes. Therefore, direct impacts to loggerhead shrike during decommissioning activities within the Mount Signal Solar Farm Project Gen-Tie corridor would be considered **potentially significant** (AECOM 2014e, p. 4-66).

Full Build-out Scenario/All CUPs (13-0036 thru 13-0052)

Completion of decommissioning of both the Full Build-out Scenario and Phased CUP Scenario would be beneficial to loggerhead shrike through the removal of facilities and infrastructure that could indirectly impact loggerhead shrike foraging behavior. However, during decommissioning activities, potential for collision with equipment and electric collector/Gen-Tie lines and support structures would remain. Therefore, **potentially significant** impacts to loggerhead shrike would occur during decommissioning of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mitigation Measures

Implement Applicant proposed Measures/Project Design Features (as identified in Table 2.0-9, in Chapter 2.0 Project Description) and mitigation measures MM 4.12.1a, MM 4.12.1b, MM 4.12.1c, MM 4.12.1d, MM 4.12.1e, MM 4.12.1f, MM 4.12.14a and MM 4.12.14b.

Significance After Mitigation

Following implementation of Applicant proposed Measures/Project Design Features (as identified in Table 2.0-9, in Chapter 2.0 Project Description), and mitigation measures MM 4.12.1a, MM 4.12.1b, MM 4.12.1c, MM 4.12.1d, MM 4.12.1e, MM 4.12.1f, MM 4.12.14a and MM 4.12.14b, potential direct and indirect impacts to loggerhead shrike and loggerhead shrike habitat would be reduced to a level of **less than significant** during construction, operation and decommissioning for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario

Impacts to Non-listed Special Status Animal Species - Yellow-headed Blackbird

Impact 4.12.9 The Project area supports yellow-headed blackbird foraging habitat. The yellow-headed blackbird is a CDFW Species of Special Concern. Construction, operation and decommissioning of the Solar Energy Center at each individual CUP (13-0036 thru 13-0052), and Electrical Collector Line Corridor improvements would result in direct impacts to yellow-headed blackbird and yellow-headed blackbird foraging habitat. Therefore, impacts to yellow-headed blackbird are considered **potentially significant** for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Yellow-headed blackbird was observed three times during surveys. Suitable foraging habitat exists throughout the BSA in agricultural fields. No breeding habitat occurs within the BSA (AECOM 2014e, p. 4-51).

FULL BUILD-OUT SCENARIO/ALL CUPs (13-0036 THRU 13-0052)

Construction

Direct Impacts

Solar Energy Center

Construction of both the Full Build-out Scenario and each CUP (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario would result in permanent removal of agriculture fields, which are yellow-headed blackbird foraging habitat (**Table 4.12-11**). Construction of solar facilities within the Solar Energy Center at each CUP (13-0036 thru 13-0052) may also result in impacts to individuals from vehicular strikes or excavation equipment. Collisions occur most frequently during the vegetation clearing stage of construction and involve eggs, nestlings, and recently fledged young that cannot safely avoid equipment. Potential direct impacts to yellow-headed blackbird also include impacts resulting from collisions with PV panels prior to the initiation of Project operations. Polarized light pollution caused by solar PV panels may affect foraging behaviors, navigation, and orientation in birds, leading to potential collisions with panels. Waterbirds have composed the majority of avian mortalities at the Desert Sunlight PV facility. The potential effect of polarized light pollution on yellow-headed blackbird is not known (AECOM 2014e, p. 4-52). Therefore, a **potentially significant** direct impact to yellow-headed blackbird and yellow-headed blackbird foraging habitat would occur as a result of construction of Solar Energy Center for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario**.**

Electrical Collector Line Corridor

Construction within the Electric Collector Line Corridor would result in permanent and temporary removal of yellow-headed blackbird foraging habitat. Direct permanent and temporary impacts resulting from installation of pole structures would occur within agriculture fields (**Table 4.12-12**). Construction of the Electric Collector Line Corridor may result in impacts to individuals from vehicular strikes or excavation equipment. Collisions occur most frequently during the vegetation clearing stage of construction, and involve eggs, nestlings, and recently fledged young that cannot safely avoid equipment. Potential direct impacts to yellow-headed blackbird also include impacts resulting from collisions with overhead wires and other structures associated with the electric collector lines prior to the initiation of Project operation (AECOM 2014e, p. 4-51). Therefore, construction within the Electric Collector Line Corridor would result in a **potentially significant** impact to yellow-headed blackbird and yellow-headed blackbird foraging habitat for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mount Signal Solar Farm Project Gen-Tie Line

The Mount Signal Solar Farm Project Gen-Tie line pole structures that would be upgraded or installed are not located within suitable yellow-headed blackbird habitat. Therefore, **no direct impacts** to yellow-headed blackbird would result from construction work within the Mount Signal Solar Farm Project Gen-Tie line corridor (AECOM 2014e, p. 4-51).

Full Build-out Scenario

As discussed above, implementation of the proposed Project would result in direct impacts to yellow-headed blackbird and yellow-headed blackbird foraging habitat during construction of the Solar Energy Center and Electrical Collector Line Corridor. Therefore, a **potentially significant** direct impact would occur during construction of the Full Build-out Scenario and each individual CUP (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Indirect Impacts

Potential indirect impacts to yellow-headed blackbird are expected to be similar during construction of the Solar Energy Center at each individual CUP (13-0036 thru 13-0052), the Electrical Collector Corridor Line improvements, and Mount Signal Solar Farm Project Gen-Tie line upgrades. Potential temporary indirect construction impacts to yellow-headed blackbird and its habitats include habitat fragmentation, increased human presence, increased noise levels, nighttime lighting, dust, sedimentation, and erosion. Permanent indirect impacts could result from increased common raven and raptor predation associated with the construction of new elevated perching sites, including the Gen-Tie structures, perimeter fencing, and Gen-Tie lines. Trash present on-site may attract ravens in numbers beyond those afforded by the normal conditions extant in the Project vicinity. These indirect impacts have the potential to degrade yellow-headed blackbird habitat and alter foraging and breeding behavior (AECOM 2014e, p. 4-52).

Construction activities to develop the 17 individual CUPs over a 10-year period (i.e. the Phased CUP Scenario) as opposed to constructing all 17 CUPs at one time (i.e. the Full Build-out Scenario) are assumed to have a similar level of indirect impacts, given that impacts (e.g., noise, lighting) would be extended over a greater period of time. However, if the Full Build-out Scenario were implement, the impacts would be more intense but shorter in duration compared to the Phased CUP Scenario. Thus, either the Full Build-out Scenario or the Phased CUP Scenario would result in a comparable indirect impact (AECOM 2014e, p. 4-52). Therefore, a **potentially significant** indirect impact to yellow-headed blackbird and yellow-headed blackbird foraging habitat would occur during Project construction for both the Full Build-out Scenario and each individual CUP (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Operation

Direct Impacts

Solar Energy Center

Potential direct impacts to yellow-headed blackbird at the Solar Energy Center at each individual CUP (13-0036 thru 13-0052) include mortality of individuals by vehicle collisions during Project operation. In addition, avian collisions with solar PV installations have been documented. Polarized light pollution caused by solar PV panels may affect foraging behaviors, navigation, and orientation in birds, leading to potential collisions with panels. Waterbirds have composed the majority of avian collisions with PV panels to date, and the potential effect of polarized light pollution on yellow-headed blackbird is not known. Additionally, large areas of solar PV or CPV panels in the desert environment may mimic water bodies and inadvertently attract water bird species. Although studies have shown that glare intensity and/or reflectivity of CPV modules are lower than that of water and similar to asphalt, individuals may collide with solar panels and/or become stranded in solar fields resulting in fatalities (AECOM 2014e, pp. 66-67). Therefore, a **potentially significant** direct impact to yellow-headed blackbird would occur during operation of the Solar Energy Center for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Electric Collector Line Corridor

Potential direct impacts to yellow-headed blackbird within the Electric Collector Line Corridor include impacts resulting from collisions with overhead transmission line wires, tower guy wires, and other structures associated with electric collector lines. Avian power line collisions are a widespread problem with potentially significant local impacts when high-risk conditions are present. The level of risk depends on a combination of biological and physical factors, such as weather, design and placement of Gen-Tie structures, and species-specific behavior (AECOM 2014e, pp. 66-67). Therefore, a **potentially significant**

direct impact to yellow-headed blackbird would occur during operation of the Electric Collector Line Corridor for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mount Signal Solar Farm Gen-Tie Line

Potential direct impacts to yellow-headed blackbird within the Mount Signal Solar Farm Project Gen-Tie transmission corridor include impacts resulting from collisions with overhead Gen-Tie wires, Gen-Tie tower guy wires, and other structures associated with the Mount Signal Solar Farm Project Gen-Tie line. Avian power line collisions are a widespread problem with potentially significant local impacts when high-risk conditions are present. The level of risk depends on a combination of biological and physical factors, such as weather, design and placement of Gen-Tie structures, and species-specific behavior (AECOM 2014e, pp. 66-67). Therefore, a **potentially significant** direct impact to yellow-headed blackbird would occur during operation of the Mount Signal Solar Farm Project Gen-Tie line corridor.

Full Build-out Scenario/Phased CUP Scenario

As discussed above, direct impacts to yellow-headed blackbird could result from collisions during operation of the Solar Energy Center at each individual CUP (13-0036 thru 13-0052), the Electric Collector Line Corridor, and the Mount Signal Solar Farm Project Gen-Tie line. Therefore, a **potentially significant** direct impact to yellow-headed blackbird would occur during operation of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Indirect Impacts

Full Build-out Scenario/Phased CUP Scenario

Potential indirect impacts to yellow-headed blackbird from Project operation include increased noise levels, nighttime lighting, human use, operations-generated fugitive dust, erosion, sedimentation, storm water contaminant runoff, and the potential introduction and proliferation of invasive non-native plant species. Operations-related indirect impacts could result from increased common raven and raptor predation associated with elevated perching sites, including the Gen-Tie structures, perimeter fencing, and Gen-Tie lines. Trash present on-site may attract ravens in numbers beyond those afforded by the normal conditions extant in the Project vicinity. These indirect impacts have the potential to degrade yellow-headed blackbird habitat (AECOM 2014e, pp. 66-67). Therefore, a **potentially significant** indirect impact to yellow-headed blackbird habitat would occur during operation of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Decommissioning

Solar Energy Center

Decommissioning activities would result in direct and indirect impacts to yellow-headed blackbird and yellow-headed blackbird foraging habitat similar to those described above for construction of the Solar Energy Center at all CUPs (13-0036 thru 13-0052). The Solar Energy Center at all CUPs (13-0036 thru 13-0052) would remain free of vegetation. Thus, wildlife species would not inhabit the solar array fields within the Project footprint. Most impacts would be indirect because yellow-headed blackbird foraging habitat would likely remain only within areas adjacent (i.e., off-site) to each CUP area. Direct impacts to yellow-headed blackbird may result from impacts to individuals as a result of vehicular or equipment strikes. Direct and indirect impacts in all CUP areas to yellow-headed blackbird and yellow-headed blackbird foraging habitat would be temporary because the site would be restored to pre-Project soil conditions at the completion of decommissioning. Decommissioning is generally considered beneficial to biological resources. However, direct and indirect impacts to yellow-headed blackbird and yellow-headed blackbird foraging habitat during decommissioning activities would be considered **potentially**

significant (AECOM 2014e, p. 4-69) for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Electric Collector Line Corridor

Completion of decommissioning activities would result in restoration of the Electric Collector Line Corridor to pre-project conditions. Removal of electric collector lines and support structures would eliminate power lines creating potential for yellow-headed blackbird collisions. However, during decommissioning activities, direct impacts to yellow-headed blackbird may result from impacts to individuals as a result of vehicular or equipment strikes. Therefore, direct impacts to yellow-headed blackbird and yellow-headed blackbird foraging habitat would be considered **potentially significant** (AECOM 2014e, p. 4-69) during decommissioning activities within the Electric Collector Corridor Line for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mount Signal Solar Farm Gen-Tie Line

Completion of decommissioning activities would result in restoration of the Mount Signal Solar Farm Project Gen-Tie line corridor to pre-project conditions. Removal of Gen-Tie lines and support structures would mean power lines creating potential for yellow-headed blackbird collisions would no longer be in place. However, during decommissioning activities, direct impacts to yellow-headed blackbird may result from impacts to individuals as a result of vehicular or equipment strikes. Therefore, direct impacts to yellow-headed blackbird during decommissioning activities within the Mount Signal Solar Farm Project Gen-Tie corridor would be considered **potentially significant** (AECOM 2014e, p. 4-69).

Full Build-out Scenario/Phased CUP Scenario

Completion of decommissioning of the Project would be beneficial to yellow-headed blackbird through the removal of facilities and infrastructure that could indirectly impact yellow-headed blackbird foraging behavior. However, during decommissioning activities, potential for collision with equipment and electric collector/Gen-Tie lines and support structures would remain. Therefore, **potentially significant** impacts to yellow-headed blackbird would occur during decommissioning of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mitigation Measures

Implement Applicant proposed Measures/Project Design Features (as identified in Table 2.0-9, in Chapter 2.0 Project Description) and mitigation measures MM 4.12.1a, MM 4.12.1b, MM 4.12.1c, MM 4.12.1d, MM 4.12.1e, MM 4.12.1f, MM 4.12.14a and MM 4.12.14b.

Significance After Mitigation

Upon implementation of Applicant proposed Measures/Project Design Features (as identified in Table 2.0-9, in Chapter 2.0 Project Description) and mitigation measures MM 4.12.1a, MM 4.12.1b, MM 4.12.1c, MM 4.12.1d, MM 4.12.1e, MM 4.12.1f, MM 4.12.14a and MM 4.12.14b, potential direct and indirect impacts to yellow-headed blackbird and yellow-headed blackbird habitat would be reduced to a level of **less than significant** during construction, operation and decommissioning of both the Full Build-out Scenario and Phased CUP Scenario.

Impacts to Non-listed Special Status Animal Species - Merlin

Impact 4.12.10 The BSA supports merlin winter foraging habitat. Merlin is a CDFW Watch List Species. Construction, operation and decommissioning of the Solar Energy Center at each CUP (13-0036 thru 13-0052), the Electric Collector Line Corridor improvements, and the Mount Signal Solar Farm Project Gen-Tie upgrades would result in direct and indirect impacts to merlin and merlin winter foraging habitat. Therefore, impacts to merlin and merlin foraging habitat are considered **potentially significant** for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario**.**

Merlin was observed once during surveys. Suitable winter foraging habitat exists throughout the BSA in agricultural fields. However, no merlin breeding habitat occurs within the BSA (AECOM 2014e, p. 4-52).

FULL BUILD-OUT SCENARIO/ALL CUPS (13-0036 THRU 13-0052)

Construction

Direct Impacts

Solar Energy Center

Construction within the Solar Energy Center at each CUP (13-0036 thru 13-0052) would result in permanent removal of agriculture fields, which are merlin winter foraging habitat (**Table 4.12-11**). Construction of solar facilities within Solar Energy Center at each CUP (13-0036 thru 13-0052) may result in impacts to individuals from vehicular strikes or excavation equipment. Collisions occur most frequently during the vegetation clearing stage of construction and involve eggs, nestlings, and recently fledged young that cannot safely avoid equipment. Potential direct impacts to merlin also include impacts resulting from collisions with PV panels prior to the initiation of Project operations. Polarized light pollution caused by solar PV panels may affect foraging behaviors, navigation, and orientation in birds, leading to potential collisions with panels. Waterbirds have composed the majority of avian mortalities at the Desert Sunlight PV facility. The potential effect of polarized light pollution on merlin is not known. This species does not breed within the Imperial Valley and impacts to eggs, nestlings, and recently fledged young would not occur (AECOM 2014e, p. 4-53). Therefore, a **potentially significant** direct impact to merlin and merlin foraging habitat would occur during construction of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario**.**

Electric Collector Line Corridor

Construction within the Electric Collector Line Corridor would result in permanent and temporary removal of merlin winter foraging habitat. Direct permanent and temporary impacts resulting from installation of pole structures would occur within agriculture fields (**Table 4.12-12**). This species does not breed within the Imperial Valley and impacts to eggs, nestlings, and recently fledged young would not occur (AECOM 2014e, p. 4-53). However, construction of the Electric Collector Line Corridor may result in impacts to individuals from vehicular strikes or excavation equipment. Vehicular collisions occur most frequently during the vegetation clearing stage of construction, and involve eggs, nestlings, and recently fledged young that cannot safely avoid equipment. Potential direct impacts to merlin also include impacts resulting from collisions with overhead wires and other structures associated with the electric collector lines prior to the initiation of Project operations. Therefore, a **potentially significant** direct impact to merlin and merlin foraging habitat would occur during construction of the Electric Collector Line Corridor for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mount Signal Solar Farm Project Gen-Tie Line

The Mount Signal Solar Farm Project Gen-Tie line pole structures that would be upgraded or installed are not located within suitable merlin habitat. Potential direct impacts to merlin could result from collisions with overhead Gen-Tie wires, Gen-Tie tower guy wires, and other structures associated with the Mount Signal Solar Farm Project Gen-Tie line prior to the initiation of Project operations (AECOM 2014e, pp. 4-53). Therefore, **potentially significant** direct impacts to merlin would result from construction activities within the Mount Signal Solar Farm Project Gen-Tie line corridor.

Full Build-Out Scenario/All CUPs (13-0036 thru 13-0052)

As discussed above, implementation of the proposed Project would result in direct impacts to merlin and merlin winter foraging habitat during construction of the Solar Energy Center at each CUP (13-0036 thru 13-0052), the Electric Collector Line Corridor improvements, and the Mount Signal Solar Farm Project Gen-Tie upgrades. Therefore, a **potentially significant** direct impact to merlin and merlin foraging habitat would occur for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario**.**

Indirect Impacts

Potential indirect impacts to merlin are expected to be similar for construction of the Solar Energy Center at each CUP (13-0036 thru 13-0052), the Electrical Collector Line Corridor improvements, and Mount Signal Solar Farm Project Gen-Tie line upgrades. Potential temporary indirect construction impacts to merlin and its habitats include habitat fragmentation, increased human presence, increased noise levels, nighttime lighting, dust, sedimentation, and erosion. These indirect impacts have the potential to degrade merlin habitat and alter foraging behavior (AECOM 2014e, p. 4-53).

Construction activities to develop the 17 individual CUPs over a 10-year period (i.e. the Phased CUP Scenario) as opposed to constructing all 17 CUPs at one time (i.e. the Full Build-out Scenario) are assumed to have a similar level of indirect impacts, given that impacts (e.g., noise, lighting) would be extended over a greater period of time. However, the impacts associated with the Full Build-out Scenario would be more intense but shorter in duration than the Phased CUP Scenario. Thus, either the Full Build-out Scenario or the Phased CUP Scenario would result in a comparable indirect impact (AECOM 2014e, p. 4-53). Therefore, a **potentially significant** indirect impact to merlin and merlin foraging habitat would occur during construction of both the Full Build-out Scenario and each CUP (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Operation

Direct Impacts

Solar Energy Center

Potential direct impacts to merlin during Project operations at the Solar Energy Center at each individual CUP (13-0036 thru 13-0052) include mortality of individuals by vehicle collisions. In addition, avian collisions with solar PV installations have been documented. Polarized light pollution caused by solar PV panels may affect foraging behaviors, navigation, and orientation in birds, leading to potential collisions with panels. The potential effect of polarized light pollution on merlin is not known. Additionally, large areas of solar PV or CPV panels in the desert environment may mimic water bodies and inadvertently attract waterbird species. Although studies have shown that glare intensity and/or reflectivity of CPV modules are lower than that of water and similar to asphalt, individuals may collide with solar panels and/or become stranded in solar fields resulting in fatalities. Most evidence of this phenomenon is anecdotal and little research exists as to the actual cause of mortalities. Studies have shown that glare

intensity and/or reflectivity of CPV modules are lower than that of water and similar to asphalt (AECOM 2014e, pp. 66-67). Therefore, a **potentially significant** direct impact to merlin would occur during operation of the Solar Energy Center for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Electric Collector Line Corridor

Potential direct impacts to merlin within the Electric Collector Line Corridor include impacts resulting from collisions with overhead transmission line wires, tower guy wires, and other structures associated with electric collector lines. Avian power line collisions are a widespread problem with potentially significant local impacts when high-risk conditions are present. The level of risk depends on a combination of biological and physical factors such as weather, design and placement of Gen-Tie structures, and species-specific behavior (AECOM 2014e, pp. 66-67). Therefore, a **potentially significant** direct impact to merlin would occur during operation of the Electric Collector Line Corridor for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mount Signal Solar Farm Gen-Tie Line

Potential direct impacts to merlin within the Mount Signal Solar Farm Project Gen-Tie transmission corridor include impacts resulting from collisions with overhead Gen-Tie wires, Gen-Tie tower guy wires, and other structures associated with the Mount Signal Solar Farm Project Gen-Tie line. Avian power line collisions are a widespread problem with potentially significant local impacts when high-risk conditions are present. The level of risk depends on a combination of biological and physical factors, such as weather, design and placement of Gen-Tie structures, and species-specific behavior (AECOM 2014e, pp. 66-67). Therefore, a **potentially significant** direct impact to merlin would occur during operation of the Mount Signal Solar Farm Project Gen-Tie line corridor.

Full Build-Out Scenario/All CUPs (13-0036 thru 13-0052)

As discussed above, direct impacts to merlin could result from collisions during operation of the Solar Energy Center at each individual CUP (13-0036 thru 13-0052), the Electric Collector Line Corridor, and the Mount Signal Solar Farm Project Gen-Tie line. Therefore, a **potentially significant** direct impact to merlin would occur during operation of for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Direct Impacts

Full Build-Out Scenario/All CUPs (13-0036 thru 13-0052)

Potential indirect impacts to merlin foraging habitat from Project operation include increased noise levels, nighttime lighting, human use, operations-generated fugitive dust, erosion, sedimentation, storm water contaminant runoff, and the potential introduction and proliferation of invasive non-native plant species. Operations-related indirect impacts could result from increased common raven and raptor predation associated with elevated perching sites, including the Gen-Tie structures, perimeter fencing, and Gen-Tie lines. Any construction debris or trash, if present on-site, may attract ravens in numbers beyond those afforded by the normal conditions extant in the Project vicinity. These indirect impacts have the potential to degrade merlin habitat (AECOM 2014e, pp. 66-67). Therefore, a **potentially significant** indirect impact to merlin habitat would occur during operation of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Decommissioning

Solar Energy Center

Decommissioning activities would result in direct and indirect impacts to merlin and merlin foraging habitat similar to those described above for construction of the Solar Energy Center at all CUPs (13-0036 thru 13-0052). The Solar Energy Center at all CUPs (13-0036 thru 13-0052) would remain free of vegetation. Thus, wildlife species would not inhabit the solar array fields within the Project footprint. Most impacts would be indirect because merlin foraging habitat would likely only remain within areas adjacent (i.e., off-site) to each CUP area. Direct impacts to merlin may result from impacts to individuals as a result of vehicular or equipment strikes. Direct and indirect impacts in all CUP areas to merlin and merlin foraging habitat would be temporary because the site would be restored to pre-Project soil conditions at the completion of decommissioning. Decommissioning is generally considered beneficial to biological resources. However, direct and indirect impacts to merlin and merlin foraging habitat would be considered **potentially significant** (AECOM 2014e, p. 4-69) during decommissioning activities at the Solar Energy Center Facility for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Electric Collector Line Corridor

Completion of decommissioning activities would result in restoration of the Electric Collector Line Corridor to pre-project conditions. Removal of electric collector lines and support structures would mean power lines creating potential for merlin collisions would no longer be in place. However, during decommissioning activities, direct impacts to merlin may result from impacts to individuals as a result of vehicular or equipment strikes. Therefore, direct impacts to merlin and merlin foraging habitat would be considered **potentially significant** (AECOM 2014e, p. 4-69) during decommissioning activities within the Electric Collector Corridor Line for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mount Signal Solar Farm Gen-Tie Line

Completion of decommissioning activities would result in restoration of the Mount Signal Solar Farm Project Gen-Tie line corridor to pre-project conditions. Removal of Gen-Tie lines and support structures would mean power lines creating potential for merlin collisions would no longer be in place. However, during decommissioning activities, direct impacts to merlin may result from impacts to individuals as a result of vehicular or equipment strikes. Therefore, direct impacts to merlin during decommissioning activities within the Mount Signal Solar Farm Project Gen-Tie corridor would be considered **potentially significant** (AECOM 2014e, p. 4-69).

Full Build-Out Scenario/All CUPs (13-0036 thru 13-0052)

Completion of decommissioning of the Full Build-out Scenario would be beneficial to merlin through the removal of facilities and infrastructure that could indirectly impact merlin foraging behavior. However, during decommissioning activities, potential for collision with equipment and electric collector/Gen-Tie lines and support structures would remain. Therefore, **potentially significant** impacts to merlin would occur during decommissioning of for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mitigation Measures

Implement Applicant proposed Measures/Project Design Features (as identified in Table 2.0-9, in Chapter 2.0 Project Description) and mitigation measures MM 4.12.1a, MM 4.12.1b, MM 4.12.1c, MM 4.12.1d, MM 4.12.1e, MM 4.12.1f, and MM 4.12.14a.

Significance After Mitigation

Following implementation of Applicant proposed Measures/Project Design Features (as identified in Table 2.0-9, in Chapter 2.0 Project Description) and mitigation measures MM 4.12.1a, MM 4.12.1b, MM 4.12.1c, MM 4.12.1d, MM 4.12.1e, MM 4.12.1f, MM 4.12.14a and MM 4.12.14b, potential direct and indirect impacts to merlin and merlin foraging habitat during construction, operation and decommissioning of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario would be reduced to a level of **less than significant**.

Impacts to Non-listed Special Status Animal Species – Mountain Plover

Impact 4.12.11 The BSA supports mountain plover winter foraging habitat. Mountain plover is a CDFW Species of Special Concern. Construction, operation and decommissioning of the Solar Energy Center at each individual CUP (13-0036 thru 13-0052) and the Electric Collector Line Corridor improvements could result in direct and impacts to mountain plover and mountain plover foraging habitat. Therefore, impacts to mountain plover and mountain plover foraging habitat are considered **potentially significant** for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario**.**

FULL BUILD-OUT SCENARIO/ALL CUPs (13-0036 THRU 13-0052)

Mountain plover was not observed during surveys, but has high potential to occur in the BSA. Suitable winter foraging habitat exists throughout the BSA in agricultural fields. No breeding habitat occurs within the BSA (AECOM 2014e, p. 4-54).

Construction

Direct Impacts

Solar Energy Center

Construction of Solar Energy Center at all CUPs (13-0036 thru 13-0052) would result in permanent removal of agriculture fields, which are mountain plover winter foraging habitat (**Table 4.12-11**). This species does not breed within the Imperial Valley and impacts to eggs, nestlings, and recently fledged young would not occur (AECOM 2014e, p. 4-54). However, construction of solar facilities within the Solar Energy Center at all CUPs (13-0036 thru 13-0052) may result in impacts to individuals from vehicular strikes or excavation equipment. Vehicular collisions occur most frequently during the vegetation clearing stage of construction, and involve eggs, nestlings, and recently fledged young that cannot safely avoid equipment. Potential direct impacts to migrating mountain plover also include impacts resulting from collisions with PV panels prior to the initiation of Project operations. Polarized light pollution caused by solar PV panels may affect foraging behaviors, navigation, and orientation in birds, leading to potential collisions with panels. Water birds have composed the majority of avian collisions with PV panels to date, and the potential effect of polarized light pollution on mountain plover is not known. Therefore, a **potentially significant** direct impact to mountain plover and mountain plover foraging habitat would occur during construction of the Solar Energy Center for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Electric Collector Line Corridor

Construction within the Electric Collector Line Corridor would result in permanent and temporary removal of mountain plover winter foraging habitat. This species does not breed within the Imperial Valley and impacts to eggs, nestlings, and recently fledged young would not occur (AECOM 2014e, p. 4-54). However, direct permanent and temporary impacts resulting from installation of pole structures would occur within agriculture fields (**Table 4.12-12**). Construction of the Electric Collector Line Corridor

may result in impacts to individuals from vehicular strikes or excavation equipment. Collisions occur most frequently during the vegetation clearing stage of construction, and involve eggs, nestlings, and recently fledged young that cannot safely avoid equipment. Potential direct impacts to mountain plover also include impacts resulting from collisions with overhead wires and other structures associated with the electric collector lines prior to the initiation of Project operations. Therefore, a **potentially significant** direct impact to mountain plover and mountain plover foraging habitat would occur during construction of the Electrical Collector line Corridor for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mount Signal Solar Farm Project Gen-Tie Line

The Mount Signal Solar Farm Project Gen-Tie line pole structures that would be upgraded or installed are not located within suitable mountain plover habitat. Therefore, **no direct impacts** to mountain plover would result from construction work within the Mount Signal Solar Farm Project Gen-Tie line corridor (AECOM 2014e, p. 4-55).

Full Build-Out Scenario/All CUPs (13-0036 thru 13-0052)

As discussed above, implementation of the proposed Full Build-out Scenario/all CUP (13-0036 thru 13-0052) would result in direct impacts to mountain plover and mountain plover winter foraging habitat during construction of the Solar Energy Center and Electric Connector Line Corridor. Therefore, **potentially significant** direct impacts to mountain plover and mountain plover winter foraging habitat would occur as a result of construction activities associated with both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Indirect Impacts

Potential indirect impacts to mountain plover are expected to be similar for construction of the Solar Energy Center at all 17 CUPs, the Electrical Collector Line Corridor improvements, and Mount Signal Solar Farm Project Gen-Tie line upgrades. Potential temporary indirect construction impacts to mountain plover and its habitats include habitat fragmentation, increased human presence, increased noise levels, nighttime lighting, dust, sedimentation, and erosion. Permanent indirect impacts could result from increased raptor predation associated with the construction of new elevated perching sites, including the Gen-Tie structures, perimeter fencing, and Gen-Tie lines. These indirect impacts have the potential to degrade mountain plover habitat and alter foraging behavior (AECOM 2014e, pp. 4-56 and 4-57).

Construction activities to develop the 17 individual CUPs over a 10-year period (i.e. the Phased CUP Scenario) as opposed to constructing all 17 CUPs at one time (i.e. the Full Build-out Scenario) are assumed to have a similar level of indirect impacts, given that impacts (e.g., noise, lighting) would be extended over a greater period of time. However, if the Full Build-out Scenario were implemented, the impacts would be more intense Thus, either the Full Build-out Scenario or the Phased CUP Scenario would result in a comparable indirect impact (AECOM 2014e, p. 4-55). Therefore, a **potentially significant** indirect impact to mountain plover habitat and foraging behavior would occur during the construction of both the Full Build-out Scenario and each individual CUP (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Operation

Direct Impacts

Solar Energy Center

Potential direct impacts to mountain plover at the Solar Energy Center at each individual CUP (13-0036 thru 13-0052) include mortality of individuals by vehicle collisions during Project operations. In addition,

avian collisions with solar PV installations have been documented. Potential direct impacts to mountain plover include impacts resulting from collisions with PV panels. Polarized light pollution caused by solar PV panels may affect foraging behaviors, navigation, and orientation in birds, leading to potential collisions with panels. Waterbirds have composed the majority of avian mortalities at the Desert Sunlight PV facility. The potential effect of polarized light pollution on mountain plover is not known. Additionally, large areas of solar PV or CPV panels in the desert environment may mimic water bodies and inadvertently attract water bird species. Although studies have shown that glare intensity and/or reflectivity of CPV modules are lower than that of water and similar to asphalt, individuals may collide with solar panels and/or become stranded in solar fields resulting in fatalities (AECOM 2014e, pp. 66-67). Therefore, a **potentially significant** direct impact to mountain plover would occur during operation of the Solar Energy Center for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Electric Collector Line Corridor

Potential direct impacts to mountain plover within the Electric Collector Line Corridor include impacts resulting from collisions with overhead transmission line wires, tower guy wires, and other structures associated with electric collector lines. Avian power line collisions are a widespread problem with potentially significant local impacts when high-risk conditions are present. The level of risk depends on a combination of biological and physical factors, such as weather, design and placement of Gen-Tie structures, and species-specific behavior (AECOM 2014e, pp. 66-67). Therefore, a **potentially significant** direct impact to mountain plover would occur during operation of the Electric Collector Line Corridor for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario..

Mount Signal Solar Farm Gen-Tie Line

Potential direct impacts to mountain plover within the Mount Signal Solar Farm Project Gen-Tie transmission corridor include impacts resulting from collisions with overhead Gen-Tie wires, Gen-Tie tower guy wires, and other structures associated with the Mount Signal Solar Farm Project Gen-Tie line. Avian power line collisions are a widespread problem with potentially significant local impacts when high-risk conditions are present. The level of risk depends on a combination of biological and physical factors, such as weather, design and placement of Gen-Tie structures, and species-specific behavior (AECOM 2014e, pp. 66-67). Therefore, a **potentially significant** direct impact to mountain plover would occur during operation of the Mount Signal Solar Farm Project Gen-Tie line corridor.

Full Build-Out Scenario/All CUPs (13-0036 thru 13-0052)

As discussed above, direct impacts to mountain plover could result from collisions during operation of the Solar Energy Center at each individual CUP (13-0036 thru 13-0052), the Electric Collector Line Corridor, and the Mount Signal Solar Farm Project Gen-Tie line. Therefore, a **potentially significant** direct impact to mountain plover would occur during operation of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Indirect Impacts

Full Build-Out Scenario/All CUPs (13-0036 thru 13-0052)

Potential indirect impacts to mountain plover from Project operation include increased noise levels, nighttime lighting, human use, operations-generated fugitive dust, erosion, sedimentation, storm water contaminant runoff, and the potential introduction and proliferation of invasive non-native plant species. Operations-related indirect impacts could result from increased common raven and raptor predation associated with elevated perching sites, including the Gen-Tie structures, perimeter fencing, and Gen-Tie lines. Trash present on-site may attract ravens in numbers beyond those afforded by the

normal conditions extant in the Project vicinity. These indirect impacts have the potential to degrade mountain plover habitat (AECOM 2014e, pp. 66-67). Therefore, a **potentially significant** indirect impact to mountain plover habitat would occur during operation of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Decommissioning

Solar Energy Center

Decommissioning activities would result in direct and indirect impacts to mountain plover and mountain plover foraging habitat similar to those described above for construction of the Solar Energy Center at all CUPs (13-0036 thru 13-0052). The Solar Energy Center at all CUPs (13-0036 thru 13-0052) would remain free of vegetation; thus, wildlife species would not inhabit the solar array fields within the Project footprint. Most impacts would be indirect because mountain plover foraging habitat would likely only remain within areas adjacent (i.e., off-site) to each CUP area. Direct impacts to mountain plover may result from impacts to individuals as a result of vehicular or equipment strikes. Direct and indirect impacts in all CUP areas to mountain plover and mountain plover foraging habitat would be temporary because the site would be restored to pre-Project soil conditions at the completion of decommissioning. Decommissioning is generally considered beneficial to biological resources. However, direct and indirect impacts to mountain plover and mountain plover foraging habitat would be considered **potentially significant** (AECOM 2014e, p. 4-69) during decommissioning activities for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Electric Collector Line Corridor

Completion of decommissioning activities would result in restoration of the Electric Collector Line Corridor to pre-project conditions. Removal of electric collector lines and support structures would eliminate power lines creating potential for migratory and nesting bird collisions. However, during decommissioning activities, direct impacts to mountain plover may result from impacts to individuals as a result of vehicular or equipment strikes. Therefore, direct impacts to mountain plover and mountain plover foraging habitat during decommissioning activities within the Electric Collector Corridor Line would be considered **potentially significant** (AECOM 2014e, p. 4-69) for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mount Signal Solar Farm Gen-Tie Line

Completion of decommissioning activities would result in restoration of the Mount Signal Solar Farm Project Gen-Tie line corridor to pre-project conditions. Removal of Gen-Tie lines and support structures would eliminate power lines creating potential for mountain plover collisions. However, during decommissioning activities, direct impacts to mountain plover may result from impacts to individuals as a result of vehicular or equipment strikes. Therefore, direct impacts to mountain plover and mountain plover foraging habitat during decommissioning activities within the Mount Signal Solar Farm Project Gen-Tie corridor would be considered **potentially significant** (AECOM 2014e, p. 4-69).

Full Build-Out Scenario/All CUPs (13-0036 thru 13-0052)

Completion of Project decommissioning would be beneficial to mountain plover through the removal of facilities and infrastructure that could adversely impact mountain plover foraging behavior. However, during decommissioning activities, potential for collision with equipment and electric collector/Gen-Tie lines and support structures would remain. Therefore, **potentially significant** impacts to mountain plover would occur during decommissioning of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mitigation Measures

Implement Applicant proposed Measures/Project Design Features (as identified in Table 2.0-9, in Chapter 2.0 Project Description) and mitigation measures MM 4.12.1a, MM 4.12.1b, MM 4.12.1c, MM 4.12.1d, MM 4.12.1e, MM 4.12.1f, MM 4.12.14a and MM 4.12.14b.

Significance After Mitigation

Following implementation of Applicant proposed Measures/Project Design Features (as identified in Table 2.0-9, in Chapter 2.0 Project Description) and mitigation measures MM 4.12.1a, MM 4.12.1b, MM 4.12.1c, MM 4.12.1d, MM 4.12.1e, MM 4.12.1f, MM 4.12.14a and MM 4.12.14b, potential direct and indirect impacts to mountain plover and mountain plover foraging habitat would be reduced to a level of **less than significant** during construction, operation and decommissioning of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Impacts to Non-listed Special Status Animal Species – Bats

Impact 4.12.12 The BSA supports western mastiff bat, western yellow bat, and pocketed free-tailed bat winter foraging habitat. Palm trees within the BSA and buffer could also serve as roost sites for the western yellow bat. These bat species are CDFW Species of Special Concern. Construction, operation and decommissioning of the Full Build-out Scenario and each individual CUP (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario could result in direct and indirect impacts to bats and bat foraging habitat. Therefore, impacts to western mastiff bat, western yellow bat, and pocketed free-tailed bat are considered **potentially significant.**

Western mastiff bat, western yellow bat, and pocketed free-tailed bat were not observed during surveys but have moderate potential to occur in the BSA. Suitable winter foraging habitat exists throughout the BSA in agricultural fields. Palm trees within the BSA and buffer could serve as roost sites for the western yellow bat. No roosting habitat occurs for the other two species (AECOM 2014e, p. 4-55).

FULL BUILD-OUT SCENARIO/ALL CUPS (13-0036 THRU 13-0052)

Construction

Direct Impacts

Solar Energy Center

Construction within Solar Energy Center at all CUP areas would result in permanent removal of agriculture fields which are bat foraging habitat (**Table 4.12-11**). Construction of solar facilities within each CUP area may result in impacts to individuals from vehicular strikes or excavation equipment. However, typical construction work hours are expected to be from 6:00 a.m. to 5:00 p.m. when bats are not active and impacts to bats would likely be minimal (AECOM 2014e, p. 4-56). Nevertheless, a **potentially significant** direct impact to bat foraging habitat would occur during construction of the Solar Energy Center for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Electric Collector Line Corridor

Construction within the Electric Collector Line Corridor would result in permanent and temporary removal of bat foraging habitat. Direct permanent and temporary impacts resulting from installation of pole structures would occur within agriculture fields (**Table 4.12-12**). Construction of the Electric Collector Line Corridor may result in impacts to individuals from vehicular strikes or excavation

equipment. However, typical construction work hours are expected to be from 6:00 a.m. to 5:00 p.m. when bats are not active and impacts to bats would likely be minimal (AECOM 2014e, p. 4-56). Nevertheless, a **potentially significant** direct impact to bat foraging habitat would occur during construction of the Electric collector Line Corridor for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mount Signal Solar Farm Project Gen-Tie Line

The Mount Signal Solar Farm Project Gen-Tie line pole structures that would be upgraded or installed are located along canals and/or drains that provide suitable foraging habitat for bats. Construction of pole structures may result in impacts to individuals from vehicular strikes. Typical construction work hours are expected to be from 6:00 a.m. to 5:00 p.m. when bats are not active and impacts to bats would likely be minimal (AECOM 2014e, p. 4-56). Nevertheless, a **potentially significant** direct impact to bat foraging habitat would occur during construction of the Mount Signal Solar Farm Project Gen-Tie line pole structures.

Full Build-Out Scenario/All CUPs (13-0036 thru 13-0052)

Overall, implementation of the Project would result in direct impacts to Western mastiff bat, western yellow bat, and pocketed free-tailed bat foraging habitat, as well as roost sites for the western yellow bat, during construction of the Solar Energy Center, Electric Collector Line corridor, and Mount Signal Solar Farm Project Gen-Tie line corridor. Therefore, a **potentially significant** direct impact to bats would occur in association with both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Indirect Impacts

Potential indirect impacts to bats are expected to be similar for construction of the Solar Energy Center at each CUP (13-0036 thru 13-0052), the Electric Collector Line Corridor improvements, and Mount Signal Solar Farm Project Gen-Tie line upgrades. Temporary indirect construction impacts to bats and associated habitats include habitat fragmentation, increased human presence, increased noise levels, nighttime lighting, dust, sedimentation, and erosion. These indirect impacts have the potential to degrade bat foraging habitat and alter foraging behavior.

Construction activities to develop the 17 individual CUPs over a 10-year period (i.e. the Phased CUP Scenario) as opposed to constructing all 17 CUPS at one time (i.e. the Full Build-out Scenario) are assumed to have a similar level of indirect impacts, given that impacts (e.g., noise, lighting) would be extended over a greater period of time. However, if the Full Build-out Scenario were implemented, the impacts would be more intense but shorter in duration compared to the Phased CUP Scenario. Thus, either the Full Build-out Scenario or the Phased CUP Scenario would result in a comparable indirect impact (AECOM 2014e, p. 4-56). Therefore, a **potentially significant** indirect impact to western mastiff bat, western yellow bat, and pocketed free-tailed bat would occur during the construction of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Operation

Direct Impacts

Solar Energy Center

Potential direct impacts to western mastiff bat, western yellow bat, and pocketed free-tailed bat at the Solar Energy Center at each individual CUP (13-0036 thru 13-0052) include mortality of individuals by vehicle collisions during Project operations (AECOM 2014e, p. 4-65). Therefore, a **potentially significant** direct impact to western mastiff bat, western yellow bat, and pocketed free-tailed bat would occur

during operation of the Solar Energy Center for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Electric Collector Line Corridor

Potential direct impacts to western mastiff bat, western yellow bat, and pocketed free-tailed bat within the Electric Collector Line Corridor include mortality of individuals by vehicle collisions during Project operations (AECOM 2014e, p. 4-65). Therefore, a **potentially significant** direct impact to western mastiff bat, western yellow bat, and pocketed free-tailed bat would occur during operation of the Electric Collector Line Corridor for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mount Signal Solar Farm Gen-Tie Line

Potential direct impacts to western mastiff bat, western yellow bat, and pocketed free-tailed bat within the Mount Signal Solar Farm Project Gen-Tie corridor include mortality of individuals by vehicle collisions during Project operations (AECOM 2014e, p. 4-65). Therefore, a **potentially significant** direct impact to western mastiff bat, western yellow bat, and pocketed free-tailed bat would occur during operation of the Mount Signal Solar Farm Project Gen-Tie line corridor.

Full Build-Out Scenario/All CUPs (13-0036 thru 13-0052)

As discussed above, direct impacts to western mastiff bat, western yellow bat, and pocketed free-tailed bat could result from collisions during operation of the Solar Energy Center at each individual CUP (13-0036 thru 13-0052), the Electric Collector Line Corridor, and the Mount Signal Solar Farm Project Gen-Tie line. Therefore, a **potentially significant** direct impact to western mastiff bat, western yellow bat, and pocketed free-tailed bat would occur during operation of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Indirect Impacts

Full Build-Out Scenario/All CUPs (13-0036 thru 13-0052)

Potential indirect impacts to mountain plover from Project operation include increased noise levels, nighttime lighting, human use, operations-generated fugitive dust, erosion, sedimentation, storm water contaminant runoff, and the potential introduction and proliferation of invasive non-native plant species. Operations-related indirect impacts could result from increased common raven and raptor predation associated with elevated perching sites, including the Gen-Tie structures, perimeter fencing, and Gen-Tie lines. Trash present on-site may attract ravens in numbers beyond those afforded by the normal conditions extant in the Project vicinity. These indirect impacts have the potential to degrade mountain plover habitat (AECOM 2014e, pp. 66-67). Therefore, a **potentially significant** indirect impact to mountain plover habitat would occur during operation of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Decommissioning

Solar Energy Center

Decommissioning activities would result in direct and indirect impacts to bats and bat winter foraging habitat similar to those described above for construction of the Solar Energy Center at all CUPs (13-0036 thru 13-0052). The Solar Energy Center at all CUPs (13-0036 thru 13-0052) would remain free of vegetation; thus, wildlife species would not inhabit the solar array fields within the Project footprint. Most impacts would be indirect because bat winter foraging habitat would likely only remain within areas adjacent (i.e., off-site) to each CUP area. Direct impacts to bats may result from impacts to individuals as a result of vehicular or equipment strikes. Direct and indirect impacts in all CUP areas to bats and bat winter foraging habitat would be temporary because the site would be restored to pre-

Project soil conditions at the completion of decommissioning. Decommissioning is generally considered beneficial to biological resources. However, direct and indirect impacts to bats and bat winter foraging habitat during decommissioning activities would be considered **potentially significant** (AECOM 2014e, p. 4-69) for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Electric Collector Line Corridor

Decommissioning activities within the Electric Collector Line Corridor could result in direct and indirect impacts to bats and bat foraging habitat, similar to those described above for construction within the Electric Collector Line Corridor improvements. The Electric Collector Line Corridor would remain free of vegetation during Project operation; thus, wildlife species would not inhabit the Electric Collector Line Corridor footprint. Most impacts would be indirect because bat habitat would likely only remain within areas adjacent (i.e., off-site) to the Electric Collector Line Corridor. Direct impacts to bats may result from impacts to individuals as a result of vehicular or equipment strikes. Direct and indirect impacts to bats and bat winter foraging habitat within the Electric Collector Line Corridor would be temporary because the site would be restored to pre-Project soil conditions at the completion of decommissioning. Decommissioning is generally considered beneficial to biological resources. However, direct and indirect impacts to American bats and bat winter foraging habitat during decommissioning activities within the Electric Collector Line Corridor would be considered **potentially significant** (AECOM 2014e, p. 4-69) for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mount Signal Solar Farm Gen-Tie Line

Decommissioning activities within the Mount Signal Solar Farm Gen-Tie Line could result in direct and indirect impacts to bats and bat foraging habitat, similar to those described above for construction within the Mount Signal Solar Farm Gen-Tie Line upgrades. The Mount Signal Solar Farm Gen-Tie Line would remain free of vegetation during Project operation; thus, wildlife species would not inhabit the Mount Signal Solar Farm Gen-Tie Line footprint. Most impacts would be indirect because bat habitat would likely only remain within areas adjacent (i.e., off-site) to the Mount Signal Solar Farm Gen-Tie Line. Direct impacts to bats may result from impacts to individuals as a result of vehicular or equipment strikes. Direct and indirect impacts to bats and bat winter foraging habitat within the Mount Signal Solar Farm Gen-Tie Line would be temporary because the site would be restored to pre-Project soil conditions at the completion of decommissioning. Decommissioning is generally considered beneficial to biological resources. However, direct and indirect impacts to American bats and bat winter foraging habitat during decommissioning activities within the Mount Signal Solar Farm Gen-Tie Line would be considered **potentially significant** (AECOM 2014e, p. 4-69).

Full Build-Out Scenario/All CUPs (13-0036 thru 13-0052)

Completion of decommissioning of the Full Build-out Scenario would be beneficial to bats and bat foraging habitat through the removal of activities and infrastructure that could adversely impact these species' foraging behavior. However, during decommissioning activities, potential for collision with construction equipment would remain. Therefore, **potentially significant** direct impacts to bats would occur during decommissioning of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mitigation Measures

Implement Applicant proposed Measures/Project Design Features (as identified in Table 2.0-9, in Chapter 2.0 Project Description) and mitigation measures MM 4.12.1a, MM 4.12.1b, MM 4.12.1c, MM 4.12.1d, MM 4.12.1e, MM 4.12.1f, MM 4.12.14a and MM 4.12.14b.

Significance After Mitigation

Upon implementation of Applicant proposed Measures/Project Design Features (as identified in Table 2.0-9, in Chapter 2.0 Project Description), and mitigation measures MM 4.12.1a, MM 4.12.1b, MM 4.12.1c, MM 4.12.1d, MM 4.12.1e, MM 4.12.1f, MM 4.12.14a and MM 4.12.14b, would reduce potential direct and indirect impacts to bats and bat winter foraging habitat to a level of **less than significant** during construction, operation and decommissioning of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Impacts to Non-listed Special-Status Animal Species – American Badger

Impact 4.12.13 Project construction may result in direct impacts to American badger burrowing/denning habitat through direct removal of habitat at CUP 13-0047. Construction, operation, and decommissioning of the Solar Energy Center, each CUP (13-0036 thru 13-0052), and the Electric Collector Line Corridor improvements could result in direct impacts to American badger due to collisions with equipment. Construction, operation and decommissioning activities could also result in indirect impacts to American badger foraging habitat in areas on the edge of agricultural fields and in drains and canals at the Solar Energy Center at all CUPs (13-0036 thru 13-0052) and the Electric Collector Line Corridor. Therefore, impacts to American badgers are considered **potentially significant.**

A burrow exhibiting signs of predation by an American badger was observed within the 500-foot buffer of the BSA adjacent to the New River. Therefore, although American badger was not directly observed during biological surveys, it is considered present within the 500-foot buffer of the BSA (AECOM 2014e, p. 4-57).

CUP 13-0047

Construction

Solar Energy Center (CUP 13-0047)

Potential construction-related direct impacts in the form of permanent removal of American badger burrowing and/or denning habitat would occur at CUP 13-0047 within the undisturbed areas along the New River. This would be considered a **potentially significant** impact (AECOM 2014e, p. 4-57).

Operation

Solar Energy Center (CUP 13-0047)

See discussion below under "Full Build-out Scenario/All CUPs (13-0036 thru 13-0052)."

Decommissioning

Solar Energy Center (CUP 13-0047)

See discussion below under "Full Build-out Scenario/All CUPs (13-0036 thru 13-0052)."

FULL BUILD-OUT SCENARIO/ALL CUPS (13-0036 THRU 13-0052)

Construction

Direct Impacts

Solar Energy Center

Construction within the Solar Energy Center at all CUPs (13-0036 thru 13-0052) may result in impacts to individual American badgers from vehicular strikes or excavation equipment. Construction within CUP

areas would also result in permanent and removal of badger foraging habitat. Direct impacts to foraging habitat resulting from construction within the Solar Energy Center at all CUPs (13-0036 thru 13-0052) would occur on the edge of agriculture fields and in drains or canals (**Table 4.12-11**). Active agriculture fields are regularly disturbed and, therefore, do not provide suitable denning or burrowing habitat (AECOM 2014e, p. 4-57). Therefore, a **potentially significant** direct impact to American badgers and American badger foraging habitat would occur during the construction of the Solar Energy Center for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Electric Collector Line Corridor

Construction within the Electric Collector Line Corridor would result in permanent and temporary removal of American badger foraging habitat. Direct permanent and temporary impacts resulting from installation of pole structures would occur near the edge of agriculture fields (**Table 4.12-12**). Construction of the Electric Collector Line Corridor may result in impacts to individuals from vehicular strikes or excavation equipment (AECOM 2014e, p. 4-57). Therefore, a **potentially significant** indirect impact to American badgers and American badger foraging habitat would occur during the construction phase at the Electric Collector Line Corridor for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mount Signal Solar Farm Project Gen-Tie Line

The Mount Signal Solar Farm Project Gen-Tie line pole structures that would be upgraded or installed are located within disturbed habitat and American badger is not expected to occur in these areas. Therefore, **no direct impacts** to American badger would result from construction work within the Mount Signal Solar Farm Project Gen-Tie line corridor (AECOM 2014e, p. 4-57).

Full Build-out Scenario

Overall, implementation of the Full Build-out Scenario would result in direct impacts to American badgers and American badger foraging habitat during construction of the Solar Energy Center/all CUPs (13-0036 thru 13-0052) and the Electric Collector Line Corridor. Further, construction of CUP 13-0047 would impact burrowing and/or denning habitat within the undisturbed areas along the New River. CUP 13-0047 is a part of both the Full Build-out Scenario and Phased CUP Scenario. Therefore, a **potentially significant** direct impact to American badger foraging habitat and burrowing/denning habitat would occur for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Indirect Impacts

Potential indirect impacts to the American badger are expected to be similar throughout the Solar Energy Center at all CUPs (13-0036 thru 13-0052). Potential permanent indirect construction impacts to the badger and its habitats include habitat fragmentation, increased human presence, increased noise levels, human presence, nighttime lighting, sedimentation, and erosion. These indirect impacts have the potential to degrade badger habitat and alter breeding and foraging behaviors. Construction activities to develop the 17 individual CUPs over a 10-year period (i.e. Phased CUP Scenario) as opposed to constructing all 17 CUPs at one time (i.e. Full Build-out Scenario) are assumed to have a similar level of indirect impacts, given that impacts (e.g., noise, lighting) would be extended over a greater period of time. However, if the Full Build-out Scenario were implemented, the impacts would be more intense but shorter in duration compared to the Phased CUP Scenario. Thus, either the Full Build-out Scenario or the Phased CUP Scenario would result in a comparable indirect impact (AECOM 2014e, pp. 4-59 and 4-60). Therefore, a **potentially significant** indirect impact to American badgers would occur during the construction of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Operation

Direct Impacts

Solar Energy Center

During operation of the Solar Energy Center at each individual CUP (13-0036 thru 13-0052), direct impacts to American badgers could occur as a result of potential collisions with equipment being used for operational activities (AECOM 2014e, pp. 4-67 and 4-68). Therefore, direct impacts to American badgers would be considered **potentially significant** during operation of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Electric Collector Line Corridor

During operation of the Solar Energy Center at each individual CUP (13-0036 thru 13-0052), direct impacts to American badgers could occur as a result of potential collisions with equipment being used for operational activities (AECOM 2014e, pp. 4-67 and 4-68). Therefore, direct impacts to American badgers would be considered **potentially significant** during operation of the Electric Collector Line Corridor for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mount Signal Solar Farm Gen-Tie Line

The Mount Signal Solar Farm Project Gen-Tie line pole structures would be located within disturbed habitat and American badger is not expected to occur in these areas. Therefore, **no direct impacts** to American badger would result from Project operations within the Mount Signal Solar Farm Project Gen-Tie line (AECOM 2014e, p. 4-57).

Full Build-Out Scenario/All CUPs (13-0036 thru 13-0052)

During operation of the Full Build-out Scenario, direct impacts to American badgers could occur at the Solar Energy Center at all CUPs (13-0036 thru 13-0052 and within the Electric Collector Line Corridor as a result of potential collisions with equipment being used for operational activities. Therefore, a **potentially significant** direct impact to American badgers would occur during operation of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Indirect Impacts

Full Build-Out Scenario/All CUPs (13-0036 thru 13-0052)

Potential indirect impacts to American badger from operation of Solar Energy Center at each individual CUP (13-0036 thru 13-0052), and the Electric Collector Line corridor include increased noise levels, nighttime lighting, human use, operation-generated fugitive dust, erosion, sedimentation, and storm water contaminant runoff. These indirect impacts could impact American badger burrowing and denning habitat. Therefore, a **potentially significant** indirect impact to American badgers would occur during operation of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Decommissioning

Solar Energy Center

Decommissioning activities would result in direct and indirect impacts to American badgers and American badger foraging habitat similar to those described above for construction of the Solar Energy Center at all CUPs (13-0036 thru 13-0052). The Solar Energy Center at all CUPs (13-0036 thru 13-0052) would remain free of vegetation; thus, wildlife species would not inhabit the solar array fields within the Project footprint. Most impacts would be indirect because American badger foraging habitat would

likely only remain within areas adjacent (i.e., off-site) to the Solar Energy Center at each CUP area. Direct impacts to American badgers may result from impacts to individuals as a result of vehicular or equipment strikes. Direct and indirect impacts to American badgers and American badger foraging habitat in all CUP areas would be temporary because the site would be restored to pre-Project soil conditions at the completion of decommissioning. In general, decommissioning is considered beneficial to biological resources. However, direct and indirect impacts to American badgers and American badger burrowing/denning habitat would be considered **potentially significant** (AECOM 2014e, p. 4-69) during decommissioning activities at the Solar Energy Center for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Electric Collector Line Corridor

Decommissioning activities within the Electric Collector Line corridor could result in direct and indirect impacts to American badgers and American badger foraging habitat similar to those described above for construction of the Electric Collector Line Corridor improvements. The Electric Collector Line Corridor would remain free of vegetation; thus, wildlife species would not inhabit the Electric Collector Line Corridor footprint. Most impacts would be indirect because American badger burrowing/denning habitat would likely only remain within areas adjacent (i.e., off-site) to the Electric Collector Line Corridor. Direct impacts to American badgers may result from impacts to individuals as a result of vehicular or equipment strikes. Direct and indirect impacts in the Electric Collector Line Corridor to American badgers and American badger foraging habitat would be temporary because the site would be restored to pre-Project soil conditions at the completion of decommissioning. Decommissioning is generally considered beneficial to biological resources. However, direct and indirect impacts to American badgers and American badger burrowing/denning habitat would be considered **potentially significant** (AECOM 2014e, p. 4-69) during decommissioning activities within the Electric Collector Line Corridor for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mount Signal Solar Farm Gen-Tie Line

The Mount Signal Solar Farm Project Gen-Tie line pole structures would be located within disturbed habitat and American badger is not expected to occur in these areas. Therefore, **no direct impacts** to American badger would result from decommissioning activities within the Mount Signal Solar Farm Project Gen-Tie line corridor (AECOM 2014e, p. 4-69).

Full Build-Out Scenario/All CUPs (13-0036 thru 13-0052)

Completion of Project decommissioning would be beneficial to American badgers through the removal of activities that could adversely impact these species' foraging behavior. However, during decommissioning activities, potential for collision with construction equipment would remain. Therefore, **potentially significant** impacts to American badger would occur during decommissioning of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mitigation Measures

Implement Applicant proposed Measures/Project Design Features (as identified in Table 2.0-9, in Chapter 2.0 Project Description) and mitigation measures MM 4.12.1a, MM 4.12.1b, MM 4.12.1c, MM 4.12.1d, MM 4.12.1e, and MM 4.12.1f.

Significance After Mitigation

Upon implementation of Applicant proposed Measures/Project Design Features (as identified in Table 2.0-9, in Chapter 2.0 Project Description) and mitigation measures MM 4.12.1a, MM 4.12.1b, MM

4.12.1c, MM 4.12.1d, MM 4.12.1e, and MM 4.12.1f, potential direct and indirect impacts to American badger would be reduced to a level of **less than significant** during construction, operation and decommissioning of the Solar Energy Center for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Impacts to Nesting and Migratory Birds

Impact 4.12.14 Construction, operation and decommissioning of the Full Build-out Scenario and each CUP (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario could result in direct and indirect impacts to nesting and migratory birds protected under California Fish and Game Code and the MBTA, as a result of removal of foraging habitat and potential collisions with Project facilities and equipment. This is considered a **potentially significant impact.**

This section describes potential direct and indirect impacts to migratory birds protected exclusively by the MBTA and associated state laws (CFGC Sections 3503, 3503.5, 3513) and not previously discussed above under impacts 4.12.4 (southwestern willow flycatcher) and 4.12.5 (greater sandhill crane). The willow flycatcher (including the subspecies southwestern willow flycatcher) and greater sandhill crane are protected by MBTA associated state laws (CFGC Sections 3503, 3503.5, 3513), as well as other federal and/or state laws (AECOM 2014e, p. 4-58). Potential construction impacts to southwestern willow flycatcher and greater sandhill crane are discussed under Impacts 4.12.4 and 4.12.5, respectively.

FULL BUILD-OUT SCENARIO/ALL CUPs (13-0036 THRU 13-0052)

Construction

Direct Impacts

Solar Energy Center

Potential direct impacts to migratory birds resulting from construction are expected to be similar within the Solar Energy Center at each CUP (13-0036 thru 13-0052). Potential permanent direct impacts to migratory birds include removal of habitat and potential collisions with construction equipment or vehicles. Direct impacts to vegetation communities within the Solar Energy Center at each CUP (13-0036 thru 13-0052) would be greatest to agriculture habitats (**Table 4.12-11**). At full build-out, approximately 90 percent (2,318 acres [938 hectares]) of anticipated permanent direct impacts would occur to agriculture. Approximately 3 percent of anticipated permanent direct impacts would occur in riparian and wetlands (59 acres [24 hectares]) and native upland habitat (8 acres [3 hectares]). The remaining impacts would occur in developed or disturbed habitat (178 acres [72 hectares]). The agriculture primarily provides foraging habitat for migratory birds while riparian or non-agricultural upland habitats may provide foraging or breeding habitat for migratory birds. Vehicular collisions occur most frequently during the vegetation clearing stage of construction and involve eggs, nestlings, and recently fledged young that cannot safely avoid equipment. Thus, potential collisions to migratory bird individuals during the vegetation clearing stage of construction are expected to be limited to those migratory species nesting within the BSA. Loss of foraging habitat would affect both wintering and breeding birds within the region (AECOM 2014e, p. 4-59).

Potential direct impacts to migratory birds at the Solar Energy Center at each CUP (13-0036 thru 13-0052) also include impacts resulting from collisions with PV panels prior to the initiation of Project operations. Polarized light pollution caused by solar PV panels may affect foraging behaviors, navigation, and orientation in birds, leading to potential collisions with panels. Waterbirds have composed the majority of avian mortalities at the Desert Sunlight PV facility. The potential effect of polarized light pollution on other migrating avian species is not known. Therefore, migratory waterbirds may be at

increased risk of collisions with PV panels relative to other migratory birds. Additionally, large areas of solar PV or CPV panels in the desert environment may mimic water bodies and inadvertently attract waterbird species. Although studies have shown that glare intensity and/or reflectivity of CPV modules are lower than that of water and similar to asphalt, individuals may collide with solar panels and/or become stranded in solar fields resulting in fatalities (AECOM 2014e, p. 4-59). A **potentially significant** direct impact to migratory birds and migratory bird foraging habitat would occur during construction of the Solar Energy Center for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Electric Collector Line Corridor

Construction within the Electric Collector Line Corridor would result in permanent and temporary removal of migratory bird foraging habitat. Direct permanent and temporary impacts resulting from installation of pole structures would occur within agriculture, although permanent loss of habitat would be minimal (**Table 4.12-12**). Construction of the Electric Collector Line Corridor may result in impacts to individuals from vehicular strikes or excavation equipment. Collisions occur most frequently during the vegetation clearing stage of construction, and involve eggs, nestlings, and recently fledged young that cannot safely avoid equipment. Potential direct impacts to migratory birds also include impacts resulting from collisions with overhead wires and other structures associated with the electric collector lines prior to the initiation of O&M activities (AECOM 2014e, p. 4-59). A **potentially significant** direct impact to migratory birds and migratory bird foraging habitat would occur during construction of the Electric Collector Line Corridor for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mount Signal Solar Farm Project Gen-Tie Line

The Mount Signal Solar Farm Project Gen-Tie line pole structures that would be upgraded or installed are located within disturbed habitat; however, some ground-nesting migratory avian species may occur in these areas. Construction within the Mount Signal Solar Farm Project Gen-Tie line corridor may result in impacts to individuals from vehicular strikes or excavation equipment. Collisions occur most frequently during the vegetation clearing stage of construction and involve eggs, nestlings, and recently fledged young that cannot safely avoid equipment. Potential direct impacts to migratory birds also include impacts resulting from collisions with overhead Gen-Tie wires, Gen-Tie tower guy wires, and other structures associated with the Mount Signal Solar Farm Gen-Tie line prior to the initiation of Project operations (AECOM 2014e, pp. 59). A **potentially significant** direct impact to migratory birds and migratory bird foraging habitat would occur during construction of Project upgrades within the Mount Signal Solar Farm Project Gen-Tie line corridor.

Full Build-Out Scenario/All CUPs (13-0036 thru 13-0052)

Overall, construction of the Solar Energy Center at each CUP (13-0036 thru 13-0052), Electric Collector Line Corridor improvements, and Mount Signal Solar Farm Project Gen-Tie line corridor upgrades would result in direct impacts to nesting migratory birds. Therefore, a **potentially significant** direct impact to nesting migratory birds would occur for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Indirect Impacts

Potential indirect impacts to migratory birds are expected to be similar for construction of the Solar Energy Center at each CUP (13-0036 thru 13-0052), the Electric Collector Line Corridor improvements, and the Mount Signal Solar Farm Project Gen-Tie line upgrades. Potential temporary indirect impacts to these species and associated habitats include habitat fragmentation, increased human presence, increased noise levels, nighttime lighting, dust, sedimentation, and erosion. Permanent indirect impacts

could result from increased common raven and raptor predation associated with the construction of new elevated perching sites, including the Gen-Tie lines and pole structures, transmission lines and pole structures, and perimeter fencing. Trash present on-site may attract ravens in numbers beyond those afforded by the normal conditions extant in the Project vicinity. These indirect impacts have the potential to degrade migratory bird habitat and alter breeding, foraging, and migratory behaviors (AECOM 2014e, p. 4-60).

Construction activities to develop the 17 individual CUPs over a 10-year period (i.e. the Phased CUP Scenario) as opposed to constructing all 17 CUPs at one time (i.e. Full Build-out Scenario) are assumed to have a similar level of indirect impacts, given that impacts (e.g., noise, lighting) would be extended over a greater period of time. However, if the Full Build-out Scenario is implemented, the impacts would be more intense but shorter in duration compared to the Phased CUP Scenario. Thus, either the Full Build-out Scenario or the Phased CUP Scenario would result in a comparable indirect impact to migratory birds (AECOM 2014e, p. 4-60). Therefore, a **potentially significant** indirect impact to nesting migratory birds would occur during construction of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Operation

Direct Impacts

Solar Energy Center /Electric Collector Line Corridor/Mount Signal Solar Farm Project Gen- Tie

Potential direct impacts to special-status wildlife and migratory birds include mortality of individuals by vehicle collisions during Project operations. The Project is located along the Pacific Flyway and migratory birds may migrate through the BSA and vicinity during Project operation. Avian collisions with solar PV installations have been documented. Polarized light pollution caused by solar PV panels may affect foraging behaviors, navigation, and orientation in birds, leading to potential collisions with panels. Waterbirds have composed the majority of avian mortalities at the Desert Sunlight PV facility. The potential effect of polarized light pollution on other migrating avian species is not known. As such, migratory waterbirds may be at increased risk of collisions with PV panels relative to other migratory birds. Additionally, large areas of solar PV or CPV panels in the desert environment may mimic water bodies and inadvertently attract waterbird species. Although studies have shown that glare intensity and/or reflectivity of CPV modules are lower than that of water and similar to asphalt, individuals may collide with solar panels and/or become stranded in solar fields resulting in fatalities (AECOM 2014e, p. 4-65). Therefore, a **potentially significant** indirect impact to nesting migratory birds would occur during operation of the Solar Energy Center for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Electric Collector Line Corridor/Mount Signal Solar Farm Project Gen-Tie

Potential direct impacts to avian species include impacts resulting from collisions with overhead Gen-Tie wires, Gen-Tie tower guy wires, and other structures associated with the electric collector lines and Mount Signal Solar Farm Project Gen-Tie line. Avian power line collisions are a widespread problem with potentially significant local impacts when high-risk conditions are present. The level of risk depends on a combination of biological and physical factors, such as weather, design and placement of Gen-Tie structures, and species-specific behavior (AECOM 2014e, p. 4-65). Therefore, a **potentially significant** indirect impact to nesting migratory birds would occur during operation of the Electric Collector Line Corridor for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario and the Mount Signal Solar Farm Project Gen-Tie line.

Full Build-Out Scenario/All CUPs (13-0036 thru 13-0052)

As discussed above, direct impacts nesting migratory birds could occur as a result of collisions with solar panels and collisions with overhead Gen-Tie wires, Gen-Tie tower guy wires, and other structures associated with the electric collector lines and Mount Signal Solar Farm Project Gen-Tie line. Therefore, a **potentially significant** direct impact to nesting migratory birds would occur during Project operations for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Indirect Impacts

Full Build-Out Scenario/All CUPs (13-0036 thru 13-0052)

Potential indirect impacts from Project operation include increased noise levels, nighttime lighting, human use, operation-generated fugitive dust, erosion, sedimentation, storm water contaminant runoff, and the potential introduction and proliferation of invasive non-native plant species. Operations-related indirect impacts could result from increased common raven and raptor predation associated with elevated perching sites, including the Gen-Tie structures, perimeter fencing, and Gen-Tie lines. Trash present on-site may attract ravens in numbers beyond those afforded by the normal conditions extant in the Project vicinity. These indirect impacts have the potential to degrade special-status wildlife and migratory bird habitat and alter migration behaviors (AECOM 2014e, p. 4-65). Therefore, a **potentially significant** indirect impact to nesting migratory birds would occur for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Decommissioning

Solar Energy Center

Decommissioning activities would result in direct and indirect impacts to nesting and migratory birds and associated foraging habitat similar to those described above for construction of the Solar Energy Center at all CUPs (13-0036 thru 13-0052). The Solar Energy Center at all CUPs (13-0036 thru 13-0052) would remain free of vegetation; thus, wildlife species would not inhabit the solar array fields within the Project footprint. Most impacts would be indirect because nesting and migratory bird foraging habitat would likely remain only within areas adjacent (i.e., off-site) to each CUP area. Direct impacts to nesting and migratory birds may result from impacts to individuals as a result of vehicular or equipment strikes. Direct and indirect impacts in all CUP areas to nesting and migratory birds and associated foraging habitat would be temporary because the site would be restored to pre-Project soil conditions at the completion of decommissioning. Decommissioning is generally considered beneficial to biological resources. However, direct and indirect impacts to nesting and migratory birds and associated foraging habitat would be considered **potentially significant** (AECOM 2014e, p. 4-69) during decommissioning activities within the Solar Energy Center for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Electric Collector Line Corridor

As discussed above, avian power line collisions are a widespread problem with potentially significant local impacts when high-risk conditions are present. Completion of decommissioning activities would result in restoration of the Electric Collector Line Corridor to pre-project conditions. Removal of electric collector lines and support structures would eliminate power lines creating potential for migratory and nesting bird collisions. However, during decommissioning activities, direct impacts to nesting and migratory birds may result from impacts to individuals as a result of vehicular or equipment strikes. Therefore, direct impacts to nesting and migratory birds and associated foraging habitat would be considered **potentially significant** (AECOM 2014e, p. 4-69) during decommissioning activities within the

Electric Collector Corridor Line for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mount Signal Solar Farm Gen-Tie Line

As discussed above, avian power line collisions are a widespread problem with potentially significant local impacts when high-risk conditions are present. Completion of decommissioning activities would result in restoration of the Mount Signal Solar Farm Project Gen-Tie line corridor to pre-project conditions. Removal of Gen-Tie lines and support structures would eliminate power lines creating potential for migratory and nesting bird collisions. However, during decommissioning activities, direct impacts to nesting and migratory birds may result from impacts to individuals as a result of vehicular or equipment strikes. Therefore, direct impacts to nesting and migratory birds and associated foraging habitat would be considered **potentially significant** (AECOM 2014e, p. 4-69) during decommissioning activities within the Mount Signal Solar Farm Project Gen-Tie corridor.

Full Build-Out Scenario/All CUPs (13-0036 thru 13-0052)

Completion of Project decommissioning would be beneficial to migratory and nesting avian species through the removal of facilities and infrastructure that could adversely impact these species' foraging and migration behavior. However, during decommissioning activities, potential for collision with equipment and electric collector/Gen-Tie lines and support structures would remain. Therefore, **potentially significant** impacts to nesting and migratory birds would occur during decommissioning of the both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mitigation Measures

AVIAN-SPECIFIC CONSTRUCTION MEASURES - ALL CUPs (13-0036 THRU 13-0052)

MM 4.12.14a A voluntary Bird and Bat Conservation Strategy (BBCS) will be developed by the Project Applicant in coordination with the County of Imperial, USFWS, and CDFW.

The BBCS will include the following components:

- A description and assessment of the existing habitat and avian and bat species;
- An avian and bat risk assessment and specific measures to avoid, minimize, reduce, or eliminate avian and bat injury or mortality during all phases of the project.
- A post-construction monitoring plan that will be implemented to assess impacts on avian and bat species resulting from the Project. The post-construction monitoring plan will include a description of standardized carcass searches, scavenger rate (i.e., carcass removal) trials, searcher efficiency trials, and reporting. Statistical methods will be used to estimate Project avian and bat fatalities if sufficient data is collected to support statistical analysis.
- An injured bird response plan that delineates care and curation of any and all injured birds.
- A nesting bird management strategy to outline actions to be taken for avian nests detected within the impact footprint during operation of the Project.
- A conceptual adaptive management and decision-making framework for reviewing, characterizing, and responding to monitoring results.
- Monitoring studies following commencement of commercial operation of each CUP area. Monitoring results will be reviewed annually by the Applicant and the County

of Imperial, in consultation with CDFW and USFWS, to inform adaptive management responses.

During Project construction, incidental avian carcasses or injured birds found during construction shall be documented. Should a carcass be found by Project personnel, the carcass shall be photographed, the location shall be marked, the carcass shall not be moved, and a qualified biologist shall be contacted to examine the carcass. When a carcass is detected, the following data shall be recorded (to the extent possible): observer, date/time, species or most precise species group possible, sex, age, estimated time since death, potential cause of death or other pertinent information, distance and bearing to nearest structure (if any) that may have been associated with the mortality, location (recorded with a Global Positioning System [GPS]), and condition of carcass.

Utility lines constructed above-ground shall conform to Avian Power Line Interaction Committee (APLIC) standards.

Post-construction monitoring studies shall be conducted by a third-party independent contractor for at least 2 years following commencement of commercial operation of each CUP area. Monitoring results shall be reviewed annually by the Applicant and the County of Imperial, in consultation with CDFW and USFWS, to determine if and to what extent post-construction monitoring studies shall be continued in future years.

Timing/Implementation: *Prior to, throughout construction, and during operation of the Full Build-out Scenario and each individual CUP (13-0036 thru 13-0052).*

Enforcement/Monitoring: *Imperial County Planning and Development Services Department.*

MM 4.12.14b To the extent possible, construction shall occur outside the typical avian breeding season (February 15 through September 15). If construction must occur during the general avian breeding season, a pre-construction nest survey shall be conducted within the impact area and a 500-foot (150-meter) buffer by qualified biologist no more than 7 days prior to the start of vegetation clearing and/or ground disturbing construction activities in any given area of the Project footprint. Construction crews shall coordinate with the qualified biologist at least 7 days prior to the start of construction in a given area to ensure that the construction area has been adequately surveyed. A nest is defined as active once birds begin constructing or repairing the nest in readiness for egg-laying. A nest is no longer an “active nest” if abandoned by the adult birds or once nestlings or fledglings are no longer dependent on the nest. If no active nests are discovered, construction may proceed. If active nests are observed that could be disturbed by construction activities, these nests and an appropriately sized buffer (typically a 200-foot (61-meter) buffer for non-raptor species nests and at least a 500-foot (150-meter) buffer for raptor or federally listed species nests) would be avoided until the young have fledged. Final construction buffers or setback distances shall be determined by the qualified biologist in coordination with USFWS and CDFW on a case-by-case basis, depending on the species, season in which disturbance shall occur, the type of disturbance, and other factors that could influence susceptibility to disturbance (e.g., topography, vegetation, existing disturbance levels, etc.). Active nests shall be avoided until the young have fledged and/or the monitor determines that no impacts are anticipated to the nesting birds or their young. If vegetation clearing and/or ground disturbing activities cease for 14 or more consecutive days during the nesting season in

areas where suitable nesting habitat remains, repeat nesting bird surveys shall be required to ensure new nesting locations have not been established within the impact area and the defined buffers.

Construction-generated noise may result in disturbance to nesting migratory birds. The following measures shall be incorporated to minimize noise generated from construction activities:

- The qualified biologist shall coordinate with contractors to ensure that heavy equipment will be repaired as far as practical from habitats where nesting birds may be present.
- Construction equipment, including generators and compressors, shall be equipped with manufacturers' standard noise-control devices or better (e.g., mufflers, acoustical lagging, and/or engine enclosures).
- The construction contractor shall maintain all construction vehicles and equipment in proper operating condition and provide mufflers on all gas- and diesel-powered equipment.
- The Project's BBCS shall be implemented during the construction. Incidental avian carcasses or injured birds found during construction shall be documented. If a carcass be found by Project personnel, the carcass shall be photographed, the location shall be marked, the carcass shall not be moved, and a qualified biologist shall be contacted to examine the carcass. When a carcass is detected, the following data shall be recorded (to the extent possible): observer, date/time, species or most precise species group possible, sex, age, estimated time since death, potential cause of death or other pertinent information, distance and bearing to nearest structure (if any) that may have been associated with the mortality, location (recorded with a Global Positioning System [GPS]), and condition of carcass.

Timing/Implementation: *Prior to and throughout construction activities at each individual CUP (13-0036 thru 13-0052).*

Enforcement/Monitoring: *Imperial County Planning and Development Services Department.*

AVIAN-SPECIFIC DECOMMISSIONING MEASURES – ALL CUPs (13-0036 THRU 13-0052)

MM 4.12.14c During decommissioning, Project improvements associated with the Electric Collector Corridor Line and the Mount Signal Solar Farm Project Gen-Tie line shall be removed. In addition, all unnecessary overhead power lines and poles shall be removed by each CUP owner.

Timing/Implementation: *Throughout decommissioning activities at each individual CUP (13-0036 thru 13-0052).*

Enforcement/Monitoring: *Imperial County Planning and Development Services Department.*

Significance After Mitigation

Following implementation of mitigation measures MM 4.12.1a, MM 4.12.1b, MM 4.12.1c, MM 4.12.1d, MM 4.12.1e, MM 4.12.1f, MM 4.12.14a, 4.12.14b and MM 4.12.14c, potentially significant direct and indirect impacts to special-status avian species and nesting and migratory avian species would be

reduced to a level of **less than significant** during construction, operation, and decommissioning of both the Full Build-out Scenario and each individual CUP (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Impacts to Wildlife Movement

Impact 4.12.15 The proposed Project would be developed on disturbed agricultural land surrounded by agricultural and solar energy facility uses. No impact to wildlife movement through corridors is anticipated to occur. However, Project construction could impact migratory bird movement through the Solar Energy Center at each individual CUP (13-0036 thru 13-0047). Therefore, the proposed Project would result in a **potentially significant** impact to avian migratory wildlife movement.

The BSA is likely used by a variety of wildlife species for local and regional movements. Local movements include dispersals and movements related to home range activities (i.e., foraging for food or water, defending territories, searching for mates, breeding areas, or cover) by all groups of wildlife (e.g., birds, mammals, and reptiles). Regional movements are likely limited to migratory bird movements through the BSA during spring and fall migration periods (AECOM 2014e, p. 4-60). The following discussion describes the potential direct and indirect impacts to wildlife movement resulting from construction, operation, and decommissioning of the Project.

FULL BUILD-OUT SCENARIO/ALL CUPs (13-0036 THRU 13-0052)

Construction

Direct Impacts

Solar Energy Center

Potential direct impacts to wildlife movement resulting from construction are expected to be similar for the Solar Energy Center at each CUP (13-0036 thru 13-0052). Construction activities to develop the 17 individual CUPs over a 10-year period (i.e. the Phased CUP Scenario) as opposed to construction all 17 CUP at one time (i.e. the Full Build-out Scenario) would have a greater potential for direct impacts. Construction vehicles have the potential to result in accidental injury to or mortality of on-site species during construction. The perimeter of each CUP area would be fenced with an up to 7-foot (2.1-meter) chain-link fence with 3-strand barbed-wire placed at the top, extending to a total of up to 8 feet (2.4 meters). Fencing may impede some wildlife movement for dispersal and home range activities, particularly for species that move through agriculture habitat. However, fencing would not impede wildlife movement along the New River, Greeson Wash, or IID ROWs and, therefore, corridors would remain to allow wildlife to move through and around the perimeter of each CUP area. The BSA is not part of a regional corridor for terrestrial species. It is likely that most regional movements occur within designated open spaces, such as the Yuha Basin Area of Critical Environmental Concern, as opposed Imperial Valley agriculture matrix. Therefore regional movement for terrestrial species would not be impeded (AECOM 2014e, p. 4-61).

Construction within each CUP area would not impede movement of migratory birds through the BSA and vicinity to important stopover sites such as, Sonny Bono Salton Sea National Wildlife Refuge and the Imperial State Wildlife Area (including Finney-Ramer Lakes). However, migratory bird mortalities have been recently documented at solar PV installations. Polarized light pollution caused by non-operating (i.e., prior to commissioning) solar PV panels installed during construction may affect foraging behaviors, navigation, and orientation in birds, leading to potential collisions with panels. Therefore, each CUP area may result in impacts to individual birds migrating through the area. Additionally, large areas of solar PV or CPV panels in the desert environment may mimic water bodies and inadvertently attract waterbird

species. Although studies have shown that glare intensity and/or reflectivity of CPV modules are lower than that of water and similar to asphalt, individuals may collide with solar panels and/or become stranded in solar fields resulting in fatalities (AECOM 2014e, p. 4-61). Therefore, a **potentially significant** impact to migratory bird movement through the Solar Energy Center for both the Full Build-out Scenario and each individual CUP (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Electric Collector Line Corridor

Construction within the Electric Collector Line Corridor would not impede movement of migratory birds and/or terrestrial wildlife. Construction vehicles have the potential to result in accidental injury to or mortality of on-site species. Potential direct impacts to migratory birds also include impacts resulting from collisions with overhead wires and other structures associated with the electric collector lines prior to the initiation of Project operations (AECOM 2014e, p. 4-61). However, impacts to individual sensitive species with are addressed by the species type under Impact 4.12.4 through Impact 4.12.13, above. Therefore, a **less than significant** impact to wildlife movement is anticipated to occur during construction of the Electric Collector Line Corridor both the Full Build-out Scenario and each individual CUP (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mount Signal Solar Farm Project Gen-Tie Line

The Mount Signal Solar Farm Project has already constructed a 230-kV single-circuit Gen-Tie line that the Project would use. Construction to install new double dead-end structures and upgrade existing structures would not result in impacts to movement of migratory birds and/or terrestrial wildlife. Construction vehicles have the potential to result in accidental injury to or mortality of on-site species during construction. Potential direct impacts to migratory birds also include impacts resulting from collisions with overhead Gen-Tie wires, Gen-Tie tower guy wires, and other structures associated with the Mount Signal Solar Farm Project Gen-Tie line prior to the initiation of Project operations (AECOM 2014e, p. 4-61). However, impacts to individual sensitive species with are addressed by the species type under Impact 4.12.4 through Impact 4.12.13, above. Therefore, a **less than significant** impact to wildlife movement is anticipated to occur during construction of Project upgrades within the Mount Signal Solar Farm Project Gen-Tie line corridor.

Full Build-Out Scenario/All CUPs (13-0036 thru 13-0052)

Overall, implementation of the proposed Project could result in direct impacts to wildlife movement during construction of the Solar Energy Center at each CUP (13-0036 thru 13-0052). Therefore, a **potentially significant** direct impact to wildlife movement would occur during construction of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Indirect Impacts

Potential indirect impacts to wildlife movement resulting from construction are expected to be similar for the Solar Energy Center at each CUP (13-0036 thru 13-0052, the Electric Collector Line Corridor improvements, and the Mount Signal Solar Farm Project Gen-Tie line upgrades. Indirect impacts to wildlife movement (including terrestrial and avian) may result during construction from increased human presence, construction-generated noise and nighttime lighting, and edge effects associated with development. These indirect impacts may result in avoidance of the site during movements and may have harmful effects on individuals, population genetics, and metapopulation dynamics. These impacts may vary depending on the population structure, size of the home range, migration patterns, and dispersal movements of the species being considered, as well as the species' behavioral response to artificial light, noise, degraded surrounding habitat, and other anthropogenic influences (AECOM 2014e, p. 4-62).

Construction activities to develop the 17 individual CUPs over a 10-year period (i.e. the Phased CUP Scenario) as opposed to construction all 17 CUP at one time (i.e. the Full Build-out Scenario) are assumed to have a similar level of indirect impacts, given that impacts (e.g., noise, lighting) would be extended over a greater period of time. However, if the Full Build-out Scenario were implemented, the impacts would be more intense but shorter in duration compared to the Phased CUP Scenario. Thus, either the Full Build-out Scenario or the Phased CUP Scenario would result in a comparable indirect impact to wildlife movement (AECOM 2014e, p. 4-62). Therefore, a **potentially significant** indirect impact to wildlife movement would occur during construction of both the Full Build-out Scenario and each CUP (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Operation

Full Build-out Scenario

Project operation would not result in any additional direct or indirect impacts to wildlife movement beyond those described above under Project construction impacts (AECOM 2014e, p. 4-62). Therefore, a **less than significant** direct and indirect impact to wildlife movement would occur as a result of operation of both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Decommissioning

Solar Energy Center

Decommissioning of the Solar Energy Center and each CUP (13-0036 thru 13-0052) would result in the removal of fencing around the perimeter of each CUP area. Decommissioning would result in the removal of solar panels and the potential for light pollution, glare or mimicry of water bodies. Wildlife movement along the New River, Greeson Wash, and IID ROW corridors would remain in place. Completion of decommissioning activities would result in restoration of the Solar Energy Center site at each CUP (13-0036 thru 13-0052) to pre-project conditions. Decommissioning is generally considered beneficial to biological resources (AECOM 2014e, p. 4-69). Therefore, a **less than significant** impact to wildlife movement would occur as a result of decommissioning activities at the Solar Energy Center for both the Full Build-out Scenario and each individual CUP (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Electric Collector Line Corridor

Individual electric collector lines would remain in place until each CUP utilizing individual lines is decommissioned. Completion of decommissioning activities would result in restoration of the Electric Collector Line Corridor to pre-project conditions. Removal of electric transmission lines and support structures would mean potential obstacles to avian species movement would no longer be in place. Decommissioning is generally considered beneficial to biological resources (AECOM 2014e, p. 4-69). Therefore, a **less than significant** impact to wildlife movement would occur as a result of decommissioning activities at the Electric Collector Line Corridor for both the Full Build-out Scenario and each individual CUP (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

Mount Signal Solar Farm Project Gen-Tie

The decommissioning process for the Mount Signal Solar Farm Project Gen-Tie line is estimated to disturb approximately six acres of land. The disturbance area would be within the same area that was temporarily disturbed during the construction of the Gen-Tie line. The Gen-Tie line and infrastructure would remain in place until each solar project utilizing this infrastructure is decommissioned. Completion of decommissioning activities would result in restoration of the Gen-Tie corridor to pre-project conditions. Removal of Gen-Tie line and support structures would eliminate potential obstacles

to avian species movement. Decommissioning is generally considered beneficial to biological resources (AECOM 2014e, p. 4-69). Therefore, a **less than significant** impact to wildlife movement would occur as a result of decommissioning activities within the Mount Signal Solar Farm Project Gen-Tie line corridor.

Mitigation Measures

Implement Applicant proposed Measures/Project Design Features (as shown in Table 2.0-9, in Chapter 2.0 Project Description) and mitigation measures MM 4.12.1a, MM 4.12.1b, MM 4.12.1c, MM 4.12.1d, MM 4.12.1e and MM 4.12.1f, MM 4.12.14a and 4.12.14b.

Significance After Mitigation

Upon implementation of Applicant proposed Measures/Project Design Features (as shown in Table 2.0-9, in Chapter 2.0 Project Description) and mitigation measures MM 4.12.1a, MM 4.12.1b, MM 4.12.1c, MM 4.12.1d, MM 4.12.1e, MM 4.12.1f and MM 4.12.14a, potentially significant construction and operation-related direct and indirect impacts to wildlife movement would be reduced to **less than significant** for both the Full Build-out Scenario and all CUPs (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario.

4.12.4 CUMULATIVE SETTING, IMPACTS AND MITIGATION MEASURES

A. CUMULATIVE SETTING

The geographic scope for considering cumulative impacts on species that use farm fields for foraging includes the entire irrigated Imperial Valley, which is part of the Pacific Migration Flyway for birds migrating between as far south as South America and as far north as the arctic circle. The Pacific Migration Flyway serves as an important stopover site for many species for rest and foraging, and, for some, as breeding grounds. Table 3.0-1, Proposed, Approved and Reasonably Foreseeable Projects in the Vicinity of the Proposed Project, in Chapter 3.0, Introduction to the Environmental Analysis and Assumptions Used, identifies the list of cumulative projects that were considered for this analysis. Table 3.0-1 was cross checked against the County's list of renewable energy projects which totals over 20,000 acres (8,094 hectares) converted from agricultural uses to other land uses that generally do not support avian species' breeding or foraging needs. In addition, approximately 87,000 acres (35,207 hectares) of agricultural fields generally used for row crops and other crop types typical in the Imperial Valley will be planted with sugarcane and/or sorghum (AECOM 2014e, p. 6-1) in association with the approved California Ethanol Project and the proposed Canergy Rockwood Project.

Another potential source of cumulative loss of farm fields as foraging habitat not included in Table 3.0-1 is the Quantification Settlement Agreement (QSA), the State Water Resources Control Board (SWRCB) orders, and IID Water Transfer Agreement. According to IID's Equitable Distribution Plan Negative Declaration (2006), IID implemented a rotation fallowing program to successfully create conserved water to deliver to the Salton Sea with IID plans to increase fallowing incrementally to a maximum of about 25,000 acres (10,117 hectares) (AECOM 2014e, p. 6-3).

The IID's Equitable Distribution Plan (EDP) allows for agricultural fallowing in the event of a supply/demand imbalance (SDI) to generate water to satisfy its legal obligations under the SWRCB orders, QSA, and/or Water Transfer Agreement. By October of each year, the IID staff forecast water demand and available supply and recommend whether there will be a SDI. The decision to recommend and adopt an SDI and implement fallowing under the EDP may take into account land that is already "fallowed" by renewable energy projects, including the proposed Project (AECOM 2014e, p. 6-3).

Figure 3 of the IID's EDP Negative Declaration shows that the IID's EDP fallowing program's impacts are less than significant in comparison with the historic variation in "natural" fallowing levels in Imperial Valley (see **Table 4.12-18** below). The IID's EDP Negative Declaration also analyzed the cumulative

impacts of the EDP's fallowing program and concluded "Because there are no [biological resource] environmental impacts associated with implementation of the EDP, there are no cumulative impacts to consider." The Biological Technical Report prepared for the proposed Project incorporates this conclusion by reference into this cumulative impacts analysis (AECOM 2014e, p. 6-4).

However, the QSA has caused IID to fallow farmland in order to conserve water. IID's recent solar fallowing program requires land converted to solar energy use to enter a fallowing program that helps the IID meet its obligations under the QSA and results in an offset to the IID's fallowing requirements. This allows land that would have been fallowed to continue to be farmed. Thus, renewable energy projects, which comprise the bulk of the 20,000 acres (8,094 hectares) of potential impact, provide an offset of IID's fallowing obligations as well as the net amount of irrigated agricultural land that remain available for foraging (AECOM 2014e, p. 6-4).

The IID plans to phase out EDP fallowing by 2018. Thus, losses due to IID's EDP fallowing that are not offset by solar fallowing will overlap with Project-related loss of agriculture for up to three years. For these reasons, IID's EDP fallowing program's impacts associated with loss of foraging opportunities on farm fields are not considered any further in this cumulative discussion (AECOM 2014e, p. 6-4).

The approved California Ethanol and Power Project and the proposed Canergy Rockwood Project listed in Table 3.0-1 are of concern to USFWS due to the conversion of vegetable and hay fields to sugarcane and sweet sorghum. In 2013, the Imperial County Agricultural Commissioner's Office and the Imperial County Farm Bureau provided a response to the USFWS and noted that "The diversification of [sugarcane and sorghum] crops can vary dramatically from year to year depending on the economics of a particular crop. In the past 50 years, alone we have seen sorghum peak at 150,000 acres (60,703 hectares) and drop to our current 520 acres (210 hectares). We have a constantly evolving cycle as new crops have been added while others have fallen out of favor…. " The Imperial County Agricultural Commissioner's Office and the Imperial County Farm Bureau response letters also included a discussion of the continued foraging opportunities provided by the ethanol projects, consistent with existing and traditional cropping patterns. For these reasons, impacts associated with conversion of cropping patterns to accommodate crops to support ethanol production (i.e., the California Ethanol and Power Project and the Canergy Rockwood Project), are not considered any further in this cumulative discussion (AECOM 2014e, pp. 6-4 and 6-5).

B. CUMULATIVE IMPACTS AND MITIGATION MEASURES

Cumulative Impacts to Biological Resources

Impact 4.12.16 Implementation of the proposed Project in combination with other proposed, approved and reasonably foreseeable projects could have cumulative impacts on special status species, sensitive vegetation communities, and jurisdictional waters. However, impacts to biological resources are addressed and mitigated on a project-by-project basis. Therefore, cumulative impacts to biological resources are considered **less than cumulatively considerable**.

Construction

Construction of both the Full Build-out Scenario and each individual CUP (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario could contribute to cumulative impacts to sensitive vegetation communities, federal and/or state jurisdictional waters and wetlands, state non-listed special status plant species, federal and/or state listed wildlife species, migratory birds, and wildlife movement. However, impacts associated with construction would be reduced to less than significant at the Project-specific level with the implementation of Applicant proposed Measures/Project Design Features (as

reflected in Table 2.0-9, in Chapter 2.0 Project Description) and compliance with mitigation measures MM 4.12.1a, MM 4.12.1b, MM 4.12.1c, MM 4.12.1d, MM 4.12.2, MM 4.12.3, MM 4.12.6, MM 4.12.14a, and MM 4.4.1a (in Section 4.4, Air Quality), and MM 4.11.1a and MM 4.11.1b (in Section 4.11, Hydrology and Water Quality).

Loss of Agriculture

As described above, cumulative projects considered for their potential significant cumulative loss to foraging habitat would result in an approximately 20,000-acre (8,094-hectare) conversion of agricultural land use to a non-agricultural land use. Like the proposed Project, which would result in a long-term fallowing of agricultural land, most other cumulative projects identified in **Table 4.12-18** would also result in a long-term fallowing/agricultural land use conversion. Unlike a permanent conversion of agricultural land to urban or industrial use, the solar projects are considered long-term fallowing because these projects are required to restore the sites back to agricultural use (AECOM 2014e, p. 6-5).

The proposed Project and all cumulative projects must comply with requirements that reduce and mitigate impacts on biological resources. The Federal ESA, MBTA (16 U.S.C. 703 et seq.) and CFGC Sections 3503.5, 3503, and 3513 (AECOM 2014e, p. 6-5) are among the statutory and regulatory requirements that the Project and cumulative projects may be required to comply with in order to reduce the effects of reduced farm fields for foraging for those special-status animal species.

CDFW mitigation guidelines for BUOW define mitigation measures to avoid and minimize direct effects to this species during construction as well as provide compensatory mitigation for indirect effects caused by loss of foraging habitat. Project proponents generally incorporate the 2012 CDFW Staff Report's recommendations to reduce Project impacts on BUOW foraging habitat to less than significant by protecting agricultural lands through a conservation easement or acquisition of fee title and lease back for agricultural use (AECOM 2014e, p. 6-5).

The Imperial County General Plan has provisions to protect biological resources as well as stringent measures to protect agricultural land uses in the Imperial Valley. Regional land designations also provide protection for wildlife species and biological resources. The California Desert Conservation Area (CDCA) encompasses 25 million acres (10 million hectares) of land in southern California that were designated by the Federal Lands and Policy Management Act (FLMPA). The Bureau of Land Management (BLM) directly administers approximately 10 million acres (4 million hectares) of the CDCA. The CDCA Plan-designated Yuha Basin 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. While the Yuha Basin ACEC is not farmed land, it is adjacent to the Imperial Valley agricultural matrix and provides natural habitats that provide foraging opportunities for wildlife species (AECOM 2014e, p. 6-6).

As discussed above, cumulative agricultural losses are estimated to impact a total of 20,000 acres (8,094 hectares) of the 565,372 acres (228,798 hectares) of irrigated farmland in the Imperial Valley. Foraging lands within the Imperial Valley Agricultural Complex surrounds El Centro and spans from the Republic of Mexico to the Salton Sea. In 2012, the "Imperial County Agricultural Crop and Livestock Report" (Imperial County 2012) reported approximately 396,839 acres (160,595 hectares) of field crops being grown within this large agricultural complex, including primarily alfalfa hay, bermudagrass hay, kleingrass hay, pastured crops, sudangrass hay, and wheat. An additional 37,744 acres (15,274 hectares) of primarily alfalfa and bermudagrass were grown as seed crops totaling over 434,583 acres (175,870 hectares) of alfalfa and grass crops. However, as documented in **Table 4.12-18**, the amount of land in agricultural production varies widely from year to year (AECOM 2014e, p. 6-6).

TABLE 4.12-18
AGRICULTURAL CROP HISTORY FOR 2005–2012 IN THE IMPERIAL VALLEY[1]

Year	Total (Acres)	Variation (acres)
2012	434,583	27,728
2011	406,855	4,802
2010	402,053	(13,312)
2009	415,365	(61,517)
2008	476,882	63,165
2007	413,717	(22,357)
2006	436,074	28,497
2005	407,577	
Average	**424,138**	

Source: AECOM 2014e, p. 6-4.
[1] Estimated field crops and alfalfa and Bermuda for seed; Variation from Prior Year.

The approximately 20,000 acres (8,094 hectares) of agricultural land expected to experience long-term conversions to nonagricultural uses by cumulative projects is well within the annual variation of amount of land in agricultural production. Furthermore, a net loss of approximately 20,000 acres (8,094 hectares) of foraging habitat within the (average) 424,138-acre (171,643 hectares) alfalfa and grass crops complex (**Table 4.12-18**) represents less than a 5 percent loss (AECOM 2014e, p. 6-6).

Mitigation for loss of BUOW foraging habitat (agricultural fields) provided by the Project (the equivalent of 614 acres (248 hectares) of core foraging habitat through short-term farm agreements or conservation easements contributes to the other cumulative projects' mitigation that are also conserving farm field foraging lands for the benefit of BUOW and other wildlife species. For these reasons, cumulative impacts from the Project and cumulative projects in **Table 4.12-18** identified to have potentially significant foraging habitat impacts would be **less than cumulatively considerable** (AECOM 2014e, p. 6-6).

Loss of Wetlands and Waters

The Federal Wetland Permitting Program: Avoidance and Minimization Requirements (AECOM 2014e, p. 6-6), states that the Los Angeles District's final mitigation guidelines and monitoring requirements contain several lengthy references to alternatives analysis, avoidance, and minimization. Guidelines state that no discharge of dredged or fill material shall be permitted if there is a practicable alternative available to the proposed discharge that would have less adverse impact on the aquatic ecosystem, if the alternative does not have other significant adverse environmental consequences. Practicability is defined in terms of cost, logistics, and existing technology in light of the overall project purpose. An applicant is required to notify the USACE regarding authorization under an existing General Permit; it is likely that the USACE Los Angeles District's verification letter/notice to proceed will require compensatory mitigation. Clearly, the sequence of avoidance, minimization, and compensatory mitigation specified by the Section 404(b)(1) Guidelines and the Mitigation Memorandum of Agreement is fundamental to the administration of the USACE's regulatory program. The USACE strives to avoid or minimize adverse impacts to WUS, and to achieve a goal of no net loss of wetland functions and values. Implementation of USACE's permitting policy directive of no net loss of wetland function and values would result in a **less than cumulatively considerable impact** to biological resources (AECOM 2014e, pp. 6-6 and 6-7).

The Federal Clean Water Act 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. The proposed Project 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 Project (**Table 4.12-18**) 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. Laws, regulations and guidelines are implemented at the federal, State, and local level through NEPA, CEQA, and local planning compliance, and form comprehensive protection scheme for the biological resources identified in this section (AECOM 2014e, p. 6-7).

As with the proposed Project, each of the cumulative projects identified in **Table 4.12-18** would also be required to provide mitigation for any unavoidable impacts to wetlands and jurisdictional waters. Additionally, a majority of the cumulative projects' potential impacts are the result of a loss of agricultural land. As discussed above, normal crop rotation practices and the reduced need for IID fallowing may offset these potential impacts. For these reasons, the cumulative impact to wetlands and jurisdictional waters from the Project and cumulative projects identified in **Table 4.12-18** would be **less than cumulatively considerable** (AECOM 2014e, p. 6-7).

Finally, BLM and Department of Energy (DOE) analyzed the cumulative impacts of solar development across a six-state study area on biological resources in the Final Solar Programmatic Environmental Impact Statement (PEIS). BLM and DOE concluded that cumulative impacts on wildlife from foreseeable development in the six-state region would be small provided mitigation measures to preserve important habitat and migration corridors are implemented (or sufficient alternative lands are set aside as compensation) (AECOM 2014e, p. 6-7).

In summary, upon implementation of mitigation measures MMs 4.12.1a-d, MM 4.12.2, MM 4.12.3, MM 4.12.7, MM 4.12.14a, MM 4.4.1a (in Section 4.4, Air Quality), and MMs 4.11.1a and MM 4.11.1b (in Section 4.11, Hydrology and Water Quality), construction of the Full Build-out Scenario would result in a **less than cumulatively considerable contribution** to impacts to sensitive vegetation communities, federal and/or state jurisdictional waters and wetlands, state non-listed special status plant species, federal and/or state listed wildlife species, migratory birds, and wildlife movement. Likewise, the proposed Project, when combined with other cumulative projects, would result in a **less than cumulatively considerable impact** to sensitive vegetation communities, federal and/or state jurisdictional waters and wetlands, state non-listed special status plant species, federal and/or state listed wildlife species, migratory birds, and wildlife movement.

Operation

Operation of both the Full Build-out Scenario and each individual CUP (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario could contribute to cumulative impacts to sensitive vegetation communities, federal and/or state jurisdictional waters and wetlands, state non-listed special status plant species, federal and/or state listed wildlife species, migratory birds, and wildlife movement. However, the Project operations potential impacts to biological resources would be reduced to less than significant at the Project-specific level with the Applicant proposed Measures/Project Design Features (as reflected in Table 2.0-9, in Chapter 2.0 Project Description) and compliance with mitigation measures MMs 4.12.1e, MM 4.4.1a (in Section 4.4, Air Quality), and MM 4.11.1b (in Section 4.11, Hydrology and Water Quality).

Operation of the proposed Project would not contribute to loss of agricultural land or foraging habitat beyond that identified in association with construction. Therefore, upon implementation of mitigation measures MMs 4.12.1e, MM 4.4.1a (in Section 4.4, Air Quality), and MM 4.11.1b (in Section 4.11, Hydrology and Water Quality), operation of the proposed Full Build-out Scenario would result in a **less**

than cumulatively considerable contribution to impacts to sensitive vegetation communities, federal and/or state jurisdictional waters and wetlands, state non-listed special status plant species, federal and/or state listed wildlife species, migratory birds, and wildlife movement. Likewise, operation of the proposed Project, when combined with other cumulative projects, would result in a **less than cumulatively considerable impact** to sensitive vegetation communities, federal and/or state jurisdictional waters and wetlands, state non-listed special status plant species, federal and/or state listed wildlife species, migratory birds, and wildlife movement.

Decommissioning

Decommissioning activities within both the Full Build-out Scenario and each individual CUP (13-0036 thru 13-0052) proposed as part of the Phased CUP Scenario could contribute to cumulative impacts to sensitive vegetation communities, federal and/or state jurisdictional waters and wetlands, state non-listed special status plant species, federal and/or state listed wildlife species, and migratory birds. However, the Project's potential decommissioning-phase impacts to biological resources would be reduced to less than significant at the Project-specific level with the implementation Applicant proposed Measures/Project Design Features (as reflected in Table 2.0-9, in Chapter 2.0 Project Description) and compliance with mitigation measures MM 4.12.1f, MM 4.12.14b, MM 4.4.1a (in Section 4.4, Air Quality), and MM 4.11.1b (in Section 4.11, Hydrology and Water Quality).

Decommissioning of the proposed Project would not contribute to loss of agricultural land or foraging habitat beyond that identified in the construction-phase analysis. Decommissioning would result in the reclamation of the Project area (as a Whole) to pre-Project conditions, thereby providing a beneficial contribution to agricultural lands in the County. Therefore, upon implementation of mitigation measures MM 4.12.1f, MM 4.12.14b, MM 4.4.1a (in Section 4.4, Air Quality), and MM 4.11.1b (in Section 4.11, Hydrology and Water Quality), decommissioning of the proposed Full Build-out Scenario would result in a **less than cumulatively considerable contribution** to impacts to sensitive vegetation communities, federal and/or state jurisdictional waters and wetlands, state non-listed special status plant species, federal and/or state listed wildlife species, and migratory birds. Likewise, decommissioning of the proposed Project, when combined with other cumulative projects, would result in a **less than cumulatively considerable impact** to sensitive vegetation communities, federal and/or state jurisdictional waters and wetlands, state non-listed special status plant species, federal and/or state listed wildlife species, migratory birds, and wildlife movement.

Mitigation Measures

As discussed throughout this section, the proposed Project would be subject to all mitigation measures identified to address Project-specific impacts. These include general construction, operation and decommissioning measures MM 4.12.1a, MM 4.12.1b, MM 4.12.1c, MM 4.12.1d, MM 4.12.1e, and MM 4.12.1f, applicable to all sensitive biological resources, MM 4.12.2 (to mitigate impacts to federal and state jurisdictional areas); MM 4.12.3 (to mitigate impacts to non-listed special-status plant species); MM 4.12.5 (to mitigate impacts to YCR); MM 4.12.7 (to mitigate impacts to BUOW); and MM 4.12.14a and MM 4.12.14b (to mitigate impacts to nesting and migratory birds other special-status avian species).

Significance After Mitigation

Following implementation of the mitigation measures identified above, direct and indirect cumulative impacts to biological resources including sensitive vegetation communities, federal and/or state jurisdictional waters and wetlands, state non-listed special status plant species, federal and/or state listed wildlife species, migratory birds, and wildlife movement would be reduced to less than cumulatively considerable levels. Following mitigation, all cumulative impacts to biological resources would be considered **less than cumulative considerable**.

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